Role of Skill India Initiative in Indian Food Processing Industries

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ABSTRACT

Indian food processing sector has shown promising growth with wider scope to accelerate agricultural economy of the country. It has given level playing to the multinational corporate to excel direct retailing of the food products. This study has tried to explore the factors affecting the quality delivery in the food processing industry. The conceptual framework has been developed on the basis of existing literature and finds nine responsible factors to deliver quality in the food processing industry. Statistical tests are used to examine the quest, based on the inputs from 50 food processing entrepreneurs. A survey based on structured questionnaire was conducted in three districts of Uttar Pradesh. The finding reveals that availability of educated and trained workers are the most challenging task for food processing players. The study further explores the potential and prospect of Skill India initiative in resolving the scarcity of qualified manpower. It is found that PMKVY (Pradhan Mantri Kaushal Vikas Yojana) is giving the meaningful result by adding expertise to employed and unemployed individuals. This initiative is producing competent workforce in almost every zone in India. It is needed to include industrial participation for delivering training so that the needs of both parties were fulfilled.

JEL Classification: L66, J24, P23, L15, P47

Keywords: Food Industry, Skill Development, Product Market, Product Quality, Performance and Prospects

Food processing is defined as a process to transform raw materials from the horticultural or agricultural produce by using various techniques like sorting, grading and packaging. It is also called as a technique of manufacturing and preserving food substances in a manner to enhance product shelf-life, improve quality and make them functionally more useful. Food processing covers produces from agriculture, horticulture, plantation, animal husbandry, fisheries etc.

The processed food industry is divided into three broad categories (Jamshed and Ahmad, 2018):

Category 1: Minimally processed foods: Mostly organic or minimum processing, or mostly physical processed used to make foods durable, accessible, convenient, palatable, safe & attractive.

Category 2: Processed culinary or food industry ingredients: Extraction and purification of unprocessed or minimally processed foods, resulting in additives or ingredients used for preparation and cooking of dishes at home or restaurants or as an input for ultra-processed food products.

Category 3: Ultra-processed food products: Processing of a mix or processed culinary or food ingredients to create durable, accessible, convenient, easy to serve, ready to eat snacks or desserts as alternative to home dishes or other high demand foods.

Indian food processing sector is widely recognized as a 'sunrise sector' having enormous potential to uplift agricultural economy, creation of processed food manufacturing units, food chain facilities which provide employment and foreign exchange earnings (Bhuyan, 2010). India is among the top food producers in the world, with the second

largest arable land area. It is the world largest producer of pulses, sugarcane, milk and tea while the second largest producer of rice, wheat, fruits and vegetables. India's Food Processing industry is the largest industries in the country - it is ranked 5th in terms of production, consumption, export and expected growth. The Indian food industry was estimated to be worth over US$ 258 billion in FY 2015 (World of Food India, 2011; Merchant, 2008) and is expected to grow upto US$ 482 billion by FY 2020 (ET, 2017). Indian food market revenue reaches to US$ 233 billion in 2018 and the current market is expected to grow by 105% annually with CAGR 2018-2021 (Statista, 2017). Indian food processing industry constituted 14% to India's GDP through manufacturing till December 2015 in FY 2016 (IBEF, 2017). The inflow of FDI has significantly increased from 198.13 (₹ Crore) in 2000-2001 to 2500.85 (₹ Crore) in 2013-2014.

The Food market constitutes all type of minimally processed, processed and ultra-processed foods which have been prepared or preserved in some way or another. Unprocessed foods such as fresh fruits and vegetables are not included here. Indian food symbolizes a significant part of household expenditure but the uniqueness of its behavior which states that the expenditure on such items generally decreases with increasing income. Some segments are generally figure out maximum sales volume in the entire food segments such as Dairy Products, Meat Products, Confectionery and Baked Goods. Some of the leading brands in these markets are the largest multinational players in consumer goods segments such as Nestle, Pepsico, Kelloggs, Danone, Unilever etc (FICCI, 2007). The market is split into the following segments:
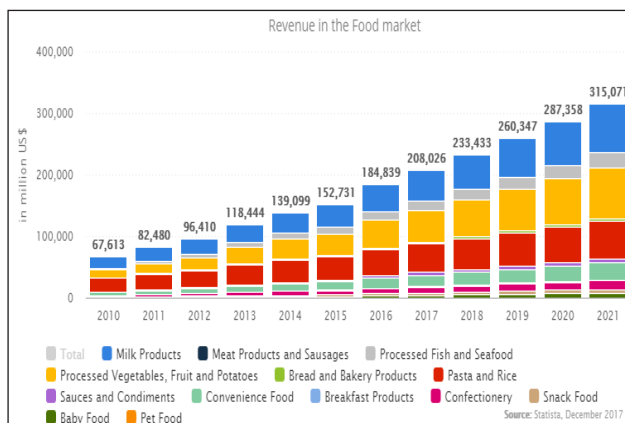
Fig. 1: Revenue Trend in the food industry (in US$ million)

Objective of the Study

The key objectives are:

1. To evaluate the factors affecting quality delivery in food processing industry.

2. To explore the support of skill India initiatives in food processing industry.

Conceptual Framework: Quality Delivery in Food Processing Industry

Food processing industry provides plenty of opportunities because of its collaborative structure consists agriculture and industry (Meeta, 2007). It increases employment, gives remunerative prices to the farmers, ensures value addition, provides opportunity to diversify, curbing migration, tackles food inflation, and reduces wastages. It has potential to doubling farmer income (Mehta, 2012). On the other hand, the food processing industry is facing various challenges in quality delivery (Reardon *et al.* 2001). Suryaningrat *et al.* (2003) explained that raw material availability is the most important factor for sustaining processing activities in an agro-industrial system. Large food processing industries are lacking with adequate raw material, poor quality of supply and variety of fruit and vegetable (Aquino, 1991). The Indian domestic food market is expected to grow by nearly 40% of the current market size to $258 billion by 2015 and $344 billion by 2025 (World of Food India, 2011; Merchant, 2008). Singh *et al.* 2012 concluded in their study that food processing industry is capital intensive and capital being one of the most important factors to support the growth prospect of this industry as it creates a strong entry barrier and allows limited number of players to enter the market and if this constraint is not addressed sooner, can impede the growth prospects of the Food Processing Industry in India. One of the biggest constraints is that this industry is capital intensive. Some common problems associated with the food industry across the nation are the shortage of raw material, quality delivery, lack of continuous supply of seasonal raw material, inadequate trained labor force (NSDC, 2010), costly imported packing material, infrastructure and technological deficiencies (Hicks, 1991). Innovation and technological advancement can create difference by enhancing process and increasing shelf life. Forrester (1958) stated that the processes used

at different nodes of the supply chain result in a variety of different dynamic behaviors, often to the detriment of overall performance.

The ways in which food processing industry compete is also changing, with increased emphasis on product differentiation and product quality attributes (Raikes *et al.* 2000). Dickson (1966) concluded that quality, delivery, and performance are the three most important criteria. Weber *et al.* (1991), based on a comprehensive review of vendor evaluation methods, surmised that price was the highest-ranked factor, followed by delivery and quality. Suryaningrat *et al.* (2015) found that common problems in processed industries are formality of raw material procurement and industries have adopted contract system to reduce risk of raw material availability and price variations. Indeed, it is argued that the ways in which agricultural food markets are structured and operate are defined by quality-centered competition, and at the same time the associated institutional arrangements are crucial to the legitimacy of the quality attributes embedded in products (Allaire and Boyer, 1995; Busch and Bain, 2004). Quality control emphasizes the factors responsible in getting the quality finished goods which starts from the raw material selection, methods adopted in the process, packaging, storage, distribution etc (Herschdoerfer, 1986). Grunert (2005) revealed that quality control and safety are important aspects of food products delivery to consumers.

A large body of literature cutting across agricultural economics and rural sociology highlights the ways in which agri-food systems are being transformed (Busch, 2000; Busch and Bain, 2004). Increasingly, supply chains for agricultural and food products are extending across the globe, facilitated in part by new food, communications, transportation technologies and a policy environment that encourages more free international trade (Nadvi, 2004). According to the FICCI survey (2010) inadequate infrastructural facilities, comprehensive national level policy on food processing sector, ambiguous food safety laws, unavailability of trained man power, inconsistency in central and state government policies are key challenges in food processing sector.

The conceptual framework has adopted raw material availability, educated or trained worker, and accessibility of funds as inputs factors. Availability

of require technologies for production is taken as process factor.
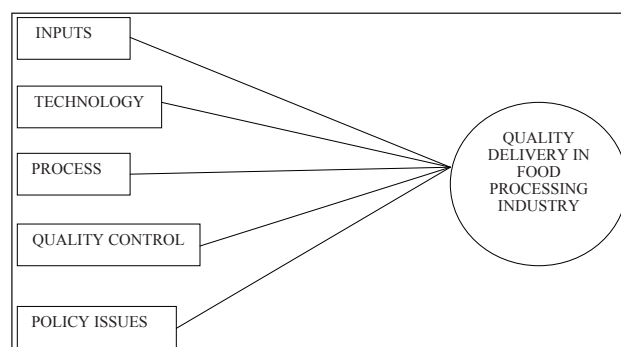
Fig. 2: Conceptual Framework on Quality Delivery in FPI

Availability of modern equipment and manufacturing plants are taken as technology factors. Quality control is considered with implementation of ISO certification, HACCP (Hazard Analysis and Critical Control Points), TQM (Total Quality Management), GMP (Good Manufacturing Practices), GHP (Good Hygienic Practices), FSSAI (Food Safety and Standards Authority of India) etc. The legal complications are taken as policy issues. These above stated factors drive the quality delivery aspect in food processing industries.

Data and Methodology

The research covers both primary and secondary data. We have used government reports, records, journals, periodicals, and websites to collect data from secondary sources. The conceptual framework was developed on the basis of gathered information from various secondary resources. Thereafter, primary survey was conducted on more than 100 food processing entrepreneurs where 50 respondents have given the complete information. The survey was based on the structured questionnaire which covers the food processing industries randomly in three districts of Uttar Pradesh i.e. Agra, Aligarh and Mathura. The adoption of questions and statements were simple and clear to describe the barriers or factors affecting the quality delivery in the food processing industry. Respondents were reacquainted with the variables under the analysis in order to avoid favored responses. The degree of consent or dissent was recorded on a five point Likert-scale. The scale for measurement starts from 1= Not Important At All, 2 = Of Little Importance, 3 = Of Average Importance, 4 = Very Important, 5

= Absolutely Essential. The survey was anonymous and aimed to examine the severity of variables in the quality delivery of food processing industry.

RESULTS AND ANALYSIS

On the basis of review of literature, nine (9) 'factors affecting quality delivery in Food Processing Industry' were identified as stated in conceptual framework. The inputs are collected from 50 entrepreneurs covering industries such as Fruits and Vegetable, Food Grain Milling, Dairy Products, Meat & Poultry, Fish and Sea food, Bread and Bakery, Beverages, Soya food processing, packaged Foods in Aligarh, Mathura and Agra districts. The statistical test reveals that availability of educated and trained workers are most challenging task for food processing industries. The result states that every factor considered in this study has importance in the food processing industry.

Table 1: Factor Affecting the Quality Delivery in Food Processing Industry

Q. No.	Factors Affecting Quality Delivery in FPI	Mean	Std. Error	Std. Deviation
Q1	The raw materials used for production	3.46	0.152	1.073
Q2	The technological process of production	3.42	0.143	1.012
Q3	Modern equipment and manufacturing plant	4.14	0.121	0.857
Q4	The quality control methods	3.32	0.150	1.058
Q5	Availability of Educated and trained Workers	4.74	0.063	0.443
Q6	Consistency in central and state policies	3.84	0.129	0.912
Q7	Implemented standard or management system	3.72	0.131	0.927
Q8	Availability of Funds	3.50	0.152	1.074
Q9	Legal Issues	4.12	0.117	0.824

In the above table some factors are showing high standard deviation which means high level of variation in the responses of entrepreneurs. Low standard deviation means the entrepreneurs are largely agreed on the same set of responses. Standard error of the mean is a measure of how far your sample mean is likely to be from the true mean of the population. So, the lower the standard error of the mean suggests that calculated means is close to actual mean. Largely entrepreneurs are more concerned about availability of educated employees and trained employees for food processing industry. Legal issues, modern equipment and manufacturing plants are the next major factor for quality delivery in food processing industry.

Skill India Campaign in Food Processing Industry

Ministry of food processing industry (MoFPI) has initiated skill development by providing infrastructure facilities to skill training centers and designing course curriculum for training modules. MoFPI has adopted skilling or capacity building programs, outreach programs and village adoption program with the help of NIFTEM (National Institute of Food Technology Entrepreneurship and Management) and IIFPT (Indian Institute of Food Processing Technology) to develop entrepreneurship among individuals. Ministry of Food Processing Industries (MoFPI) is working in close collaboration with Food Industry Capacity and Skill Initiative (FICSI), Sector Skill Council (SSC) in food processing and regularly guiding and assisting it in achieving its mandate. Food Industry capacity and skill initiative (FICSI) is dedicated organization formed to identify job roles and competencies level. The idea is to develop National Occupational Standard (NOS). The well established training set-up has an aim of skill India campaign launched on 15th July 2015 which is carried under FICSI. There are various programs under Skill India initiatives of the government such as 'National Skill Development Mission', 'National Policy for Skill Development & Entrepreneurship 2015', 'Pradhan Mantri Kaushal Vikas Yojana (PMKVY)' and the 'Skill Loan scheme'. Under PMKVY 1.0 and PMKVY 2.0 various training partners and training centers were affiliated by FICSI which gives training to the unskilled workforce and on completion of it they award certificates to the candidates. At present, 22461 candidates have been certified under PMKVY 1.0 and 1815 candidates have been certified under PMKVY 2.0 scheme (MoFPI 2018).

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship scheme of the Ministry of Skill Development & Entrepreneurship (MSDE). The objective of this Skill Certification Scheme is to enable a large number of Indian youth to take up industry-relevant skill training that will help them

in securing a better livelihood. Short term training and recognition of prior learning are two modes of skill development for food processing industry under PMKVY. Individuals with prior competencies of the specific field or job role are assessed, certified and monetary rewarded under Recognition of Prior Learning (RPL).

Table 2: Candidates under PMKVY 2.0

| Region | Short Term Training | | | | Recognition of Prior Learning | | |
	Enrolled	Trained	Certified	Placed	Enrolled	Trained	Certified
Central Zone	420	N.A	N.A	N.A	1495	1495	1338
East Zone	1471	888	744	237	N.A	N.A	N.A
North Zone	657	467	330	94	500	500	421
South Zone	773	630	526	N.A	104	104	N.A
West Zone	117	117	108	27	25	20	20
Total	**3438**	**2102**	**1708**	**358**	**2124**	**2119**	**1779**

N.A: Data Not Available.
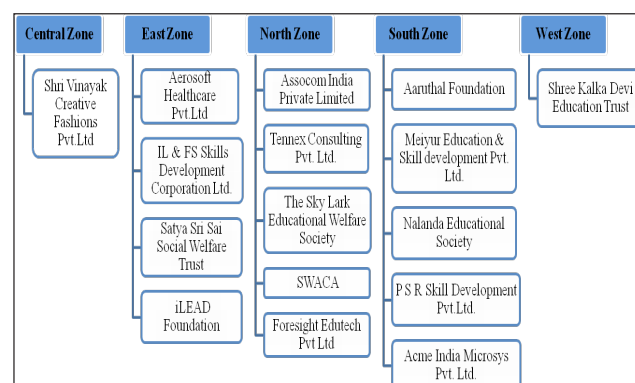
Source: *compiled from pmkvyofficial.org 2018.*

In Short term training the target is to train school or college dropouts or unemployed young people living across all states and districts of India in various sectors and job roles. The summary of RPL and Short term training is given in the above table 2. The unique feature of short term training is to get placement of the certified candidates while candidates under RPL belongs to the working groups. The potential of training can be further understand with the type of organizations involved in it. The RPL approved project implementation agencies are as under.

Fig. 3: RPL Approved Project Implementing Agency (PIA) Zone wise
Source: *compiled from pmkvyofficial.org 2018.*

These agencies are primarily intended to enable and mobilize a large number of Indian youth to take up skill training and become employable and earn their livelihood. The PMKVY initiative came into force on March 20, 2015 to increase the productivity of the existing workforce and align the training and certification to the needs of the country. The Scheme will provide monetary incentives on successful completion of market-driven skill training and certification to approximately twenty four lakh youths in a span of one year from the date of implementation of the scheme. The Government is responsible for carrying out awareness building and mobilization activities with the involvement of local State and district governments. The agencies working for short term training are as under.

Fig. 4: Short Term Training Partner for Various Zones
Source: *Compiled from pmkvyofficial.org 2018*

The summary of project implementation agency is as under:

Project Implementation Agency Snapshot

Assocom-India was started in the year 2001 as a Secretarial Service and Business Promotion Support provider to the esteemed US Co-operators and Trade associations. It has specialization in the event management, market research, trade fairs/exhibitions, promotion, training -programs and publications etc. It is India's foremost consultancy with an extensive network of professionals across the country and highly competent industrial/academician engaged to provide extensive solutions in the food, agriculture and hospitality and tourism industry.

Shri Vinayak Creative Fashions Private Limited was incorporated in 2013 at Gwalior. It is involved in Manufacture of wearing apparel.

Indian Navy is not needed to introduce.

Aerosoft Healthcare (P) Limited Company established in 2011. Aerosoft Healthcare Pvt. Ltd. possesses the best manufacturing and service facilities for entire range of herbal Healthcare products in India. Most popular brand names of the products are Aerocare and Aush.

IL & FS Skills is a leading vocational and employability training company. It delivers skills training programmes for students in school, youth, trainers, and working professionals for their career growth. IL & FS Skills Development Corporation Limited (IL&FS Skills) is a joint venture between IL&FS Education and Technology Services Limited (IL&FS Education) and National Skill Development Corporation (NSDC). The setting up of IL&FS Skills in 2011 was triggered by the increasing demand of trained manpower for the jobs created in various sectors.

The Institute of Leadership, Entrepreneurship and Development (iLEAD), affiliated to UGC recognized Maulana Abul Kalam Azad University formerly known as West Bengal University of Technology. iLEAD has rated the fourth best media school in the country by KPMG.

Tennex Consulting is an organization promoted by Professionals with distinguished service in the Indian Administrative Service. It caters business, technology, Statutory Compliance, Legal & Financial Structuring.

The Skylark Educational Welfare Society is located in Muzaffarnagar, Uttar Pradesh. This NGO is working on Key Issues of Animal Husbandry, Dairying & Fisheries, Agriculture, Art & Culture, Children, Disaster Management, Dalit Upliftment, Education & Literacy, Food Processing, Health & Family Welfare, HIV/AIDS, Human Rights, Information & Communication Technology, Micro Small & Medium Enterprises, Rural Development & Poverty Alleviation, Scientific & Industrial Research, Science & Technology, Sports, Vocational Training, Women's Development & Empowerment, Youth Affairs.

Sefton Women's & Children's Aid (SWACA) is dedicated team to help women, young people and children to survive the impact of domestic violence and abuse by giving free practical and emotional support. They offer services on social issues such as old age, disability, sexuality, race or religion.

F-TEC Skill Development (Foresight Edutech Pvt. Ltd.) has affiliation of National Skill Development Corporation (NSDC) as training partner, with state of the art multi skilling training centers across India. It has expertise and experience of 22 years in skilling youth from middle and lower income groups.

Aaruthal Foundation Formerly Aaruthal Trust is located in Erode, Tamil Nadu. It organizes and imports various skill development programmers for various sections of people from the target areas. It coordinates with local government agencies and assists the target groups in availing the benefits at maximum level.

Meiyur Education & Skill Development Pvt Ltd. (MESD) is focused on delivering value added Training programmes to the poor and needy sections of the society by offering them a platform for economic growth. In this context MESD aligned itself with NSDC as training partner in agriculture, food processing, Furniture & fittings.

Nalanda Educational Society is the Training institute in South India. Nalanda Educational Society was established in the year 1986 to promote education from the primary school level up to post Graduation across the entire education spectrum. The courses offered by this society cover humanities, Engineering, Computer Science & Management.

Acme India Microsys Pvt. Ltd. of Distance Education was established to provide quality education and training at the grass root level. It was established in 2004 with the main objective of developing a regional center of excellence for the information technology, Vocational Education, Skill Development, Soft Skills all over India.

Shree Kalka Devi Education Trust was founded in July, 2005 by a group of NRIs. They have leadership & managerial experience in Fortune 50 companies.

Under PMKVY sector skill councils were build which were focused to deliver training and information for a particular industry. Food Industry Capacity and Skill Initiative (FICSI) is engaged in various skill development initiatives such as need identification, planning and maintenance of skill inventory, determination of skills or competency standards and qualifications, standardize affiliation & accreditation process, participate in examination & certification, Training of Trainers, promoting

academics of excellence and establishment of specific Labour Market Information System (LMIS). FICSI is covering all the major segments of food processing domain via Fruits and Vegetables, Food Grain Milling (including Oil seeds), Dairy Products, Meat and Poultry, Fish & Sea Food, Bread and Bakery, Beverages, Soya Food Processing and Packaged Foods.

Quality Delivery and Human Resource Development

Quality delivery has become a key requirement for ascertaining competitive edge, and it turned out that the availability of raw materials, labor, and technology could be the basics for achievement of require productivity, further process, policy and quality control leads to the long-term sustainability and organizational success. A study conducted in 1993 by the Institute of Personnel Management (Institute of Personnel Management - IPM), showed that human resource management is crucial factor for the successful execution and continuation of quality delivery and that their input is not just an issue of preference, but an essential condition, if the purpose is an efficient quality management (Powell, 1995). Thus, human resources management and quality management have reciprocal relationship that can be represented responsive reaction: quality management causes changes in the processes of human resource management, and the success and effectiveness of the quality management affects commitment of human resources management. Quality delivery leads to changes in the role of human resources management in organizations of the food industry. Due to the rapid pace of changes in technology, international trade, market prices, competitive products, customer demands and expectations, many companies are forced to change the way of business practices. Sometimes the changes are reflecting in the reduction of the number of employees due to absence of a particular skill set required to perform that job. There are numerous specialized and technical expertise food processing industry demands. The higher the quality human resource the higher would be the performances. Many studies have advocated the roles of skilled, trained and educated human resource are making the organization successful. The proactive response from the government side to uplift human resource

capacity can give booster to the growth of food processing industry. The other side of the story is to create entrepreneurial environment due to command over skill set is inevitable.

CONCLUSION

The statistical result shows the significance of educated and trained manpower in the food processing industry. Skill India initiative is doing well by full filling this gap in the industry. The evaluation of the resources and training agencies provides the kind of talent involved in the delivery of skill sets. There is a need to expand these skill-set training by involving industries. Further the reach of training needs to expedite and enlarge. The beneficiaries of these schemes have two fold target audiences i.e. industry and individual. There is a need to work on the demand side of the skill set. The certificate and award are not enough to inculcate long term sustainability of these programs. The necessity is to give career prospects for individuals through placement which is already in the system but very minimal. It needs to improve by adding benefits for industries on recruiting such certified person. It may be possible by restricting the desk level operations without certified individuals. Further researches are necessary to know the segment wise importance of skill India initiative within food processing industry. The effect on food processing industry productivity due to skilled or trained manpower (under skill India initiative) may give adequate direction to the policy makers.

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