PERFORMANCE OF FOOD PROCESSING INDUSTRY IN MIZORAM: A CASE STUDY OF AIZAWL DISTRICT

A Dissertation submitted in partial fulfilment for the award of the degree of Master of Philosophy in Economics

By

LALMUANSANGI

MZU/M.Phil/460 of 02.05.2018

Supervisor

Dr. LALRINTHANGA

DEPARTMENT OF ECONOMICS

SCHOOL OF ECONOMICS, MANAGEMENT AND INFORMATION SCIENCE

MIZORAM UNIVERSITY

AIZAWL-796004

2018

MIZORAM UNIVERSITY

DEPARTMENT OF ECONOMICS

AIZAWL, MIZORAM-796004, Phone 0389-2330708/2330709, Fax: 0389-2330709

CERTIFICATE

This is to certify that Lalmuansangi has worked under my supervision and guidance on a research topic entitled **"Performance of Food Processing Industry in Mizoram: A case study of Aizawl District"** for the degree of Master of Philosophy in Economics, Mizoram University, Aizawl. The work embodies a record of original investigations and no part of it has been submitted for any other degree in other universities.

Date:_____ **(Dr. LALRINTHANGA)**

Supervisor

MIZORAM UNIVERSITY

November, 2018

DECLARATION

I, Lalmuansangi, hereby declared that the subject matter of this dissertation is the record of work done by me, that the content of this dissertation did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and the dissertation has not been submitted by me for any research degree in any other university/institute.

This is being submitted to the Mizoram University for the degree of Master of Philosophy in Economics.

(LALMUANSANGI)

(Dr. LALHRIATPUII)
Head

(Dr.LALRINTHANGA)
Supervisor

ACKNOWLEDGEMENT

I would like to thank The Almighty God for giving me protection and for blessing me with good health to finish this research.

My indebted gratitude goes out to my supervisor, Dr Lalrinthanga, Associate Professor, Department of Economics, Mizoram University, Aizawl for his endless support, guidance and help throughout my research.

I thank all the other faculty members of Department of Economics, Mizoram University, especially Dr James L.T. Thanga, for his help and encouragement throughout my research work and for providing me with invaluable advice and suggestions.

I also extend heartfelt gratitude to all the respondents who kindly took the time to answer my interviews out of their busy schedules. Their inputs have helped me in completing my work.

I would also like to thank all my family members and friends for their constant support and motivation throughout my research work. Without their encouragement and patience, I would never have completed this work.

(LALMUANSANGI)

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ASI- Annual Survey of India

CAGR- Compound Annual Growth Rate

CII- Confederation of Indian Industry

CSSIR- Council of Scientific and Industrial Research

DIC- District Industries Centre

DIPP- Department of Industrial Policies and Promotion

DME- Directorate Manufacturing Establishment

EDP- Entrepreneurship Development Programme

EM- Entrepreneur Memorandum

FAO- Food and Agriculture Organization of the United Nations

FDI- Foreign Direct Investment

FICCI- Federation of Indian Chambers of Commerce and Industry

FPTC- Food Processing Training Centre

FPO- Food Products Order

FPU- Food Production Unit

FSSAI- Food Safety and Standards Authority of India

GDP- Gross Domestic Product

GHP- Good Hygienic Practices

GMP- Good Manufacturing Practices

Gm- Gram

GVA- Gross Value Added

HACCP- Hazard Analysis and Critical Control Points

HRD- Human Resource Development

HSLC- High School Living Certificate

HSSLC- Higher Secondary School Living Certificate

HUL- Hindustan Unilever Limited

IBEF- India Brand Equity Foundation

ICAR- Indian Council of Agricultural Research

IDBI- Industrial Development Bank of India

ITC- India Tobacco Company

JV- Joint ventures

Kg- Kilogram

KVI- Khadi & Village Industries

KVIB- Khadi & Village Industries Board

MIFCO-Mizoram Food and Allied Industries Corporation

MIFPROY-Mizoram Food Processing Industry

MFPRTC-Mizoram Food Processing Research and Training Centre

MOD- Mad Over Donuts

MOFPI- Ministry of Food Processing Industries

MSMED- Micro, Small and Medium Enterprises Development

MTR- Mavalli Tiffin Room

MT- Metric Tonnes

NEDP- New Economic Development Policy

NDME- Non-Directory Manufacturing Establishment

NERAMAC- North-Eastern Regional Agricultural Marketing Corporation

NGO- Non Government Organisation

NIC- Newly industrialised Country

NLUP- New Land Use Policy

NMFP- National Mission on Food Processing

NSSO- National Sample Survey Organisation

NSDC-National Skill Development Corporation

OAME- Own Account Manufacturing Enterprises

PMEGP- Prime Minister Employment Guarantee Programme

RBI-Reserve Bank of India

RTC-Ready to Cook

RTE- Ready to Eat

SIDBI- Small Industries Development Bank of India

SSI- Small Scale Industry

SQ Km- Square Kilometre

TIIC- Tamil Nadu Industrial Investment Corporation Limited

TQM- Total Quality Management

UAM-Udyog Aadhaar Memorandum

US-United States

ZIDCO-Zoram Industrial Development Corporation

CHAPTER I INTRODUCTION

1.1 CONCEPT AND MEANING OF FOOD PROCESSING INDUSTRY

Food processing industry is one type of agro-processing industry which depends on agricultural products as raw materials. It mainly comprises of the post-harvest activities of agricultural products for processing, preserving and value-addition to make them usable for immediate consumption. It is a well recognise fact across the world that in the context of industrial development, the importance of agro-processing industries relative to agriculture increases as economies develop. It is also important to emphasise that 'food' is not just produce but encompasses a wide variety of processed products. It is in this sense that the agro-processing industry is an important part of the manufacturing sector in developing countries and the means for building industrial capacities.

The development of agro-processing industries can be traced back during the pre-independence days. Cotton mills, rice and flour mills, oil pressing etc were fostered in the business sector. During the post independence days, with a view to rendering more employment and using local resources, small scale and village industries were favoured. (niir.org)

The agro-processing industries can be broadly classified into the following three types:

- **Village or cottage industry**: An industry where the producers mostly worked from homes, produce any goods with or without the use of power. It is owned and run by households with little capital investment and a high level of manual labour. The Fixed Capital Investment per Artisan should not exceed Rs 1 Lakh.

- **Small scale industry**: It is characterized by medium investment and semi-automation, having fixed investment in plant and machinery, whether held on ownership basis or lease basis not exceeding Rs 1 Crore.
- **Large scale industry**: Factories that combine characteristics of the use of machinery, employment of wage labour and the application of regulatory measures like Factory Act. This industry comes with more than 10 Crore of investment in plant machinery.

The agro-processing industry helps in processing agricultural products such as field crops, tree crops, livestock and fisheries and converting them to edible and other usable forms. It helps to stabilise agriculture to become more profitable and create employment opportunities both at the production and marketing stages. The global market is exceedingly large for sugar, coffee, tea and processed foods such as spices, fruits, pickle, juice, snacks etc. Only with mass production coupled with modern technology and intensive marketing the domestic market as well as the export market can be exploited to the fullest extent. It is therefore imperative that food manufacturers understand the changing consumer preferences, technology and with modernization innovation and incorporation of latest trends and technology in the entire food chain as well as agro-production, the total production capacity of agro food products in the world is likely to double by the next decade. (Carlos. A 2005)

Food processing industry can be classified under village or cottage industries and, to some extent, small scale industries. It is organised by individuals with private resources or with the help of family members and are pursued as part time or full time occupation. The capital investment is small and the equipments used are simple. These industries generally used locally available resources, raw materials and indigenous skills and the output produced is generally sold in local market. (Baruah 2000)

In simple terms food processing is the transformation of raw food or cooked ingredients into food that can be prepared and consumed easily. In other words, it is the transformation of one form of food into other forms to make convenience foods. Some of the main activities involves in food processing are mincing, macerating, frying, grilling, baking, pickling, pasteurization etc.

1.2 OVERVIEW OF FOOD PROCESSING INDUSTRY

The history of food processing can be traced back to the prehistoric ages when food processing consist of fermenting, sun drying, preserving with salt, and various types of cooking (roasting, smoking, steaming, fire baking etc).The basic form of food processing involved chemical enzymatic to change to the basic structure of food in its natural form, as well as served to build a barrier against surface microbial activity that caused rapid decay.. Evidence for the existence of these methods can be found in the writings of the ancient Greek, Chaldean, Egyptian and Roman civilizations as well as archaeological evidence from Europe, North and South America and Asia. These food processing techniques remained essentially the same until the advent of the industrial revolution.

Modern food processing technology was adopted during the 19th and 20th centuries to serve military needs. In 1809 Nicolas Appert invented an airtight/sealed bottling technique that preserved food for French troops which ultimately contributed to the development of tinning. Salt-preservation was common for foods that constituted warrior and sailors' diets until the introduction of canning methods which Peter Durand started in the year 1810 and soon later become a staple around the world. Pasteurization, discovered by Louis Pasteur in 1864, improved the quality of preserved foods and introduced wine, beer, and milk preservation.

In the 20th century, World War II, the space race and the rising consumer society in developed countries contributed to the growth of food processing with such advances as spray drying, evaporation, juice concentrates, freeze drying and the introduction of artificial sweeteners, colouring agents, and preservatives as sodium benzoate etc. In the late 20th century, products such as dried instant soups, reconstituted fruits and juices, and self cooking meals were developed. By the 21th century, automatic appliances like microwave oven, blender, grilling machines etc paved way for convenience cooking.

In Western Europe and North America, the second half of the 20th century witnessed a rise in the pursuit of convenience. Food processing companies marketed their products especially towards middle-class working wives and mothers. Frozen foods found their success in sales of juice concentrates and ready to eat foods. Processors utilised the perceived value of time to appeal to the post-war population, and this same appeal contributes to the success of convenience foods today.

The food processing industry is divided into three broad segments:

- **Primary processed food** - It is the conversion of raw materials into food commodities for consumption. It includes products such as fruits and vegetables, packed milk, unbranded edible oil, milled rice, flour, tea, coffee, pulses, spices, salt, etc, which are sold in packed or non-packed forms.
- **Secondary processed food**- It involves the combination of foods in a particular way to change properties. Some of the examples are baking cakes, breads, cereals, etc.
- **Value-added processed food** - It is the process of transforming a product from raw ingredients to a more valuable state to enhance its value for sell. Some of the products include processed fruits and vegetables, juices, jams, pickles, processed

dairy products (ghee, paneer, cheese, and butter), processed meat and marine products, fried snacks, chocolates etc.

Food is normally processed to prevent, reduce, and eliminate infestation of food with microbes, insects or other vermin, to prevent microbial growth or toxin production by microbes, or reduce these risks, to stop or slow deteriorative chemical or biochemical reactions, to maintain and improve nutritional properties of food, to increase storage stability or shelf life of food, to make food more palatable and attractive and finally to make foods for special groups of people.

When designing processes for the food industry the following performance parameters may be taken into account:

- Hygiene, e.g. measured by number of micro-organisms per ml of finished product
- Energy efficiency measured e.g. by 'ton of steam per ton of sugar produced'
- Minimization of waste, measured e.g. by 'percentage of peeling loss during the peeling of potatoes'
- Labour used, measured e.g. by 'number of working hours per ton of finished product'(wikipedia.org)

The processed food can be broadly classified into two categories - Ready to Eat Food (RTE) and Ready to Cook Food (RTC).

- **Ready to Eat Food (RTE)**

  Ready to Eat Food are the processed food which is ready for direct consumption without any further processing. Example: Bread, Biscuits, Potato Chips, Jam etc. These are food products that require no further processing to ensure their safety.

- **Ready To Cook Food (RTC)**

  The processed food which requires further processing before consumption are known as Ready to Cook Food. Example: Snacks, Papad, Masalas, Processed Grains and Cereals etc.

1.3 GLOBAL SCENARIO OF FOOD PROCESSING INDUSTRY

The market size of global processed food was estimated at US $ 4,140.3 billion in 2005 and is expected to reach US$ 5.77 trillion by 2018, growing at a CAGR of 5.02%. Global market for the processed foods follows the economic power of the countries. Developed economies show more inclination towards processed foods due to higher income levels. Rapid urbanization and rising income levels in the developing economies create the demand for processed foods. Low income levels and poor economic growth of the least developed countries create the demand for basic staples and carbohydrates.

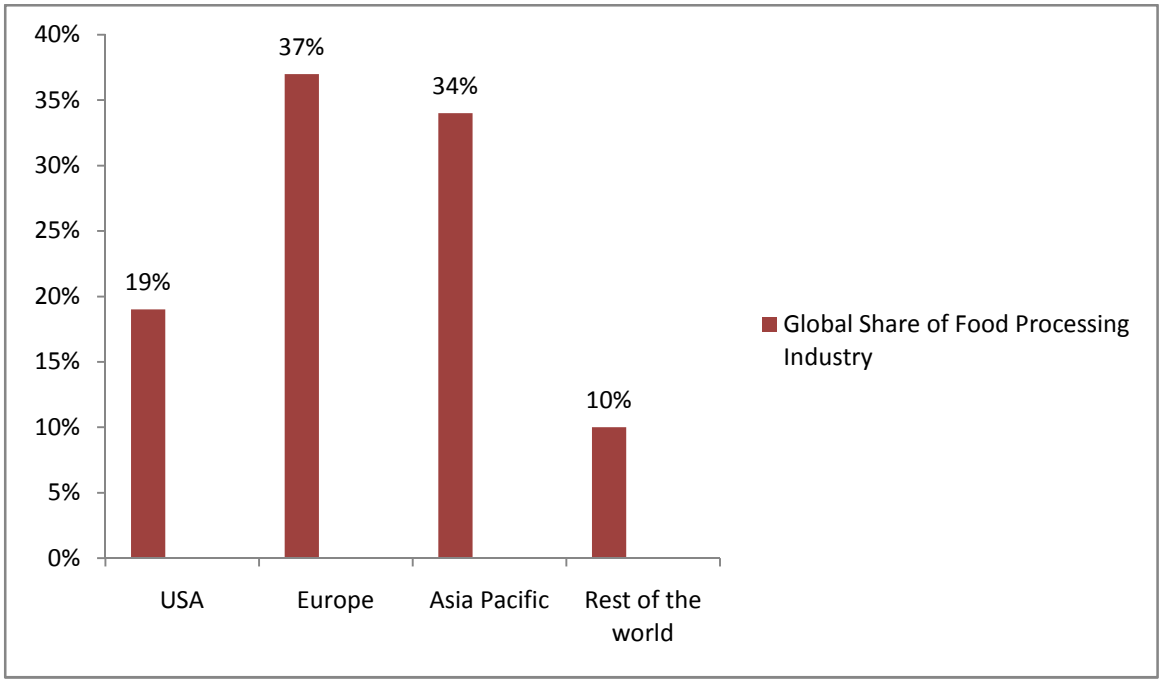
The global market in food processing can be classified into four major segments depending on the level of processing and maturity of the market:

- The Developed Countries like USA, Japan and Australia demand highly organic and functional foods whose preparation involves high technology.
- The Eastern European Countries strives for quality and hygiene factors.
- The Developing countries like India and Latin America focus primarily on snacks, prepared meals and processed meat.
- Carbohydrates constitute the major food in the least developed markets. Most of the least developed countries are net importers of food. (Deloitte. 2009)

Processed food accounts for $3/4^{th}$ of the total food consumption in the world. One of the largest foods processing market in the world is Europe region, though Asia pacific and USA are catching up fast and are likely to grow more rapidly.

Below is the share of food processing industry worldwide, depending on the level of marketing.

Figure 1.01: Global Share of Food Processing Industry (by Region)



Source: Global Food Processing Report, Food and Agriculture Organisation

The global share of food processing industry by (region wise) is shown on the chart with Europe top the position with 37 per cent, followed by Asia pacific (34 per cent) and USA (19 per cent) while the rest of the world shared the remaining 10 per cent. Europe tops the position since the products produced are of international standards and comparatively lower prices than other region. They are also in the higher end of technology with a sharper shift towards convenience and diet foods. The rest of the world including countries in the Sub-Sahara region, Latin America and parts of Asia are at the lower end of competence in food items.

1.4 FOOD PROCESSING INDUSTRY IN INDIA

The food processing industry is one of the largest industries in India. It is known as a 'sunrise industry' having huge potential for uplifting agricultural economy, creation of large manufacturing unit and food chain facilities, and the resultant generation of employment, income along with export earnings.

In the economic development of India the food processing industry has great importance. The Indian government is giving importance and supporting food processing industry as a result of which the industry is growing with good figures.(Manual of Entrepreneurs: Food Processing Industry, 2011).

The food processing activity provides imperative linkage between industry and agriculture. This industry is one of the most important industries in terms of production, consumption, exports and growth scenario. The government has added it in a priority sector with a number of financial reliefs, subsidies and incentives, to promote commercialization and value addition to agricultural produce, for minimizing wastage, generating employment and export growth. (www.niir.org)

Generally, in developing country markets, higher incomes result in diet upgrades, with increased demand for meats, dairy products, and other high value products. In India also sustained economic growth and increasing urbanization are fuelling rapid growth in demand for high value food commodities like fruits, vegetables, milk, meat, eggs and fish (Rao et al 2003, Ali 2004). In the affluent and middle class (estimated to be around 350-375 million), the percentage share of food expenditure vis-à-vis other products has dropped, the total expenditure on foods has increased across all classes. There is an increasing trend of a shift from food security to nutritional security and convenience shopping. Increased mobility,

exposure, increased aspiration and availability of a wide range and products have also contributed to shifts in spending (World of Food India, 2011).

The food processing industry employs around 18% of the country's industrial work force and is ranked fifth in terms of production, consumption, export and expected growth (Merchant, 2008). India also produces a variety of temperate to tropical fruits, vegetables and other food products. Processing of food products plays an important role in the conservation and effective utilization of fruits and vegetables. India's strong agricultural base, variety of climatic zones and accelerating economic growth holds significant potential for food processing industry that provides a strong link between agriculture and consumers.

In recent decades, there have been substantial changes in the patterns of production, consumption, and trade in Indian agriculture. One change is the shift in production and consumption from food grains to high value agricultural commodities such as fruits and vegetables, milk and milk products, meat, eggs, fish and processed food products. Trade in high value products is increasingly displacing exports of traditional commodities such as rice, sugar, tea, coffee, tobacco, etc. Food processing industry involves the commercial movement of food from field to fork.

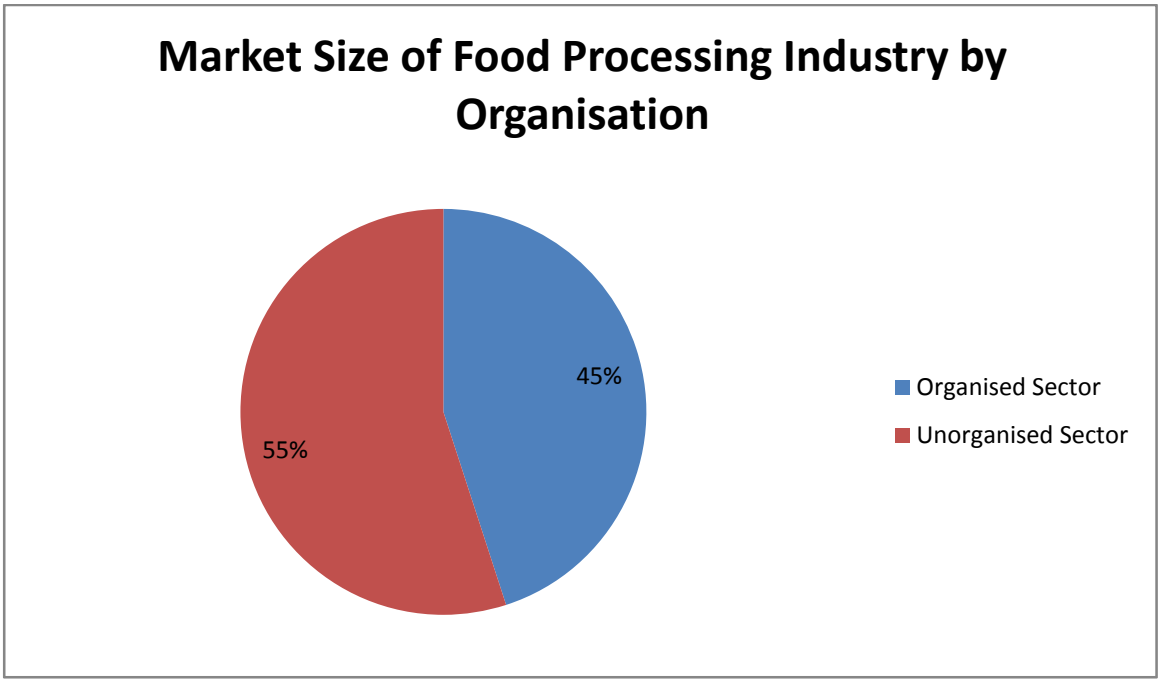
Thus, during the 2000s, the growth rate in value of exports of rice, sugar, marine products, tea ,etc. declined while high value exports(fruits and vegetables, floriculture, meat, processed fruit juices) grew by about 18 percent annually (Sharma and Jain, 2011; Ali, Singh and Muhammad,2007). Given the declining share of traditional commodities in production, consumption and trade, horticulture and other non-traditional, high value, agricultural crops represent an important area of potential income growth in rural areas.

1.4.1 MARKET SIZE OF FOOD PROCESSING INDUSTRY IN INDIA

India is the world's second largest producer of processed food products and is having the biggest consumption category, with spending on food accounting for nearly 21% of India's GDP with a market size of $181 billion, and constitutes the largest portion of the Indian consumer spending more than a 31% share of wallet. Going forward, the Indian domestic food market is growing by 13-15 per cent and is expected to grow by nearly 40% of the market size to reach the size of US$ 530-550 billion by 2020. (FICCI, 2017).

The following chart shows the market size of food processing industry, in terms of organised and unorganised sector.

Figure 1.02: Market size of Food Processing Industry (by Organisation)



Source: Ministry of Food Processing Industry, Techova Analysis

India's food processing industry is dominated by the unorganised sector. About 55% of the output comes from the unorganised sector and 45% from the organised sector. Though the unorganised segment varies across categories but approximately 75 percent of the market is still in this segment. The organised sector is relatively bigger in the secondary processing

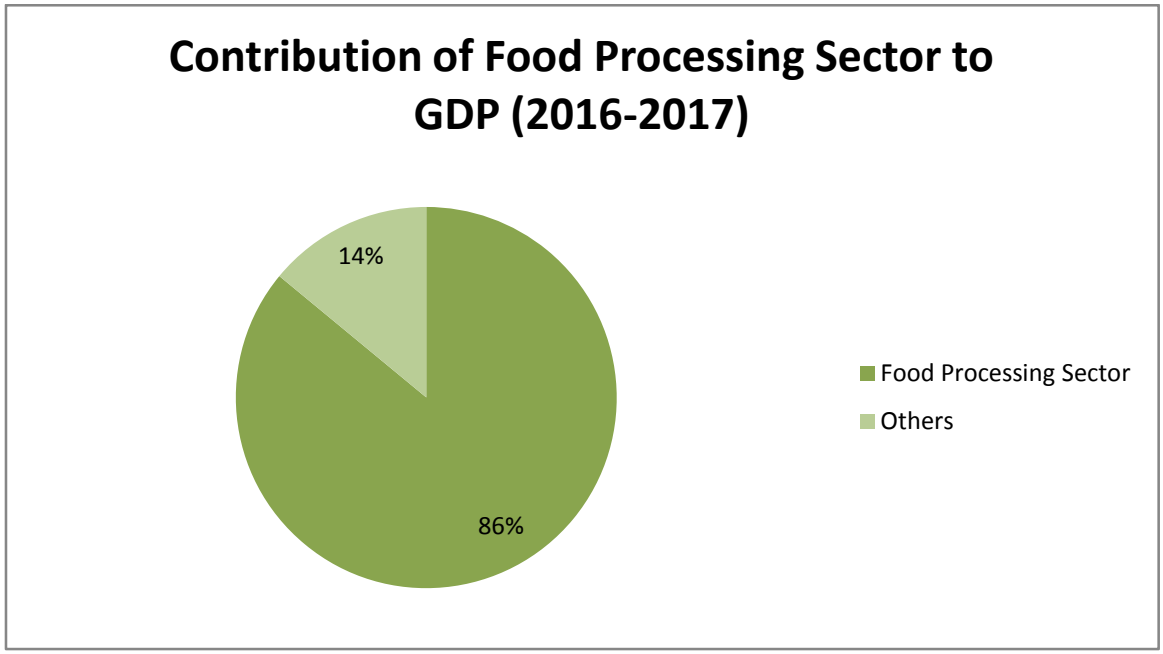
segment than the primary processing segment. Primary food processing is a major industry with a highly fragmented structure of unorganised segment that includes thousands of oil seeds mills, several thousands of traditional bakeries, spice processing units etc. The most common type of food processing units that form the organised sector are flour mills, fish processing units, fruits and vegetables processing units, meat processing units, non-alcoholic and aerated drinks units, sugar units (mills) and modernized rice mills. While India's agricultural production base is quite strong, the food processing industry is still under developed.

The Indian food processing industry accounts for 32 per cent of the country's total food market and contributes around 8.80 and 8.39 per cent of Gross Value Added (GVA) in Manufacturing and Agriculture respectively, 13 per cent of India's exports and 6 per cent of total industrial investment **(**MoFPI Report 2017).The Indian processed food market is currently valued at US$ 1.3 billion and is growing at a Compound Annual Growth Rate (CAGR) of 20 per cent.

The Agriculture sector has 26% contribution towards the GDP of the country. The growth potential of India's food industry is quite significant in terms of its value added. India is the world's third largest food producer with the potential of becoming the number one during the next couple of years (Behera 2009).Adding value to the farm products and other material ingredients is the way in which the food processing industries contribute to state and national economies. The sum of value added of each company is the value added of an industry; the sum of the value added of all industries approximates the national economy's Gross Domestic Product (GDP). National Accounts Statistics is also using the NIC groups to report the contribution of food processing industry to GDP for each group.

The following pie chart shows the contribution of food processing industry in the GDP of India.

Figure 1.03: Contribution of Food Processing Sector to India's GDP (2016-2017)



Source: Ministry of Food Processing Industry, Tech Sci Research, December 2017.

During recent years, food processing industry has contributed around 1.5% to Indian GDP. It contributed 9 percent to India's GDP during 2005-2006. The contribution has rapidly increased in the financial year 2016 - 2017 to 86 per cent, while other industry constitutes only 14 per cent. At the same time, in developing countries like India, the share of the processed food products is low compared to that in the developed countries markets and non-processed food account for nearly 50% of the share.

1.4.2 SEGMENTS OF FOOD PROCESSING INDUSTRY IN INDIA

Food processing is a large sector in India that covers activities such as agriculture, horticulture, plantation, animal husbandry and fisheries. It also includes other industries that use agricultural inputs for manufacturing of edible products. The Ministry of Food Processing, Government of India divides the food processing industry into six segments: Dairy, Fruits & vegetable processing, Grain processing, Meat & Poultry process, Fisheries and Consumer foods which includes packaged foods, Beverages and Packaged drinking water. In the following table various segments of India's food processing industry and examples of products produced in these sectors are presented.

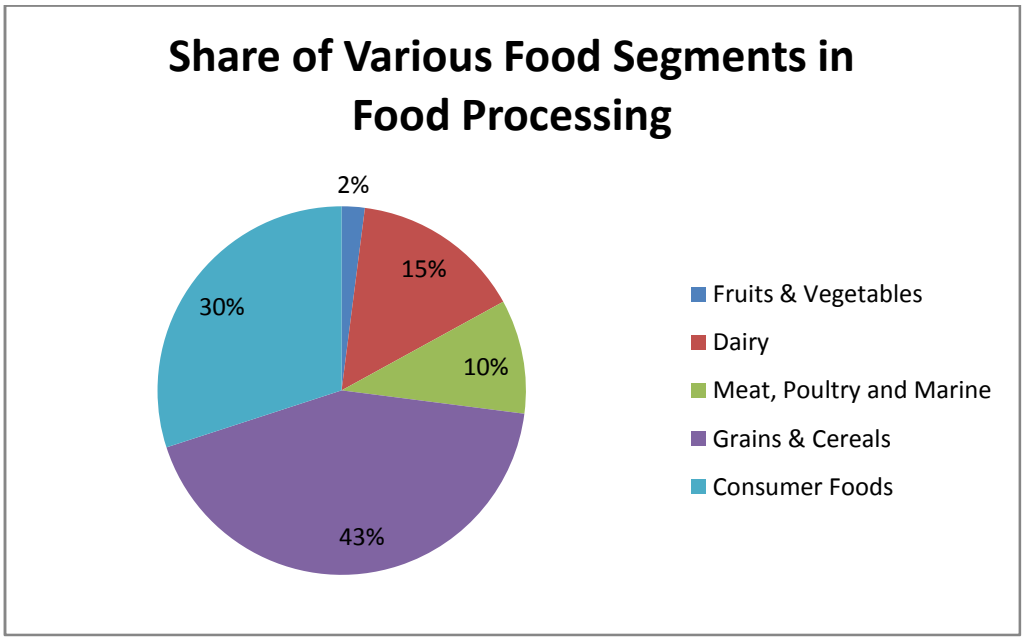
Table 1: Segments of Food Processing Industry and some of its products

Sectors	**Product**
Dairy	Whole milk powder, skimmed milk powder, condensed milk, ice cream, butter, ghee, cheese etc
Fruits& Vegetables	Beverages, juices, concentrates, pulps, slices, frozen & dehydrated products, potato wafers/chips etc
Grains& Cereals	Flour, bakeries, starch glucose, cornflakes, malted foods, vermicelli, beer and malt extracts, grains based alcohol
Meat, Poultry & Marine	Frozen, canned and packed –mainly in fresh form or egg powder
Consumer Foods	Snack food, namkeens, ready to eat food, alcoholic and non alcoholic beverages

Source: Ministry of Food Processing Industries, Annual Report 2017.

While India has an abundant supply of food, the food processing industry is still emerging; only 2 percent of fruit and vegetables; and 15 per cent of dairy products are processed. Meat, poultry and marine products comprises of 10 per cent, Grains and Cereals 43 per cent and Consumer foods including beverages constitute 30 per cent. This is shown in the pie chart below;

Figure1.04 : Share of various Food Segments in Food Processing Sector



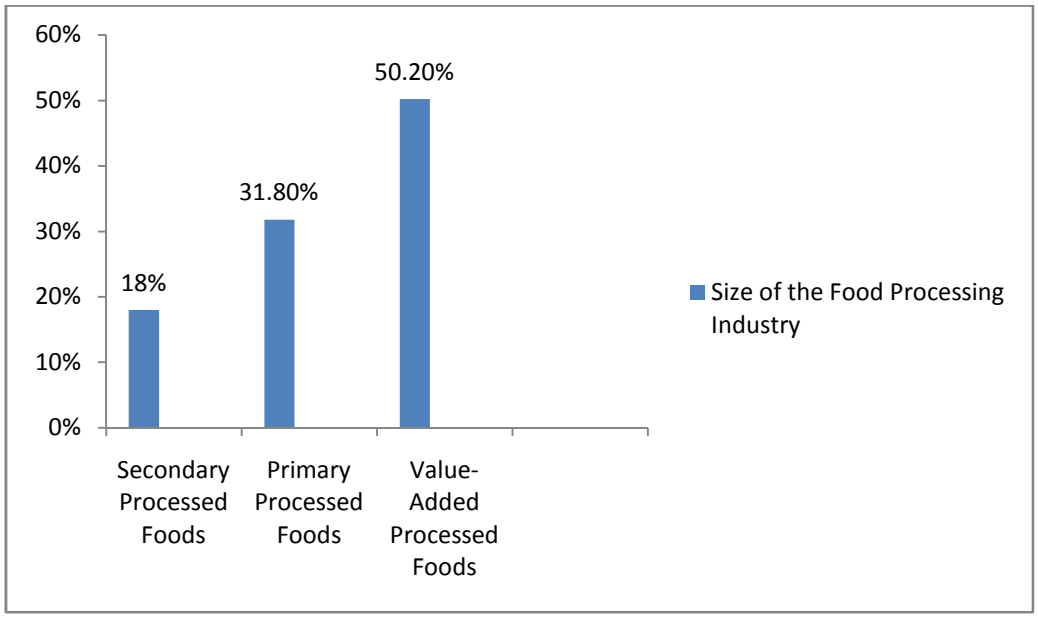
Source: Ministry of Food Processing Industries, Annual Report 2017.

The food processing industry grew at an estimated rate of 9.12 per cent and had share of 6 percent in the total industrial production during the period 2002 to 2007. Value addition of food products is expected to increase from 8 percent to 35 per cent by the end of 2025. Fruits & vegetable processing, which is around 2 per cent of total production is expected to increase to 25 per cent by 2025. In terms of various segments, the highest share is Grains and Cereals as India is the second largest producer of food grains globally which makes the sector large compared to other segments, consumer foods sector is also an emerging industry which is expected to grow by double in the near future.

1.4.3 SIZE OF THE FOOD PROCESSING INDUSTRY

The food processing industry consists of primary processed foods, secondary and value added processed foods. The size of value-added processed foods is the largest while secondary processed foods constitute the lowest rank. This is shown on the line graph below;

Figure1.05: Size of the Food Processing Industry in India



Source: Compiled from MoFPI Annual Report

According to the report of Ministry of Food Processing industries, the total size of the Indian food processing industry was around US $ 220 billion in 2005. Of that, primary processed food was worth US $70 billion (31.80 per cent) and the secondary processed food was US $40 billion (18 per cent). The remaining share of US $ 110 billion (50.20 per cent) was constituted by value- added processed foods i.e. more than half of the food processing segment is accounted by value- added processed foods. This may be due to the fact that this food product enhances the value to the producers thereby providing them more income from their products.

1.4.4 INVESTMENT IN FOOD PROCESSING INDUSTRY

According to the data provided by the Department of Industrial Policies and Promotion (DIPP), the food processing sector in India has received around US$ 7.54 billion worth of Foreign Direct Investment (FDI) during the period April 2000-March 2017. The Confederation of Indian Industry (CII) estimates that the food processing sectors have the potential to attract as much as US$ 33 billion of investment over the next 10 years and also to generate employment of nine million person-days.

Some of the major investments in this sector are:

- Global e-commerce giant, Amazon is planning to enter the Indian food retailing sector by investing US$ 515 million in the next five years.
- Parle Agro Pvt Ltd is launching Frooti Fizz, a succession of the original Mango Frooti, which will be retailed across 1.2 million outlets in the country as it targets increasing its annual revenue from Rs 2800 crore (US$ 0.42 billion) to Rs 5000 crore (US$ 0.75 billion) by 2018.
- US-based food company Cargill Inc, aims to double its branded consumer business in India by 2020, to reach about 800,000 outlets and increase market share to become national leader in the sunflower oil category which will help the company be among the top three leading brands in India.
- Danone SA plans to focus on nutrition business in India, its fastest growing market in South Asia, by launching 10 new products in 2018, and aiming to double its revenue in India by 2020.
- Mad over Donuts (MoD) expand its operations in India by opening nine new MOD stores in March 2017. (Ministry of Food Processing Industries, Government of India).

It can be assessed that India becomes the leading supplier of food items around the globe. Reports of the government indicated that there are more than 30 companies listed in food processing sector. However, the major companies are Dabur India, Gitz, Godrej industries, Haldiram, MTR foods, Parle Agro, HUL, Britannia Industries, ITC, Nestle, Pepsi and Cadbury India. There is still a lot of scope for products related to meat, poultry, fisheries, milk products, beverages, grain processing etc.

The following table highlight the investment limit under manufacturing sector with respect to micro, small and medium enterprises in India.

Table 2: Investment Limit in manufacturing sector

Enterprises	Investment
Micro	Does not exceed Rs 25 lakhs
Small	More than Rs 25 lakhs but not exceed Rs 5 crores
Medium	More than Rs 5 crores but not exceed Rs 10 crores

Source: Micro, Small and Medium Enterprises Development (MSMED), Act 2006

The above table shows the investment limit circulated by the Government of India into micro, small and medium enterprises for investment in machinery and other equipments. For micro enterprises, the investment should not exceed Rs 25 Lakhs, while small sector enterprises can invest more than 25 lakhs but should not exceed Rs 5 crores. Medium enterprises can invest more than Rs 5 crores but should not exceed Rs 10 crores.

1.4.5 CONSUMPTION PATTERN OF PROCESSED FOOD PRODUCTS

Consumer Food is another major sector of food processing industry which is showing an increasing trend in the production as well as consumption in domestic and international markets. The main items produced in this industry are Breads, Cakes, Biscuits, Namkeens, Pastries, Patties, Rusk, Buns, Rolls, Noodles, Corn flakes, and Rice flakes, ready to eat and ready to cook products, etc. Bread and biscuits constitute the largest segment of consumer foods. Their production is about 4 million tons per year. Manufacturing of bread is reserved for SSI sector. The share of organised and unorganised sectors in the production of bread is 40 per cent and 60 per cent respectively. At the same time the ratio is 80: 20 for two sectors in the production of biscuits. Presently there are approximately 70,000 bakeries, 20,000 traditional food units and several pasta food units working in India. Indian Biscuits Industry holds the second position in the world after USA being the first, having a turnover of around Rs. 3,000 crore. The Indian food processing industry is fast emerging as most of the major cities are highly residential areas comprising of large workplace clusters.

The study conducted by the Ministry of Food Processing Industry, Research and Markets Analysis regarding the consumption pattern of processed food products, by age group, in major cities; Delhi, Mumbai, Kolkata and Bengaluru are shown below:

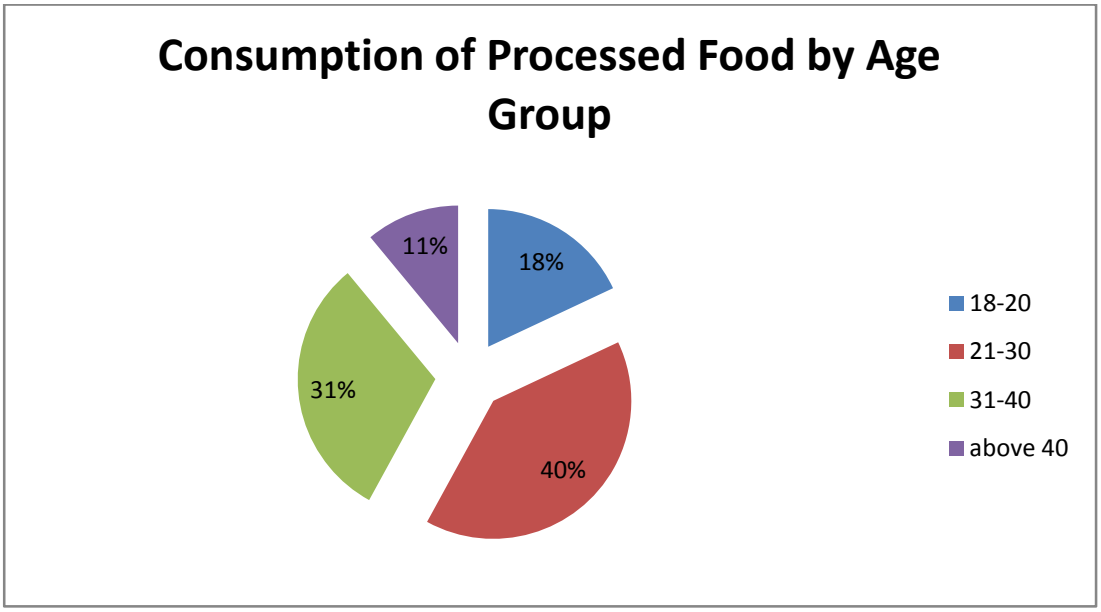
Table 3: Age Group Profile of the Consumers

Age Group	Percentage of Consumers
18 -20	18%
21-30	40%
31-40	31%
Above 40	11%

Source: IBEF, Research and Markets 2015-2017

The above table highlight the age group profile of the consumers of processed foods in selected metropolitan cities in India, ranging between the ages of 18 to above 40 years, during 2015-2017. The pie-chart below represents the consumption pattern of processed foods by age group;

Figure 1.06: Consumption of Processed Foods by Age Group



Source: IBEF, Research and Markets 2015-2018

From the pie-chart, it reveals that among the age wise distribution of consumption pattern of different processed foods products in four major cities; Delhi, Mumbai, Kolkata and Bengaluru, the age group of 21-30 years were the largest consumer, constitute 40 per cent of the total, while the least consumers are the age group of above 40 years at only 11 per cent. This shows that consuming of processed food products is the largest among the youth. This may be due to the fact that there were many ingredients in processed foods that make people especially young age alluring them by their cheap price and easy to consume. Advertising factor can also be one of the main reasons since majority of the youth tends to convinced through sales promotion in electronic and print media.

1.4.6. FINANCIAL ASSISTANCE TO PROCESSED FOODS SECTOR

Financial assistance is one of the most important factors that help the food processing sector becoming financially independent to cover their expenses on production. The following table shows the financial assistance released to processed foods sector during 2007 to 2011.

Table 4: Financial Assistance to Processed Foods Sector

Financial Assistance to Processed Foods Sector		
Year	**No of Sectors**	**Assistance released(Rs in Crore)**
2007-08	**156**	**3205.00**
2008-09	**112**	**1837.00**
2009-10	**145**	**2247.17**
2010-11	**111**	**1967.42**

Source: Ministry of Food Processing Industries, Annual report 2010-11.

As against the overall growth trends of finance released to and production of food processing institutions, consumer food sector has shown declining trends. A decrease in financial assistance as well as the number of sectors was witnessed. It was recorded that the assistance released by the Government sharply decreased from Rs. 3205/- Crore in 2007-08 to Rs. 1967.42/- Crore in 2010-11. The number of sectors also decrease to a considerable extend. This is because of relatively low profitability and high risk of wastages and loss due to perishable nature of consumer food item.

1.5. ROLE OF THE MINISTRY OF FOOD PROCESSING INDUSTRIES

The Government of India has been instrumental in the growth and development of the food processing industry. The Ministry of Food Processing Industries (MOFPI) is responsible for formulation and administration of the rules and regulations and laws relating to food processing in India. The Ministry was set up in the year 1988, with the main objectives to develop a strong and vibrant food processing industry, to create increased employment in rural sector and enable farmers to reap the benefits of modern technology and to create a surplus for exports and stimulating demand for processed food. It has approved proposals for joint ventures (JV), foreign collaborations, industrial licenses, and 100 per cent export oriented units.

For achieving its objectives, the Ministry, apart from various Ministries of the Government of India like Agriculture, Industry, Commerce and Health, interacts with various State Governments through their Ministries / Ministry of Food Processing Industries or nominated nodal agencies which are responsible for implementing programmes relating to this sector in the concerned State Governments.

The Ministry is also concerned with the formulation & implementation of policies and plans for all the industries under its domain within the overall national priorities and objectives. Its main focus areas include—development of infrastructure, technological upgradation, development of backward linkages, enforcement of quality standards and expanding domestic as well as export markets for processed food products.

Some of the major initiatives taken by the Government of India to improve the food processing sector in India are as follows:

- The Government of India aims to boost growth in the food processing sector by leveraging reforms such as 100 per cent foreign direct investment (FDI) in marketing

of food products and various incentives at central and state government level along with a strong focus on supply chain infrastructure.

- In Union Budget 2017-18, the Government of India has set up a dairy processing fund worth Rs 8,000 crore (US$ 1.2 billion).
- The Food Safety and Standards Authority of India (FSSAI) plans to invest around Rs 482 crore (US$ 72.3 million) to strengthen the food testing infrastructure in India, by upgrading 59 existing food testing laboratories and setting up 62 new mobile testing laboratory across the country.
- The Ministry of Food Processing Industries announced a scheme for Human Resource Development (HRD) in the food processing sector. The HRD scheme is being implemented through State Governments under the National Mission on Food Processing. The scheme has the following four components:

    - Creation of infrastructure facilities for degree/diploma courses in food processing sector
    - Entrepreneurship Development Programme (EDP)
    - Food Processing Training Centres (FPTC)
    - Training at recognised institutions at State/National level

Earlier the regulatory responsibilities of MoFPI were to implement Fruit Products Order (FPO); however, by the enactment of Food Safety and Standards Act, 2006, these regulatory responsibilities are transferred to Food Safety Authority of India, New Delhi which is under control of the Ministry of Health and Family Welfare.

The industry looked after by the Ministry are:

- Fruits and vegetable processing industry
- Food grain milling industry
- Dairy products
- Processing of poultry and eggs, meat and meat products
- Fish processing
- Bread, oilseeds, meals (edible), breakfast foods, malt extract, protein isolate, high protein food, weaning food and extrude/other ready to eat food products.
- Beer, including non-alcoholic beer
- Alcoholic drinks from non-molasses base
- Aerated waters / soft drinks and other processed foods
- Specialized packaging for food processing industries
- Technical assistance and advice to food processing industry

Going forward, the adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM) including ISO 9000, ISO 22000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) by the food processing industry offers several benefits. It would enable adherence to stringent quality and hygiene norms and thereby protect consumer health, prepare the industry to face global competition, enhance product acceptance by overseas buyers and keep the industry technologically abreast of international best practices.

1.6 STATEMENT OF THE PROBLEM

The absence of information, lack of awareness about employment opportunities,lack of skills and training, and limited knowledge about agro-processing industry formed a major barrier for local entrepreneurs in setting up food processing industry. Thus this sector require priority due to their advantage over other sectors of industries as they provide high potential for employment as well as generating income thereby providing livelihood and improving the economic status of the people. It will also increase the scope for domestic as well as global market which in turn will create demand based industries and paves a way of balancing agriculture and industrial development of the state.

1.7 SIGNIFICANCE OF STUDY

Food processing industry can be regarded as one of the promising sectors which offers unique opportunities in production and export of processed food. If there are good food processing industries in the country, raw materials such as grains, fruits and vegetables, meat etc can be converted into food for domestic and foreign consumption. Huge prospects are emerging in the food processing segments and availability of skilled manpower has been identified as one of the major challenges, which creates a lot of opportunities for unemployed youth to work in the food processing sector. There lies a huge gap between available and required skill in the country. Capacity building will create talent pool. Innovation needs to be linked to market need. Industry interface is required for scaling up the technologies, promoting entrepreneurship and skill development in food processing sector in the country. Though food processing industry is still at a developing stage, it can offer exponential career opportunities and rising income thereby promoting standard of living for the development of the country.

1.8 AREA OF THE STUDY

Aizawl is the capital of the state of Mizoram. According to 2011 census, it has a population of 293,416. The sex-ratio is 1025 females per 1000 males. It is the largest and populous city in the state with a literacy rate of 98.36%.(censusindia2011).It is divided into 18 wards of Aizawl Municipal Corporation (AMC) with 83 localities/ local councils according to the report of State Election Commission 2012.

It is the centre for trade and business, as most of the business activities within the State are carried out in Aizawl city. Thus it can be said that a study on the performance of food processing industry in Aizawl city, to a large extent, will be representative of the performance of the district as well as the State.

1.9 OBJECTIVES OF THE STUDY

1. To examine socio-economic status of the promoters in food processing industry

2. To study the basic principles of food processing industry

3. To examine the scope and trends of product selection by food processing units.

4. To study the modus operandi of production and marketing.

5. To examine the extent of employment generation by food processing units.

1.10 HYPOTHESIS

Employment generation is significantly related to the growth of food processing industries

1.11 METHODOLOGY

The system of the study relies on both primary and secondary data. Primary data is collected through a random sample of individuals/family/group undertaking food processing business within Aizawl city. Aizawl is purposively selected for the sample since it is the most populous city in Mizoram and the majority of food processing business has been undertaken in the area.

Even though the sample has been randomly selected, it was done in such a way that food processing industries in different localities within Aizawl city has been covered as much as possible in order to maintain the vast diversification of the industries. The samples were selected based on the researcher's frequent visit to several grocery shops, departmental stores and petty shops, hawkers etc to lists down the different processed food products sold to these stores. Based on their address and phone number listed on the label, the promoters were contacted and give interviews as per their convenience. Even though there were several big players undertaking different food processing business, the samples selected for the study were small in terms of production and operations, while majority of them engaged in unorganised segment and a few registered under small scale industries.

For primary data unstructured interview method was used to elicit information regarding the socio-economic profile of the promoters along with their production rate, marketing techniques, annual sales/ income and other issues related to food processing industry. The questions mainly comprises of the components like name and type of the industry, year of establishment, educational qualification, access to registration and food safety standards, access to loans/ financial assistance, daily/ weekly production, types and cost of raw materials, employment status, value of machineries and finished product, daily/ monthly sales

etc. Each and every detail of the answers were note down, and based on their responses the suitable indicators for performance of different industries were obtained.

To analyse the performances of different food processing industry, five types of value-added processed foods industries were selected viz; Pickle industries, Chips industries, Bakeries, Noodles industries and Juice industries.

The sample sizes of 5 different food processing industries were selected randomly; under which 4 units each were selected from each industry, thus a total of 20 industries was selected for the study. The performances of each industry were then analysed with descriptive statistical tools like mean, median and percentages. The hypothesis was tested using co-relation method.

To substantiate the information, pictorial depictions like tables, pie-chart, simple bar diagrams and line diagrams were adopted.

The selected industries along with their locations are given below:

Pickle industries: CC Pickle- Chanmari, Chhawkhlei Pickle- Tuikual, KLT Fruit & Food Processing- Edenthar, and MS Pickle- Vaivakawn.

Chips industries: H.E Food processing industry- Mission Vengthlang, Jemim Chips- Chhinga Veng, Joyce Manufacturing -Model Veng and LK Special Chana- Bethlehem Veng.

Bakeries: KC Bakery -Tuithiang Veng, Si Co's Donut -Durtlang, LZ Cakery -Chaltlang and Faith Homemade- Ramhlun North.

Noodles industries: RP Chow -Bethlehem Vengthlang, ST Chow -Ramhlun Vengthar, MC Chow -Zotlang and LM Noodles –Zemabawk.

Juice industries: Rin Rin Juice Parlour- Chanmari, LR Nimbu -Laipuitlang, ZN Juice-Kulikawn and Tetei Fresh Nimbu -Tuikhuahtlang.

Secondary data was obtained from Journals, Economic Survey of Mizoram, Statistical Handbook of Mizoram, and report of the Ministry of Food Processing Industry, India, Food and Agriculture Organisation, report of Indian Brand Equity Foundation, Report of District Industries Centre, Aizawl, Department of Khadi & Village Industries, Directorate of Commerce and Industry, Mizoram etc. It also includes several research articles, thesis of various scholars and unpublished works to supplement the data.

SCHEME OF CHAPTERIZATION

Chapter I: Introduction.

Chapter II: Review of Literature

Chapter III: Food Processing Industry in Mizoram: An Overview.

Chapter IV: Performance Analysis of Food Processing Industry in Aizawl District

Chapter V: Findings, Suggestions and Conclusion.

Bibliography

Appendix

CHAPTER II REVIEW OF LITERATURE

A summary of findings in the area of food processing which were undertaken by individual researchers, group of researchers, organizations etc are briefly presented as follows:

Sceme (1992) in his study entitled, 'A Study of National Small Industries Corporation' in the states of Mysore and Andhra Pradesh adopted primary data collected from small industries extension training institute, Hyderabad. After analysing the information collected, the study observed that in the case of larger towns, the assistance per unit was much more and gradually diminishes as the town size decreased. The study also observed that state -of- the-art technology and machines were used more in bigger towns than in smaller towns.

Desai (1992) in his study on 'Development of Food Processing Industries in Andhra Pradesh' analysed development and financial performance of food processing, with special reference to working capital management of selected food processing industries during 1980-1987. The main objectives were to prioritise various basic food processing industries for their development and a policy implication, the samples selected were sugarcane processing, milk processing, food grains milling and edible oilseeds. Secondary data was adopted from e survey data of the Annual survey of Industries (ASI), Reserve Bank of India (RBI) and primary data from micro level case studies on selected co-operatives societies. Simple ranking method as well as averages (mean) was used to analyse the data. The study observed that food grains processing was the most priority sector in terms of development and financial performance and suggest that location of these industries be encouraged in rural areas where basic raw materials, labour and incremental demand emerge. At the same time forward as well as backward linkages by institutional system for agricultural development were essential for further sustainable development in the sector.

Sinha(1993) in his study on 'Small Scale Fruits and Vegetable Processing: Dynamics and Development' focuses on the performance of food processing in India during 1975-1985 by analysing the constraints and opportunities, prospects for growth and assess the future of the sector. All the data's were collected through secondary information. The study found that among the many sub sectors of food processing, the fruits and vegetables processing industry grow at 14 per cent per annum, and provides nearly 60 per cent of the total exports of processed food in values terms and it was the only sector in which the processed product competes with its own raw materials for consumer demand. With regard to prospects for growth, he suggested three major developments i.e. strong links between industry and agriculture, recognition by the government of the potential of this industries and the convergence between the need of the consumer and the product mix of the industry. At the same time, an effort on intermediate products on part of the larger units in the industry appears to be essential for the rapid growth of the sector.

Pandit (1994)in his article titled, 'Trade Policies and their Impact on Small Enterprises in India', stated that the investment structure of the small-scale enterprises in India as per the second All India Industrial Census (1987-88) had shown that about 95 per cent of these enterprises was tiny/micro units having investment of less than Rs.0.5 million. Due to low capital in this segment, the technology used was obsolete and of traditional type that affected both productivity and quality of production and hence their competitiveness. The tiny units had been catering to the requirements of the lower and middle income level customers predominantly in the rural and semi-urban areas. The study observed that in India only five per cent of the small-scale enterprises had higher level of capital investment and acquired comparatively better level of technology.

Bhattacharya (1994) in his research on 'Entrepreneur, Banker and Small Scale Industries' adopted secondary sources by studying the problems faced by the Small-scale Entrepreneurs located in Howrah and Calcutta of West Bengal. The study found out that all the units were Bank assisted units and the need for proportionate increase in capital was inversely related to the size of the small firms. It was also observed that the smaller the firm, the lesser as its chance to command finance from banks in the absence of any track record of past years performance. The study also reveals that most of the bank managers felt reluctant in sanctioning the required amount of loan because they were unable to judge the capability of prospective borrowers on the basis of projections only.

Thilaka (1998) in her study on 'A Study of Financing of Select Small-Scale Industries by Commercial Banks in Tamil Nadu' stated that one of the important problems of the small-scale industries was bank finance. Restriction on term on loan facilities small-scale industries acted as a stumbling block in the promotion of SSIs units. She stated that commercial banks provided only 75 per cent of the financial needs of the small-scale industrial units. Further the borrowers complained that they had to visit the bank more than ten times for getting their loans, thus the study observed that majority of the borrowers feel their discontentment regarding the bank payment..

Machini (1999) in his research on the 'Role of Agro-based industries in Rural Development: A Case study of Nyansiongo Tea Factory in Borabu Division, Nyamira District,Kenya' set an objective to examine the role of Tea Factory in the development of the country. He examined the backward and forward linkages of the tea industry within the division, the expenditure patterns of tea farmers and how they contribute to development and also the problems facing the industry and suggested on how the industry could be planned to contribute more to the development of the division and rural areas. Data was collected from tea farmers, factory

workers, businessmen, administrators and some key respondents. From the study a number of results emerged that there was a need to improve the production of tea at the farm level by encouraging the tea farmers to plant more tea, improve the efficiency and timely delivery of green leaf tea and to the factory through an improvement of the roads, improving market prices on manufactured tea through workers' efficiency. He concluded by suggesting that all these factors cannot be achieved unless there was a well organized management system to overlook all the activities.

Sharma (1999) in his research on 'Small Entrepreneurial Development in Some Asian Countries: A Comparative Study', adopted secondary sources of information from the data and report of the Ministry of Small Scale Enterprises, Government of India. The study reveals that, in India, the policy of the State or Union territories had hampered the development of entrepreneurship. For instance; while the policies of Meghalaya and Nagaland did not permit outsiders to register their units and as such the States were deprived of external resources for industrial development. At the same time in the country like Korea, the government policy tended to encourage the upper and smaller enterprise, ignoring very small business.

Khan (2004) in his article entitled 'Labour Policies of Small-Scale Industries in Maharashtra' highlight the urgent need to review the labour provisions for small enterprises. The issues of labour laws assumed significance for the small industry. The multiplicity of labour act and legislation enacted had neither proved useful to the workers nor to the industry. He suggested that the Central Government should come out with a single comprehensive labour act for the small sector as a model and the State Government may be asked to implement the same in the place of the existing labour legislation. He further stated that the technology development and modernization fund must be augmented to provide financial assistance to quality projects aimed at strengthening export capabilities of small units.

Murthy (2005) in his study entitled 'Institutional Finance for the Development of the SSI in Karnataka' stated that availability of institutional finance has not met the demand from the SSIs sector. The educational background of the owner had little impact on the running of the unit. Proprietary and partnership firms were found to be more prompt and regular in repayment of loans than limited companies. The study suggests for setting up of an SSI mutual fund, more specialized SSIs branches and modification of Narasimham Committee report to suit the SSIs sector.

Thillainayagam(2006)in his article on 'Small-Scale Industries and World Trade Organization', observed that large corporations could not do production and marketing in an efficient way, but could concentrate on international marketing of products only. They may develop horizontal networking through subordinate capabilities and the small as well as medium units could concentrate on production without worrying about marketing of their products. Wherever feasible, large international companies could function as assembling units, small and medium enterprises could produce intermediate products or ancillaries to the principal assembling units. He suggested that there could be technological tie up between the principal units and ancillary units. So that this joint venture production would solve the equity problem of small-scale units.

Ministry of Food Processing Industries (2008) in their article on 'Value Chain in Food Processing Industry' studied the problems of farm inputs and food retail in India through secondary data obtained from survey conducted by Federation of Indian Chambers of Commerce and Industry(FICCI). After analysing the information it was revealed that the absence of proper cold storage facilities was one of the main problems in value chain which leads to wastage of produce, and amounts as high as 35%. This problem has been marked as number one challenge in food processing industry which includes the trade and distribution

facilities like transportation, shifting of produce from one place to another, processing, wholesale and trading, exports, retail and services etc, which requires the basic functional distribution of human resource across segments in food processing industry.

Sarkar (2008)in his study on 'Technological Capability of Food Processing Industry' highlights the importance of science and technology capability of food processing industries. He collected secondary sources through journals, research articles, CSIR articles etc and found out that a well developed technology infrastructure was one of the main incentives in food processing industry. This involves operations like cleaning, grading, drying, storage, transport, marketing etc. For the successful operation of Agro Processing Centres, the production to facilitate backward linkage with farmers, best quality raw food materials for processing and minimization of value addition, check migration of rural people to urban areas for jobs and thereby reducing pressure on public utilities in urban areas were necessary in order to help in reducing rural urban disparity and ensuring household food and nutritional security for all at an affordable cost. The study suggests that political will and commitment was required to implement the program to shape a new India where everyone would be healthy and happy.

Neha(2009) in her research on 'Study on Employment Generation of Food Processing Industry in India' adopted secondary sources through annual report of MOFPI, IBEF etc states that food processing industry employs 13 million people directly and 35 million people indirectly. She found out that the food processing sector was highly unorganized with 82 per cent of the workforce employed in food processing industry and the maximum working population was in DME (Directory Establishment). Another striking feature was that in rural areas OAME (Own account manufacturing enterprises) sector was much bigger than the NDME (Non-directory manufacturing establishment) sector in employment generation, i.e.

more people go for their own enterprises in rural areas, and in urban areas the OAME sector was almost negligible. There has been a fall in the growth rate of employment in registered food processing industry units in 2007-08, probably because it was a year when there was a global slowdown in economic activity. In division of employment state wise it came out that Andhra Pradesh has the biggest share of persons employed in food processing industry, since it is the biggest centre of food processing sector in India.

National Skill Development Corporation(2010) in their study on 'Distribution of Human Resources in Food Processing Industry' in three major food processing states; Andhra Pradesh, Gujarat and Uttar Pradesh through primary data by collecting the educational profile of the employees involved in food processing industry in selected areas of these three states. After analysing the data, they found out that the maximum percentage of workers has low level of education i.e. 10^{th} standard or below level occupies 80% of the employees, and therefore their skill level was low. Low level of skills highlights a very dark picture since workers cannot contribute from their side in the development of the industry, thus leading to stagnation of the industry. At the same time only 0.5-1% employees hold a post-graduates degree and the remaining employees are certificate/diploma holders, graduate, and food technologists. This clearly shows that there is a requirement for skilled human resource in the food processing sector in order to fill demand-supply gap in both organised and unorganised sector for the development of the industry.

Sharma (2010) in his research on 'Farmers Development Program in the State of Punjab' study different programs created by government in the state. He observes that several awareness programmes have been created in the areas of education, skills training, generating local employment and women empowerment, as a result there was a sudden surge in demand for processed food of fruits and vegetables but made a very slow progress. During the year

2000-2009, 206 new licenses have been issued for the fruit and vegetable processing industries, marking only 50% rise in the number of industries. These facts proved that there was higher preference for fresh fruit and vegetables in this region. He suggest that the presence of FDI will definitely act as a boon for the investors, farmers and everyone associated with food processing sector, but there was a strong need to regulate the modern retail, the laws should be properly implemented such that small retailers are safeguarded, the traditional retailers should be upgraded and wholesale markets should be upgraded to serve retailers and farmers better. He concluded by stating that the policy of the government should work on the line of "Competitiveness with inclusiveness".

Pati(2011) in his studies on 'Problems of Supply Chain Management of Fruits and Vegetables in India' adopted secondary sources through the National Horticulture Board. After analysing the information he found out that there was a colossal waste during the post-harvest storage and handling due to improper bagging without crating, lack of temperature controlled vehicles, no cold chain facilities for preserving the produce, coupled with significant processing of the agricultural produce resulting in enormous losses to the nation. Given the characteristics of fruits and vegetables such as perishability, seasonality, bulkiness and delicate nature of the products coupled with inadequate storage and transport facilities, he recommend that the supply chain management has to be improved in all the stages of the supply by adopting global best practices in storage, packaging, handling, transportation, value added service etc and also by disintermediation and participation of organized players i.e., modern supply chain with a view to benefit both farmers as well as ultimate consumers.

Acharya(2012) in his case study on 'Pepsi-Co India Potato Farming Program in India' adopted a sample of 12,000 farmers across six states in India. From his analysis of data he observed that the company provide farmers with superior seeds, agricultural inputs and supply of agricultural implements free of charge. They also arrange weather insurance for farmers through tie-up with ICICI Lombard and they have an assured buy-back mechanism at a prefixed rate with farmers. He found out that, in 2010, contract farmers across these states registered a phenomenal 100% growth in crop output, creating a huge increase in farm income. The remarkable growth has resulted in farmers receiving a profit between Rs.20, 000- 40,000 per acre, as compared to Rs.10000-20,000 per acre in 2009. This shows that the company have a retention ratio of over 90%, which reveals the depth and success of their partnership with farmers.

NABARD (2012) in their study on 'Problems of Village Level Food Processing Industry in India' takes special consideration on food laws governing food processing industry. According to their study since village level agro-industry does not come within the purview of any single Ministry, only a fraction were registered through the village Panchayats. They highlight that lack of infrastructural facilities like electricity connection, power cut, transportation facilities, cold storage etc, hinders the growth of agro-industries. This need to be upgraded substantially for economic viability through widespread development of rural infrastructure, and the study found out that lack of skilled and trained manpower was a big issue. The shortage of skilled, semi-skilled and unskilled workers has emerged as a critical factor impacting the competitiveness of Indian food industry. Thus the study suggest that food processing industry has many challenges, ranging from infrastructure to human resources and to technological backwardness, and with the growing demand of processed food there was a need to address these problems and concerning issues on priority basis.

Surendra(2012) conducted a study on 'The Food Processing Industry in India: Challenges and Opportunities' with a broad objectives of examining trends and status of the food processing industry, identifies and discusses constraints slowing down its growth. Based on empirical evidences collected from different government reports, annual report of the Ministry of Food Processing, report of National Horticulture Board etc he found out that the country's processing sector was small and processing of food to consumable standards in India has reached only 10%. He also observed that the major constraints for the growth of the Indian food processing industry include the absence of adequate infrastructure, particularly rural road connectivity, lack of electricity supply, absence of cold chain systems etc. He highlighted some of the major challenges faced by the Indian food processing industry which includes educating consumers that processed foods can be more nutritious; dealing with low price elasticity for processed food products; need for distribution network; development of marketing channels; improving food quality standards and strengthening food testing network and institutional framework etc. He concluded that this challenge must be addressed to achieve full potential of the Indian food processing industry.

Rais(2013) in his study on 'Analysis of Food Processing Industry in India, Skills and Employment Opportunities' during a period of 2005-2010 by adopting secondary data sources from National Sample Survey Organization (NSSO), National Skill Development Corporation (NSDC) etc. He found out that there exist huge gap between per capita demand and supply due to enormous waste during post-harvest storage and handling caused by improper bagging without crating, lack of temperature controlled vehicles, unavailability of cold chain facilities in various parts of country, along with significant processing of the agricultural produce which results in immense losses to the nation. He also describes some important drawbacks of the current supply chain that include high level of wastage, quality degradation, poor infrastructural facilities and high cost. He suggested by stating that the

Government and private operators have to join hands to improve the physical infrastructure, information sharing and the service required for quality improvement of the supply chain.

Ashte(2013) in his study on the 'Performance of Food Processing Industries: A Case Study of Osmanabad District, Maharashtra' during 1998-1999 to 2007-2008 with an objectives to study the performance and examine the facilities and provisions being provided by the government agencies. The study was based on primary data collected by investigator with the help of well-constructed questionnaire from 32 samples involve in the business namely Sugar Factories, Spinning Mills and Poultry at Osmanabad District from 8 Talukas. After analysing the information collected he found out that the majority of the respondents have raised capital by owned and loaned fund. The respondents have not taken any loan from the relatives or friends or money lenders. 57.5 percent respondents opined that the present status was good, whereas 25 percent respondents opined the status was very good and only 17.5 percent respondents opined that the status was not good to all. He concluded that the performance of Food Processing Industries in Osmanabad district was good, and suggests that if they got the effective services and facilities from the Government and institutions, they can perform very well in future which may increase production, employment and income.

Singh (2014) in his study on 'Development Trends of Food Processing Sector in India' made an overview on the status of food processing sector and its role in the economic development of India. The major objectives of the study includes understanding the scenario of food processing sector in India, the role of this sector in economic development and to assess the role of processed foods sector in creating employment opportunities, increasing output, income and raising standard of living. The study was based on descriptive research design. The issues have been examined on the basis of information gathered through primary sources by conducting personal interview to various persons and groups engaged in such sectors.

After analysing of data, the researcher found out that in spite of the country being stood third in the production of food grains and fisheries, only 2.2% of fruits & vegetables, 6% of poultry and 26% for marine products comes under processing. About 35% of total production goes waste due to shortage of processing and proper storage facility. The slow growth of Food Processing Industry was mainly due to inadequate and improper infrastructural facilities, like cold chain, packing, grading and standardization centres etc. In view of the availability of physical, natural and human resources available in India, he concluded by stating that food processing sector has a huge potential to change the socio-economic conditions of the country.

Sarangi(2014) in his study on 'Indian Food Processing Industry: Challenges and Opportunities' observes that gradual progression in agricultural sector has given rise to the food processing industry in India. Objectives of the study include the economic advantage of food processing industry in India and to analyse the Indian market of food processing industry. The study was based on secondary sources of information that were collected from various research papers, reports submitted by various agencies and government data sources. From his analysis he observed that with respect to the economic advantage of food processing industry, only a vibrant food processing sector lead to increasing income levels, reduce wastages and increase employment opportunities. An average Indian spends about 50% of household expenditure on food item and also the demand for processed/convenience food is constantly on rise. He concluded that Indian food processing industry sector was having ample sector to prosper in future years ahead and could be a good potential for the professionals/ entrepreneurs who wants to start their own enterprises.

Jadhav(2014) in his research on 'A Study of Food Processing Industries in India' with the objectives to study a number of food processing in organized sector in India, the exports of India's agro food products, contribution of food processing industries in the India's GDP and to know the growth of Indian food processing industries in India. The study was dependent through secondary data collected from the Ministry of food processing industries, journals, periodicals, and newspapers, research papers published in conference and seminars and online. The period of study was only limited to the accounting year 2010-11 to 2012-13. After analysing of data, he found out that in India there were 139208 foods processing industries among which rice mills industry consist of 75.89% and stood first position in terms of trade. The contribution of food processing industries has increased in India over the last three years of the study period i.e. GDP in 2009-10 is 1.3%. It has increased to 1.4% in the year 2010-2011 and in 2011-2012 is 1.5%. Thus the increasing trend as an average is 1.3%. At the same time the export of India's a food processing product has increased in value in 2011-2012 as compare to the year 2010-2011 i.e. 38.79 but in the year 2012-2013 it has decreased by 35.76%.

Lalthanpuii et.al(2015) in their article on 'Traditional Food Processing Techniques of the Mizo People of Northeast India' conducted a study on the most familiar Mizo traditional food processing techniques and the way of preserving them using different method. Information is collected mainly by interacting with senior and prominent citizens as well as conducting a survey to collate information about the traditionally practiced food processing from different parts of Mizoram. After collecting information they had selected 15 food items and their processing techniques. Some of the food items selected for the study includes Sa-um (fermented pig fats), Bekang um (fermented soyabean), Anthur rep (dried Roselle), Tam um (fermented mustard), Behlawi rep (dried cow pea) etc. After observing they have found out

that Mizo people practice a variety of food processing that they learned from their fore fathers. There was little variation in the processing techniques from place to place apart from slight modifications from time to time for ease of preparation and for quality improvement. They also observed that the Mizo's utilize the available resources such as fire or sun for food preservation and developed their own way of innovative scientific methods for food processing. The study recommended that a study on the nutritive values of the Mizo traditionally processed foods would be very significant to see the impact of such processing on the health of the Mizo community.

Ministry of Food Processing Industries (2015) conducted a study through North-Eastern Regional Agricultural Marketing Corporation Ltd (NERAMAC) based at Guwahati to assess the 'Scope and Potential of Food Processing Industries in the States of Assam, Mizoram and Tripura'. They adopted secondary data through empirical evidences collected from the respective governments, economic survey report etc. The study revealed that the production volumes of various crops in these States currently do not provide the economies of scale for setting up of large food processing industries, except for pineapple. As far as vegetables are concerned, the crops like carrots, peas, tomatoes and ginger offer good scope for processing and value addition, subject to promoting commercial production in these crops. .

Khayat(2015) in his research paper on the 'Factors Affecting Technology Transfer in the Food Processing Industry in the Republic of Philippines' used surveyed questionnaires distributed randomly at different regions in Philippines. Overall, 300 survey questionnaires were distributed out of which 157 were returned. The respondents' gender were fairly distributed between 77 male (49%) and 80 female (51%). The majority of the respondents (128 (82%)) were aged less than 50 years old. Statistical analysis techniques, including

exploratory factor analysis, were used to analyse the collected data in order to address the research objective. Findings from the questionnaires were tabulated and subjected to quantitative analysis. The average and the standard deviation for each item were calculated. He found out that analysis resulted in technology transfer constructed factors consisting of one outcome factor namely, Technology Transfer Value Added (AV), and four technology transfer enabling factors namely, Relation Building (RB), Transferee Characteristics (TE), Government Influence (GI), and Technology Characteristics (TC). He suggests that his findings can help in guiding and directing national policy and strategy for innovation and technology transfer in Food Processing sector.

Noonari(2015) in his research on 'Performance of Pickle Production Processing and Marketing in Sindh, Pakistan', the largest pickle producer, Sindh province, was selected purposively for the study. The study adopted both primary and secondary data. Primary data was collected from a sample of 60 respondents. Lists of pickle producers were prepared and selection was made on proportional random sampling method. Secondary data was collected from literature and publication including report, research papers, etc. After analysing the data he found out that all the respondents except one respondent consume one or the other type of pickle. He also stated that in spite of availability of readymade pickles the popularity of homemade pickles has not decreased. Thus there was a large market for pickle producing units which goes untapped because people go for homemade pickles. He observed that the popularity of mango pickles was fairly consistent among the respondents with almost one third preferring mango pickles. He concluded his studies by observing that Sindh was the most efficient to produce pickle at profitable level.

Selvaraj(2015) in his research on 'A Study on the Development of Food processing Industry in Tamil Nadu', India during 1998-99, 2010-11 with an objectives to study on the development of food processing units in Tamil Nadu and to suggest measures to ensure flow of development. He adopted secondary sources of information through various published and unpublished sources such as annual reports of DIC, Lead Bank, TIIC, Chennai, SIDBI, RBI and from relevant Journals, magazines, news papers and websites. Semi-Log trend equation with Least Square method was used to analyse the data. After analysing of data he found out that food processing industries achieved significant increase of production with a compound growth rate of 7.77 per cent per annum. It was also inferred that there was 30.34 per cent variation in the growth of production during the period under study. A close analysis of the data also reveals that in Tamil Nadu the number of units increased from 3.25 lakhs in the year 1998-1999 to 7.64 lakhs in the year 2010-2011. The percentage share of the number of units increased continuously and steadily from 3.47 per cent in 1998-1999 to 4.90 per cent in 2010-2011. This is not a surprising trend, since Tamil Nadu is one of the leading industrial states of India. He suggests that the bank may have specialized branches in each district to the loan requirements of these industries. The lead banks in all districts may have periodical meetings with the DICs and the Association of the SSI units to assess the nature, type and amount of loans required and may conduct sample surveys of their performance to find whether they are getting adequate bank credit for their operations.

Assocham(2017) in their articles on 'Food Processing Sector: Challenges and Growth Enablers' give a broad objectives of the market scenario, advantage of food processing industry, employment and skill development and export scenario in food processing sector in India. They rely on secondary data obtained from government report, report on India packaged food industry published by strategic management consultant, annual report of Ministry of food processing industry, ICAR report etc. From their observation they have

found out that the Indian packaged processed foods industry is estimated at US$ 10.87 bn – US$ 13.05 bn, including biscuits, chocolates, ice-cream, confectionery, snacks, cheese and butter and the industry is growing at a healthy 14-15 percent over the past two-three years. It has an advantage for strong demand growth, food processing hub and increasing investment along with a policy support from government. Food processing industry accounts for 42 percent of employment in India. With respect to export scenario, the increasing trade across the borders helped in trading approximately about 460 mn tons of food valued at US$ 3 bn annually. India has thus, a great potential for global trade in agricultural and processed food products. As observed from the data, the highest growth is expected in the case of egg and meat sector while lowest is being observed in the case of wheat. The key reason for the same seems to be the increasing per capita income and a shift towards high protein products from the earlier carbohydrates and fats.

CHAPTER- III FOOD PROCESSING INDUSTRY IN MIZORAM: AN OVERVIEW

3.1 GENERAL CHARACTERISTICS OF MIZORAM

Mizoram, with a geographical area of 21,087 lakh sq. Km. and the total population of about 1.1 million, the economy of the state is pre-dominantly agricultural with more than 60% of the total work force engaging in agriculture or agriculture related activities. The total forest cover of the district is 273158 hectares. Aizawl, the state capital is about 1132 metre above the sea level.

Aizawl district has feasibility and scope for cultivation of wide variety of crops. The staple food crop is paddy (rice), maize is secondary. Wide range of fruits, vegetables, spices, oilseeds and pulses are also grown.

The rich diversity of agro climatic conditions, topographical variations and altitudinal differences offer good scope for horticulture activities. Mizoram is a large producer of Areca nut, Ginger and Turmeric. Over 80% of the fruit crops in the state are Bananas and Oranges. The State Government has given full effort not only in achieving self-sufficiency in fruit, vegetable, flowers, spices and plantation crops but also building commercial scale production for identified horticulture crops with a mission to enhancement in production, marketing and processing of horticulture products for increasing income and employment.

During the year 2016-17, the total production of food grains in Mizoram was 6.5 million tonnes, while the production of paddy was 60.7 thousand tonnes and maize was 8.6 thousand tonnes. Among horticultural crops, the production of fruits were 330 thousand tonnes, vegetables 179 thousand tonnes and spices of 69 thousand tonnes, the total of 587 thousand tonnes were produced during the same year.

With respect to agricultural marketing, there are 179 markets across the state which is managed by the Department of Trade and Commerce, Government of Mizoram. There are

144 warehouses with a total storage capacity of 37,330 MT. Two cold chain projects(Zoram Fish Seeds and Mizofa Fish seed, one abattoir project and one mega Food Park named Zoram mega Food Park at Kolasib have been approved by the Ministry of Food Processing Industries with a total area of 9.3 hectare.

3.2 PRODUCTION CLUSTER OF FOOD PROCESSING IN MIZORAM

Mizoram has high potential for processing spices like Chilli, Ginger and Turmeric and also for the production of potato, maize, pineapple, rice etc. Some of the major production cluster can be described as follows:

- Potato: Mamit Aizawl, Lunglei
- Ginger: Mamit, Aizawl, Kolasib, Champai
- Tapioca: Mamit, Kolasib, Lunglei
- Pineapple: Mamit, Aizawl, Lunglei, Saiha
- Rice: Aizawl, Kolasib, Champhai
- Maize: Aizawl, Champhai, Lunglei
- Sugarcane: Aizawl, Saiha (Investment Environment & Opportunity for Food Processing Sector: Mizoram)

Mizoram has three agro-climatic zones based on soil characterization, rainfall and temperature which were beneficial for cultivation of a multitude of crops, vegetables and fruits round the year. The major strength of Mizoram's food processing industry lies in the following crops:

- Food Grains: Paddy, Maize
- Fruits- Banana, Mandarin Orange/Orange, Pineapple
- Plantation- Sugarcane
- Oilseeds- Palm Oil

Apart from this, some of the major processing clusters are:

- Spices & Condiments: Mamit
- Tea: Champhai, Biate
- Mandarin Orange: Aizawl
- Bakery products: Aizawl
- Food &Milk Processing: Aizawl
- Birds Eye Chilli: Aizawl
- Turmeric: Aizawl

With respect to the above, the State government has taken initiatives for the progress of industries in Mizoram. Some of them include;

- Time Bound Service Delivery: Legislation has been implemented to ensure time bound delivery of services to deter officials from not complying with the defined timelines for services being provided to Industries/ Businesses

- Grievance Redressal: Clear mechanisms defining clear procedures for applicants to submit grievances relating to non-compliance with the defined timelines

- Commercial Courts: Special bench under the High Court for commercial cases with clear procedures and defined timelines for all key court events.

- Online Filing: Online system for filing of EM Part I(Registered before 2010) and Part II(Entrepreneur Memorandum-II, registered after 2010) under The Micro, Small and Medium Enterprises Development Act, 2006.

- For supporting government initiatives, the new Mizoram Industrial Policy was set up in the year 1989. The main focus of this policy is promoting industries based on Agricultural, Horticultural and plantations for their better production.

3.3 ORIGIN OF FOOD PROCESSING IN MIZORAM

Historically, Mizo's are known to have unique traditional techniques of processing foods. People are habituated to live and survive with the forest and *Jhum* cultivation culture, which ensure a range of ethnic foods rich in nutrition and compatible to culture and ethnicity of tribes. In Mizo dietary habit rice is considered as the staple food and other foods such as vegetables and meats are considered as side dishes. Since the olden days, the method of food processing among the Mizo's seemed more or less uniform throughout the state, although minor differences might appear from place to place.

In the early days, the techniques of food processing method were simple, and processed food was prepared for the purpose of home consumption. With the establishment of Christianity by the British missionaries in the 1890s, the means of food preparation improved tremendously and there was a rapid change in cropping pattern, and the change in lifestyles of the people started to draw towards the trend of increasing use of commercial processed foods.

It was observed that Mizo people practice a variety of food processing techniques that they learned from their fore fathers. There was little variation in the processing techniques from place to place apart from slight modifications from time to time for ease of preparation and for quality improvement. Some of the well known processed foods of the Mizo's that were prepared and consumed till today includes Sa-um(fermented pig fats), chhawhchhi-um(fermented sesame), Bekang um(fermented soyabean), Anthur rep(dried rosele), Antam um(fermented mustard), dawlrep(dried taro), behlawi rep(dried cow pea) etc.

Many of the Mizo traditional food processing techniques, when analyzed to its deepest root, are for preservation. The foods or vegetables are mostly seasonal and hence are not available all the year round. So, when these seasonal food items were available some means of storage for consumption in the future is in high demand.

In olden days, the means of food storage was poor in the State. Refrigeration was completely absent but it is amazing to learn that the Mizo somehow utilized the available resources such as fire and the sun to devise their own way of food reservation.

It is a well known fact among the Mizo's that the most popular technique of processed food method is smoking. Smoked products are greatly prized by the food lovers in the region. The other common techniques of processed foods include frying, cooking, sun and smoked dried, fermenting, pickling, juicing etc.

Most of the processed foods products are confined to the community level, produced, and sold locally in small scale. They are mostly prepared in individual households, which are not available in commercially in food stalls of the region. The knowledge of the preparation method is generally passed on from one generation to the other through practice and verbally. However, some of the producers are ignorant about the importance of maintaining hygiene and quality specifications during the preparation of such processed food products. (Lalthanpuii, 2015)

Over the past few years, due to increased income and livelihood of the people, food consumption pattern in the state has been changing; there has been a rise in the demand for ready to eat foods or processed foods. Further, a large population has been migrating from different parts of the State for education, job, business etc which enhance the demand for processed foods. Commercialization of the processed foods and adequate marketing thus

started cater the palette of the population and address to the huge demand for different food products in various regions of Mizoram.

3.4 COMMERCIALIZATION AND MARKETING PRACTICES OF FOOD PROCESSING

A step has been taken by the Government for commercialization of processed food products by taking active initiatives on certain aspects such as screening and assessing the outstanding foods from the existing platter, refining them through subsequent secondary or tertiary processing and value addition, setting up location-specific industries and enterprises, and facilitating marketing network through cooperative societies, private sectors, and self-help groups. Such an initiative helps the involvement of private sectors, institutions, and financial support from government, NGOs, and Banks. Some of the initiatives taken up for the successful commercialization of food processing industry are as follows:

Quality control and hygiene:

The primary factor for successful commercialization is hygiene and quality control. Following of quality standards is mandatory on the production. The process of the production should be done hygienically keeping in consideration the Hazard Analysis Critical Control Point and good manufacturing practices guidelines. The nutritive value of each product is needed for analyzing and in maintaining the standard of quality.

Packaging and transport:

Hygienic packing is the key to commercialization of processed food products. To withstand the different levels of marketing stages necessitates proper packaging and transport. The

package needs to be customized depending on the particular product, duration of storage, and transport.

Road transportation is an important mode of travel in the hilly areas. Road connectivity and related infrastructures need to be enhanced for sustainable marketing in the region.

Skill and Entrepreneurship development:

Training and skill development of the entrepreneurs in different food processing methods has been undertaken in the state through Commerce and Industries Department, District Industries Centre and Khadi & Village Industries etc by way of conducting training, workshops, demonstration, and production of different products.

Awareness of the Food Safety Standards Authority of India (FSSAI):

FSSAI is the licensing authority for any food industry in India. Entrepreneurs need to be aware of the existence of FSSAI and set up the processing unit as per norms of FSSAI. The Government of Mizoram started implementation of FSSAI since September 2008 by regular inspection of the food processing industries within the state.

Branding and trademark:

To make an identity in the competitive market, branding of the products is very essential. The Commerce and Industries Department, Government of Mizoram, were working on given a particular trademark for all the processed foods produced by the entrepreneur. This shows remarkable results in maintaining the quality and standards of the products and creates a genuine value to the consumer and helps in deeper penetration in marketing.

Market networking:

Entrepreneurs of different food processing units establish linkage with marketing agencies across the states and outside the states to develop a network which will prove to be beneficial in market expansion and establish an adequate balance between supply and demand.

Support by Government of India:

The Ministry of Food Processing Industries, Government of India, supports the government of Mizoram initiatives in food processing by providing integrated cold chain and preservation infrastructure facilities. Small Farmer Agri-Business Consortium also provides assistance to setting up of cold storage by giving subsidies.

3.5. MIZORAM INDUSTRIAL POLICY

In the year 1989, the Government of Mizoram formulated the first industrial policy for the state which was followed by the Industrial Policy 2000 to enhance the rate of industrialisation in the state. Under the policy priority was given to agro and forest based industries followed by handloom, electronic and consumer industries. The New Industrial Policy was implemented in the year 2012. Some of the salient features of this policy were:

- Capital subsidy of 90% has been given to micro enterprises subject to a minimum ceiling of Rs 5000/- per unit, 75% to small enterprises subject to a ceiling of Rs 25000/- per unit and 50% in case of medium enterprises subject to a ceiling of Rs 50000/- per unit.

- Interest Rebate/ Subsidy have been given to only new industrial units for a period of 5 years. The interest on loan paid by an industrial unit in excess of 8.5% will be subsidized upto a maximum of 4%.
- Scheme will be formulated to support industrial units for obtaining quality certification.
- Power Related incentives will be given to new registered units for a period of 5 years. 60% of total expenditure on power consumption in case of micro enterprises, 50% for small enterprises and 30% for small enterprises.
- Govt. of Mizoram is mandated in giving sustainable employment and introducing better utilization of land by introducing New Land Use Programme (NLUP). The NLUP aimed at increasing Agriculture, Horticulture and livestock produce, better utilization of forest resources, plantation and development of Micro Enterprises at the rural level and at the notified industrial area.
- 50% of the actual cost of transportation by railway or on road or both of plants and machineries can be reimbursed for new enterprises for a period of 5 years.
- Training will be organized and sponsored trainees based on the industrial requirement of the state organizing product specific skill development training in association with various training institutions.
- Entrepreneur's facilitation centre will be set up in all the DICs which will be networked to the resource centre in the Directorate of Industries. This centre will act as source of information for the entrepreneurs and will extend guidance support to entrepreneurs.
- Scheme will be formulated to support industrial unit to undertake R&D activities for development of new design, products, machines and technology.

- 100% Income Tax exemption will continue under NEIIPP, 2007 as was available under NEIP, 1997 new industrial units as well as the existing units on their substantial expansion will be eligible for reimbursement of 100% insurance premium. (industries.mizoram.gov.in)

3.6 INSTITUTIONAL LINKAGE OF FOOD PROCESSING INDUSTRY

A linkage institution is a structure within a society that connects the people to the government or centralized authority. The main institution in the food processing sector is the Directorate of Industries. Some of the other major institutions are Zoram Industrial Development Corporation (ZIDCO), Mizoram Khadi & Village Industries (KVI), District Industries Centre(DIC), Mizoram Food and Allied Industries Corporation Limited(MIFCO), Mizoram Food Processing Research and Training Centre(MFPRTC), Mizoram Food Processing industry(MiFPROY) etc.

3.6.1 DIRECTORATE OF INDUSTRIES

Directorate of Industries was established in the year 1972 to accelerate industrial development in Mizoram by maximizing investment, output, growth, employment and competitiveness through development of infrastructure, human resource, incentives and administrative network.

Industries department has taken initiatives for the development of food processing sector in the State. Some of them are:

- Infrastructure to be developed for growth of Micro, Small and Medium enterprises in the districts of the state
- Exposure visit to be arranged every year outside North East region
- Arrangement of easy finance through bank/ financial institution

- Skill development training programme to be arranged for upgrading of skill of workers
- Exhibition/ fair to be organised for Market development
- Setting up of Industrial Infrastructure Development Corporation(IIDC)

3.6.2 ZORAM INDUSTRIAL DEVELOPMENT CORPORATION (ZIDCO)

Zoram Industrial Development Corporation (ZIDCO) has been set up in the year 1978 by the State government in collaboration with the Industrial Development Bank of India (IDBI) in the share ratio of 51:49. It is setting up industrial units of its own and is also assisting various enterprises. The initial share capital was Rs 3crores which was increased to Rs 10 crores and further to Rs 15 crores during 2016-17.

The paid up capital as on 31.03.2016 comes to Rs 1578.10 lacs. Till now, ZIDCO is having branch offices in Lunglei, Lawngtlai and Siaha.

ZIDCO has given out loans to several small scale industries in the state. From 1997-2002 the amount of loans reached Rs 14,46,57,740/- with refinance drawn from IDBI amounting to Rs 22,04,61,603.46/- (zidco.mizoram.gov.in)

3.6.3. MIZORAM KHADI & VILLAGE INDUSTRIES (KVI)

To promote various types of village industries, Mizoram Khadi and Village Industries Board under District Industries Centre was set up in 1986. The different training cum production centres set up by the Board provides training in different types of food processing methods, silk spinning and weaving, cotton spinning and weaving, soap making, oil extraction, carpentry, cane and bamboo works etc.

3.6.4 DISTRICT INDUSTRIES CENTRE (DIC)

District Industries Centre was established in the year 1986 under the Department of Industries for promoting and development of small and medium scale industries in the state. The main initiatives undertaken by the centre includes dealing with matters of administration, registrations, service matters, preparation of pay bills, preparation of budget, deals with matters relating to projects/ schemes, providing incentives to Industrial Enterprise under State Government. Some of the incentives schemes carried out by the centre are:

DIC process credit link subsidy programme called Prime Minister's Employment Generation Programme to generate employment opportunities in rural as well as urban areas by setting up of new self employment ventures/project/micro enterprises. The DIC invites applications for finance through banks. The scheme envisages loan of upto 25 lakhs for manufacturing sectors and upto 10 lakhs for service sectors. The Government of India provide 35% subsidy in the form of margin money for Schedule Tribes, etc. The owner's contribution for the project is 5% for Schedule Tribes and hilly areas. Applications for finance under the scheme are screen by the District Task Force Committee headed by the Deputy Commissioner of the District. Recommended cases are sponsor to Banks for finance the scheme.

Registration of industries has been undertaken through DIC under which there are three types of registration in small scale/ micro level enterprises i.e. Entrepreneurship Memorandum (EM-I i.e.Temporary registration before 2010), EM-II(permanent registration after 2010), and UAM(Udyog Aadhaar Memorandum(Permanent registration with Aadhaar card from 2017 onwards).

3.6.5 MIZORAM FOOD AND ALLIED INDUSTRIES CORPORATION LIMITED

For the promotion and development of food processing in Mizoram, the Government of Mizoram has set up Mizoram Food and Allied Industries Corporation Ltd. (MIFCO) on 19th December, 1989, registered under the Companies Act 1956. The concept of Food and Allied Industries Corporation emerged from the aspiration of the Government of Mizoram to harness the limited resources endowment of the State, and nurture its potential for the welfare and well-being of its people.

The main objectives of MIFCO are the rapid development and promotion of food processing industries in Mizoram. Some of the initiatives taken up by MIFCO are as follows:

- The authorised Share Capital of MIFCO at the time of its inception was Rs.10 crores which had been enhanced to Rs.20 crores and paid up in the 1st quarter of the financial year 2009-2010. While the Government of Mizoram has contributed Rs.18.64 crores, including fixed assets transferred from the Department of Industries, as equity contribution for MIFCO's Projects viz.Food Processing Plant, Sairang; Fruit Juice Concentrate Plant, Chhingchhip and Pork & Poultry Processing Plant, Zemabawk, the Government of India has contributed
- During the initial period of MIFCO's in-corporation, 3 (three) Production Units were opened i.e. Fruit Preservation Factory, Vairengte, Ginger Oil and Oleoresin Plant, Sairang and Maize Milling Plant, Khawzawl. Apart from these production units 2 (two) on-going projects i.e.Ginger Dehydration Plant, Sairang and Fruit Juice Concentrate Plant, Chhingchhip were transferred to MIFCO from the Directorate of Industries.

- There has been a steady increase in sales of MIFCO products, barring that of 2006-2007 due to the financial crunch. With the commissioning of 2 (two) Projects viz. Pork & Poultry Processing Plant, Zemabawk on 23rd April, 2008 and Food Processing Plant, Sairang (upgradation/expansion) on 30th May, 2008 there has been a quantum jump of sales. Moreover, MIFCO has been gearing up for commissioning of its two Projects at Chhingchhip viz. Food Park and Fruit Juice Concentrate Plant
- MIFCO promotes rural growers for large scale plantation and cultivation of agricultural and horticultural crops thereby generating employment in the rural areas while ensuring regular supply of raw materials at remunerative prices.
- With the financial assistance of the Government of India, Ministry of Food Processing Industries, 3 Food Processing and Training Centres had been set up by MIFCO at Vairengte, Sairang and Chhingchhip. MIFCO conducts periodical training courses in food preservation and processing at the Food Processing and Training Centres at Sairang, Vairengte and Chhingchhip for the benefit of private entrepreneurs both in the rural and urban areas.

3.6.6. MIZORAM FOOD PROCESSING INDUSTRY (MIFPROY)

MiFPROY situated at Sihphir village is a sole proprietorship firm, established in the year 2011 as a manufacturer, exporters and wholesale suppliers dealing with processing spices and other crops in Mizoram. It was licensed under FSSAI and has a valid certificate of importer-exporter code from the Ministry of Commerce and Industry, Government of India.

The main items produced by this industry are Turmeric Powder, Dry Ginger Powder, Dried Sliced Turmeric, Dried Ginger Flakes and Bird Eye Chilli Powder. It is one of the first industries in the State involved in export business along with online marketing of processed foods.

3.6.7. MIZORAM FOOD PROCESSING RESEARCH AND TRAINING CENTRE

MFPRTC is an autonomous body under the Department of Commerce and Industries, Government of Mizoram. The centre has been set up at Phaibawkkawn, Seling village in the year 2016. It is an institute for Food Research, Post-Harvest management, Food Processing Technology and Entrepreneurship & Skills Development. The main purpose of MFPRTC is to develop potentiality, more production and investment initiatives of the fruits and food production and its processing techniques of the state. Export Development Fund of the North-East under the Ministry of Commerce & Industry funded with 5 crores for construction of this centre. It has been look after by the Centre Director with Management Committee comprising of the Commissioner and Secretary, Commerce & Industries Department, Mizoram. The centre is registered under the Mizoram Society Registration Act 2005. The centre has been working with NEDP flagship program of the Government. Some of the main objectives of this industry are;

- To establish and set up state-of-the-art infrastructure facilities for delivering systematic knowledge of food processing technology.
- To engage the farmers/ entrepreneurs in commercial application of food processing and preservation technology
- To impart various entrepreneurship and skill development programmes, diploma courses, certificate courses and including extension services on food processing to self help groups and villages
- To process various agro produces like Ginger, Turmeric, Hatkora, Pineapple, Soya, Bamboo shoots, Squashes and other agricultural products available from time to time.
- To have direct and indirect impacts in regards to generation of employment for the unemployed youths of the state.

3.7. STATUS OF FOOD PROCESSING INDUSTRY

The following table describes district wise number of industries registered under the Government of Mizoram during the year 2016-17.

Table 5: Number of Food processing units registered 2016-2017 (District wise)

District	No of units registered
Mamit	**1**
Kolasib	**3**
Aizawl	**21**
Champhai	**19**
Serchhip	**3**
Lunglei	**17**
Lawngtlai	**2**
Siaha	**5**
Total:	**71**

Source: Statistical Abstract of Mizoram 2017

He table highlight that there were 71 units registered in food processing sector under small scale industries through the District Industries Centre, Government of Mizoram during the year 2016-2017. In District wise, the number of registered units were the largest in Aizawl with 21 industry, followed by Champhai (19) and Lunglei(17), while the smallest number of units registered were at Mamit and Lawngtlai district with only 1 and 2 industries.

3.7.1. INVESTMENT AND STATUS OF EMPLOYMENT

The table highlight the number of persons employed in different food processing industry and the amount of investment made during the period 2000- 2017 in District wise classification;

Table 6: Employment status and amount of investment (District wise)

District	No of persons employed	Amount of Investment (Rs in crores)
Mamit	**595**	**86.02**
Kolasib	**2162**	**18.94**
Aizawl	**10258**	**29.97**
Champhai	**1930**	**33.18**
Serchhip	**2351**	**4.30**
Lunglei	**1535**	**6.71**
Lawngtlai	**218**	**1.16**
Siaha	**1624**	**16.85**
Total:	**20673**	**197.13**

Source: Compiled from Statistical Handbook and Statistical Abstract of Mizoram & Report of District Industries Centre, Aizawl Mizoram.

From the above table, it shows that during the last 17 years (2000-2017), the number of persons employed were largest at Aizawl district with 10258 workers, followed by Serchhip (2351) and Kolasib(2162). Lawngtlai District occupies the smallest number of employment with only 218 employees.

With respect to the amount of investment made, Mamit district secure the top position with Rs 86.02 crores during the last 17 years. At the same time, Aizawl, with the largest unit and

largest number of employees ranked third position with Rs 29.97 crores, while Lawngtlai district invested only Rs 1.16 crores during the same period.

3.8 LOAN DISBURSED UNDER PRIME MINISTER'S EMPLOYMENT GENERATION PROGRAMME (PMEGP)

PMEGP is a credit linked subsidy programme administered by the Ministry of Micro, Small and Medium Enterprises, Government of India. Khadi and Village Industries (KVIC) is the nodal agency at National level and at State level the scheme is implemented through KVIC, KVIB and District Industries Centre. The maximum cost of the project admissible under small scale business sector is up to Rs 10 Lakhs and only one person from a family is eligible for obtaining financial assistance under this scheme. The beneficiaries are entitled of subsidy up to 15%-25 % in urban areas and 25%-35% in rural areas from their loans.

The table highlight the amount of loans disbursed under Prime Minister Employment Guarantee Program (PMEGP) during the period 2010-2017.

Table 7: Amount of loan disbursed under PMEGP

Year	Loan disbursed under PMEGP(Rs in Lakhs)
2010-11	**316.21**
2011-12	**351.02**
2012-13	**280.85**
2013-14	**431.57**
2014-15	**381.51**
2015-16	**338.71**
2016-17	**295.62**
Total	**2,395.49**

Source: Statistical Handbook and Statistical Abstract of Mizoram 2010-17.

Under PMEGP, several loans were disbursed by the Government through different banks like State Bank of India, IDBI, Bank of India, Bank of Baroda, and Apex bank etc. The total amount of loan disbursed during 2010-2017 was Rs 2395.49/- lakhs out of which the numbers of units availing loans were the largest at Rs 431.57/- lakhs during 2013-2014, and lowest at Rs 295.62 Lakhs during 2016-2017. SBI top the list for best performance bank during the same period.

3.8.1 FUNDS RELEASED UNDER NATIONAL MISSION ON FOOD PROCESSING

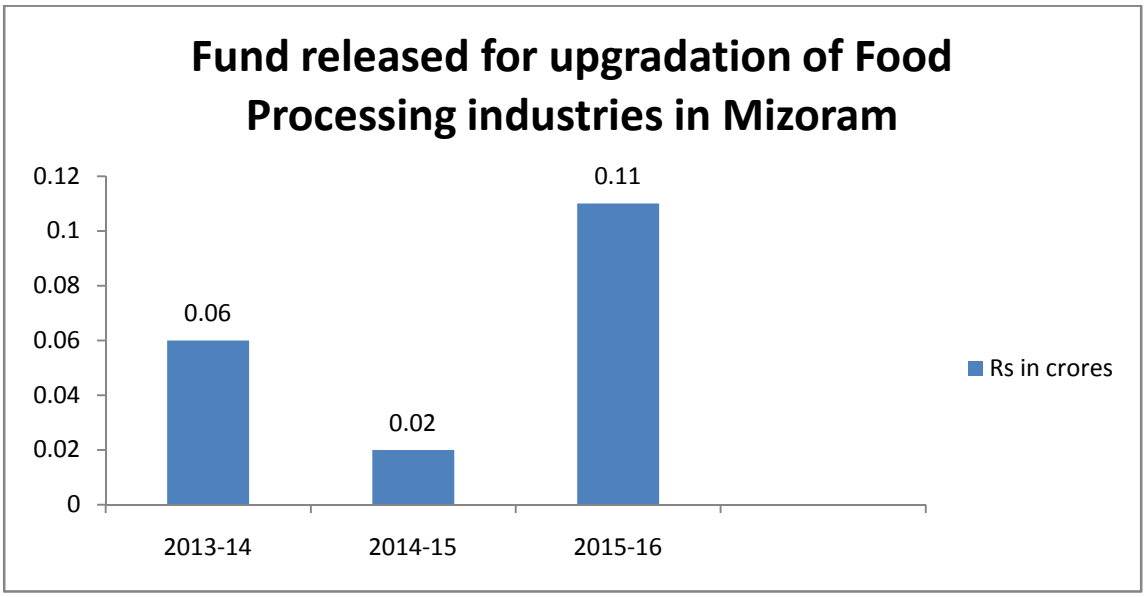
Mizoram accounts for about 12 per cent of the total fruits produced in Northeast India and the yield per hectare is on the rise because of adoption of modern horticultural practices. With abundant natural resources and supporting policies, the food processing sector offers potential for investment.

A special purpose vehicle (SPV) has been set up in the state with private sector companies to set up a plant for processing of turmeric, ginger, chilli, fruits and other horticultural products.

Under the centrally sponsored scheme, National Mission on Food Processing (NMFP), the central government releases fund for the establishment, upgradation and modernisation of food processing industries in Mizoram.

The following chart highlight the funds released for upgradation of food processing industries in Mizoram under NMFP during the period 2013 -2016.

Figure 3.01: Fund Released for upgradation of Food processing industry in Mizoram



Source: Ministry of Food Processing Industries Mizoram Budget 2016-2017

From the above chart, it reveals that several funds have been released by NMFP for upgradation of food processing sector in Mizoram. During the year 2013-14 about Rs 0.06/- Crores has been released, this has reduced to Rs 0.02/- Crores during 2014-15 and rapidly rises to Rs 0.11/- Crores during 2015-16. Majority of the promoters utilised their fund through subsidy, loans etc to upgrade and expand their business.

3.9 FOOD PROCESSING INDUSTRY IN AIZAWL DISTRICT

According to the data collected from District Industries Centre (DIC),Aizawl, there were three types of registration under small scale industries –EM-I(temporary registration before 2010), EM-II(Entrepreneur Memorandum-II,(permanent registration after 2010), and UAM(Udyog Aadhaar Memorandum(permanent registration with Aadhaar card from 2017 onwards). Majority of the food processing industry registered under the category of EM-II, under this category the numbers of registered units during the year 2010-2017 were 990 out

of which food processing units constitutes only 106. As there are numerous promoters involved in food processing business within the city, it shows that majority of the food processing industries were not registered, the reason may be due to the fact that most of these unregistered units feel that registration does not provide them any particular favour/ benefits from the Government.

The following table highlight the performance of food processing industries in Aizawl district in terms of the number of units registered, value of production, number of employment and loans disbursed under Prime Minister Employment Guarantee Programme (PMEGP)

Table 8: Performance of Food processing industries in Aizawl (2010-2017)

Year	No of units registered	Value of production (Rs in lakhs)	No of persons employed
2010-11	17	180.03	42
2011-12	10	96.8	35
2012-13	15	94.35	47
2013-14	14	101.36	49
2014-15	15	72.3	37
2015-16	14	54.32	54
2016-17	21	21.63	43
TOTAL	**106**	**620.79**	**307**

Source: Compiled from Statistical Handbook and Statistical Abstract of Mizoram 2010-17

According to the report of Government through Department of Commerce and Industries, during the year 2010-2011 there were 17 food production units registered and this has decreased to 14 units in the year 2013-2014. At this time the numbers of workers employed

in the sector were 47. By 2016-17 it has rapidly increased to 21 units but the number of employee decline to 43 workers. This clearly shows that the number of food processing industry has increased over the last few years in Mizoram. The data also reveals that each industry employs 2-3 workers (average) with the production capacity of Rs 0.50/- Lakh- Rs 4.2/- Lakh per worker annually. This shows the positive relation between the numbers of units registered with employment. (Statistical Handbook and Statistical Abstract of Mizoram 2010-17).

During the same period, the total value of production was Rs 620.79/- Lakhs out of which in the year 2010-2011 the production value reached the highest at Rs 180.03/- Lakhs. At the same time, during 2016-2017 the production value was at a minimum with Rs 21.63/- Lakhs only, the reason may be due to the fact that the government started production of other items like oil palm, dragon fruits etc under which the food processing industries may slowly become neglected.

CHAPTER IV: PERFORMANCE ANALYSIS OF FOOD PROCESSING INDUSTRY IN AIZAWL DISTRICT

4.1 DETAILS OF THE FOOD PROCESSING UNITS

In order to analyse the performance of food processing industry in Aizawl district, 5 different industries has been randomly selected out of which 4 units from each industries were selected and a total of 20 industries has been covered, i.e. Pickle industry, Chips industry, Bakery industry, Noodles and Juice industry.

The selected industries are:

- **Pickle industries:** CC Pickle, Chhawkhlei Pickle, KLT Fruit & Food Processing, and MS Pickle.
- **Chips industries**: H.E Food Processing, Jemim Chips, Joyce Manufacturing and LK Special Chana.
- **Bakery industries**: KC Bakery, Si Co's Donut, LZ Cakery and Faith Homemade.
- **Noodles industries**: RP Chow, ST Chow, MC Chow and LM Noodles
- **Juice industries**: Rin Rin Juice Parlour, LR Nimbu, ZN Juice and Tetei Fresh Nimbu.

4.1.1 PROFILE OF THE PROMOTERS

The table shows the brief profile of the promoters involved in Food Processing Industry:

Table 9: Brief profile of the promoters

Sl. No	Name of the Industry	Sex	Age	No of fly members	Edn	Location of industry
1	CC Pickle industry	**M**	**33**	**3**	**XII**	Chanmari
2	Chhawkhlei Pickle Industry	**F**	**41**	**4**	**X**	Tuikual
3	KLT Food & Fruit Processing	**M**	**52**	**6**	**X**	Edenthar
4	MS Pickle	**F**	**33**	**3**	**M.A**	Vaivakawn
5	H.E. Food Processing Industry	**F**	**34**	**4**	**XII**	Mission Vengthlang
6	Jemim Chips	**F**	**53**	**3**	**XII**	Chhinga veng
7	Joyce Manufacturing	**M**	**36**	**4**	**XII**	Model veng
8	LK Special Chana	**F**	**60**	**2**	**X**	Bethlehem
9	K.C. Bakery	**M**	**48**	**5**	**XII**	Tuithiang
10	Si Co's Donut	**F**	**32**	**5**	**B.A**	Durtlang
11	LZ Cakery	**F**	**44**	**5**	**XII**	Chaltlang
12	Faith Home made	**F**	**32**	**4**	**XII**	Ramhlun 'N'
13	R.P. Chow Industry	**M**	**77**	**12**	**X**	Bethlehem Vengthlang
14	S.T Chow	**F**	**71**	**4**	**B.A**	Ramhlun Vengthar
15	MC Chow	**F**	**52**	**7**	**XII**	Bethlehem
16	TS Noodles	**M**	**64**	**10**	**XII**	Zemabawk
17	Rin Rin Juice Parlour	**M**	**37**	**9**	**B.A**	Chanmari
18	LR Nimbu Factory	**M**	**54**	**5**	**X**	Laipuitlang
19	ZN Limbu	**F**	**49**	**4**	**M.A**	Kulikawn
20	Tetei Fresh Nimbu	**F**	**69**	**7**	**M.A**	Tuikhuahtlang

Source: Compiled from primary data collected during June- September 2018.

Out of the total 20 industries, majority of the respondents' i.e 60 per cent (12 respondents) were female and the rest 40 per cent (8 respondents) were male. 35 per cent (7 respondents) were below 40 years whereas 45 per cent (9 respondents) were between the age of 41 to 60 years, and the rest 20 per cent (4 respondents) were above 60 years. 75 per cent (15 respondents) had a family size of 6 members and below while 25 per cent (5 respondents) had a family size of 7 members and above. Majority of the respondents 45 per cent (9 no's) passed HSSLC whereas 25 per cent (5 respondents) were below HSLC and the rest 30 per cent consist of 3 graduates and 3 post-graduates (6 no's).

4.1.2 TYPES, CATEGORIES AND PRODUCTS OF THE INDUSTRIES

The names, segment of the industries, categories of items/ products, year of establishment, access to registration and the approval of FSSAI/ISO has been highlighted in the following table:

Table 10: Types, categories and product of the industries

Sl.No	Name of the Industry	Segment	Categories	Year of Estb	Reg	FSSAI/ ISO
1	CC Pickle Industry	Pickle	Banana flower, Soy bean-based fermented food, Dry Chilli, Green Chilly, Mock tomatoes, Bitter guord, Bamboo Shoots, Prawns,Jack fruits,Beef ,King chilli, Edible Moringa(Khanghu) and Baibing (alocasia fornicate)	**2004**	**Yes**	**No**

2	Chhawkhlei Pickle Industry	Pickle	Beef, Banana flower, Birds eye chilli, Green chilli, Dry chilli, Soy-bean based fermented food, Bitter Guord, Mock tomatoes, Bamboo Shoots and Baibing(alocasia fornicate)	**2012**	**Yes**	**Yes**
3	KLT Food & Fruit Processing	Pickle	Tamarind, Prune/sour Plum(Borai) and Mango	**2013**	**Yes**	**Yes**
4	MS Pickle	Pickle	Beef, Banana flower, Green and Red chilli, Mock tomato and Bamboo shoots	**2012**	**No**	**No**
5	H.E. Food Processing Industry	Savory snacks	Gram Flour snacks (bhujia)	**2010**	**Yes**	**Yes**
6	Jemim Chips	Savory snacks	Banana and Potato	**2000**	**Yes**	**Yes**
7	Joyce Manufacturing	Savory snacks	Chickpeas snacks, Gram flour snacks and Papadum	**2011**	**Yes**	**No**
8	LK Special Chana	Savory snacks	Chickpeas and Almond	**2010**	**No**	**No**
9	K.C. Bakery	Bakery	Cake, Biscuits, Bread and Bun	**2006**	**Yes**	**Yes**
10	Si Co's Donut	Confectionery	Donut	**2014**	**No**	**No**
11	LZ Cakery	Confectionery	Cake, cheese cake , donut	**2014**	**No**	**No**
12	Faith Home made	Confectionery	Cake and cheese cake	**2013**	**Yes**	**No**
13	R.P. Chow Industry	Instant Noodles	Chow	**2000**	**Yes**	**No**
14	S.T Chow	Instant Noodles	Chow	**2002**	**Yes**	**No**

15	MC Chow	Instant Noodles	Chow	**2004**	**No**	**No**
16	TS Noodles	Instant Noodles	Chow	**2007**	**No**	**No**
17	Rin Rin Juice parlour	Natural beverages	Lime juice	**2012**	**Yes**	**Yes**
18	LR Nimbu Factory	Natural beverages	Lime juice	**2013**	**No**	**No**
19	ZN Nimbu	Natural beverages	Lime juice	**2013**	**No**	**No**
20	Tetei Fresh Nimbu	Natural beverages	Lime juice	**2012**	**Yes**	**Yes**

Source: Primary data collected during June-September 2018

The above table shows the type of industry, items/ products, year of establishment, access to KVI/DIC registration and ISO/FSSAI certified. Details of the industry and their products are discussed below;

Pickle Industries:

CC Pickle industry started their business in the year 2004 and the products produced by them were Banana flower, Soy-based fermented food (Tungrung), Dry Chilli, Green Chilly, Mock tomatoes, Bitter gourd ,Bamboo shoots, Prawns, Jack fruits, Beef and King Chillies, Edible Moringa(Khanghu) and Alocasia fornicate(Baibing). They owned registration certificate from DIC and KVI; their application for FSSAI approval is still under process.

Chhawkhlei Pickle industry has been started since 2012 and the main items produced by them were Beef pickles, Banana flower, Birds eye chilli, Green chilli, Dry chilli, soy-bean fermented food, Bitter guord, Mock tomatoes, Edible Moringa(Khanghu).Bamboo shoots and Baibing(alocasia fornicate) were produce occasionally. The industry received Government

registration through DIC as well as ISO certification from Guwahati, they applied for FSSAI and is still under process.

KLT Food & Fruit Processing industry was established in the year 2013 and the main items produced by them were Tamarind Pickles, Mango Pickles and Sour Plum. They received Government registration from KVI and DIC, and FSSAI approval license from Guwahati and Mizoram.

MS Pickle was started in the year 2012, the main items produced by this industry were Beef pickles, Banana flower pickles, Green and Red chillies, Mock tomatoes and Bamboo shoots. They did not access to government registration as well as FSSAI approval licence.

Chips Industries:

H.E Food processing industry was started in the year 2010. The main item produced by them is fried snacks (bhujia) made from gram flour. Their industry is registered under DIC and also received approval of FSSAI.

Jemim Chips industry was established in the year 2000, and the main items produced by this industry were Potato Chips and Banana chips. They received government registration as well as approval of FSSAI.

Joyce Manufacturing Industry was established in the year 2011. Their main product includes Dry Pulses, Papad and chick pea snacks (Bhujia). They have a government registration but did not avail approval of FSSAI.

LK Special Chana was started in 2001, their main products were snacks made of Peanut and dry Pulses. They did not access to FSSAI certified approval and government registration.

Bakery Industries:

There were four bakery industries studied. KC bakery was started in the year 2006.Their main productions includes Bread, Bun, Cake and different types of Biscuits. They received government registration along with FSSAI approval.

Si Co's Donut was started in the year 2014 and their main production is Donut. They did not access to government registration as well as FSSAI certified.

LZ Cakery was established in 2014, the industry produce Cake, Cheese cake and Donut. They did not avail government registration and approval of FSSAI.

Faith Homemade have started their business since 2013, cheese cake and cake/pastry are the main items produced by them. They received registration from the government through DIC but did not access to FSSAI approval.

Noodles Industries:

RP Chow started their business way back in the year 2000 and has been functioning smoothly for 18 years; their main item of production are noodles (chow). They received government registration through DIC and KVI, but did not avail the approval of FSSAI.

ST Chow industry was started in the year 2002, chow making (noodles) business is their main occupation which provides them sole income. They received government registration through KVI and DIC but did not certify by FSSAI.

MC Chow, which started since 2004, did not avail government registration as well as FSSAI approval. Their main occupation is chow making.

TS Noodles was started in the year 2007 and has been running for almost11 years, chow making business is their sole occupation providing them sufficient income to support their livelihood. They did not receive government registration as well as FSSAI certified.

Juice Industries:

Among the juice industries, Rin Rin Juice Parlour started their business in 2012 and has been running their business for about 7 years. They received government registration through DIC and also access to FSSAI approval. Making of lime juice is their main occupation.

LR Nimbu started their business in 2013; they did not get government registration and FSSAI approval.

ZN Nimbu was started in the year 2013, they did not apply for Government registration as well as approval of FSSAI certified.

Tetei Fresh Nimbu was started in the year 2012; they receive government registration and approval of FSSAI.

From the information collected, the data highlights that all the industries were established between the year 2000-2014, and the majority of the industries i.e 12 units received government registration either through DIC or KVI, while the other 8 units were not registered. The non-registered units did not feel the need to get registration done as they did not get any particular favour or benefits from the government. At the same time those who got registered under the government feel the favour or benefits while undertaking training course and also easy access to loan facilities, subsidy etc.

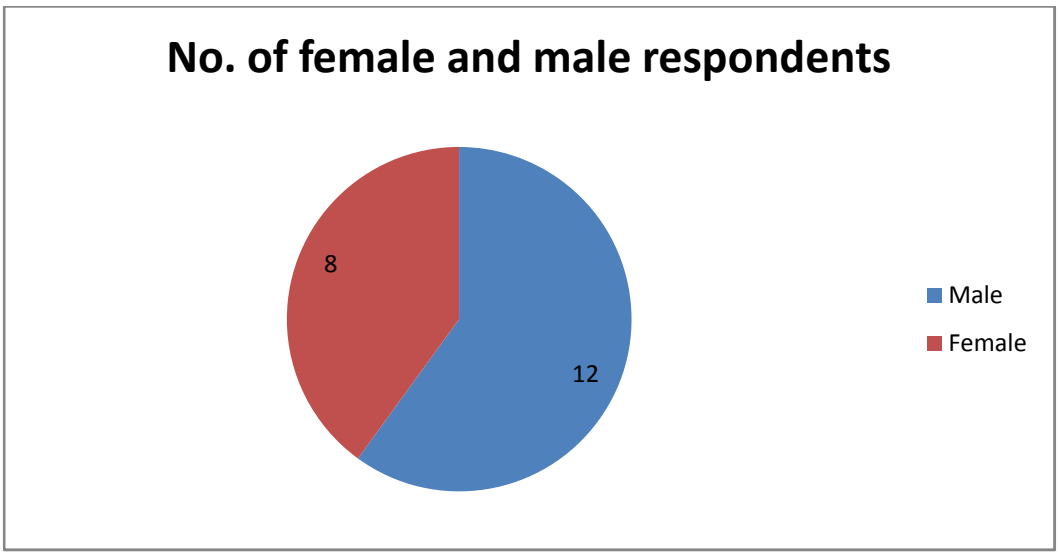
Food Safety and Standards Authority of India (FSSAI) which was established in the year 2006 is a statute related to food safety and regulations in India. There are three types of licenses i.e Central license, State license and Registration Certificate according to industry

turnover rate. FSSAI certificate has become mandatory for all manufacturers, traders, restaurants and others who are involved in food business. The government of Mizoram started Food Licensing and Registration System on 19th November 2014 and made mandatory registration for all the industries/units involved in food business from May 2018, since then the inspection team constantly take action by checking the food business spots in different places/ regions/ locality within the State. With respect to the sample collected for the present study, majority of the industries i.e 13 industries did not get license from FSSAI and only 7 units receive approval certification. This clearly shows that most of the businessmen are not aware of the importance and regulation of the licenses of FSSAI which reveals that there need to be more awareness campaign through electronic media, newspapers etc.

4.2 NUMBER OF MALE AND FEMALE RESPONDENTS

Below is the pie chart which describes the number of male and female respondents/ promoters of the sampled units. There were 20 industries out of which 12 respondents were female and the rest 8 respondents were male.

Figure 4.01: Number of male and female respondents



Source: Compiled from primary data collected during June-September 2018

The study reveals that since majority of the respondents are female, there is a higher participation rate of women in food processing business within the area of studies.

At the same time, most of the respondents found that food processing business is quite profitable to support livelihood and also generates monthly savings and investment for further expansion of the business. Some of the respondents bought vehicles while others bought land along with construction of buildings/ houses, whereas some of them utilised it for supporting their children's educational expenses.

4.3 EDUCATIONAL QUALIFICATION OF THE PROMOTERS

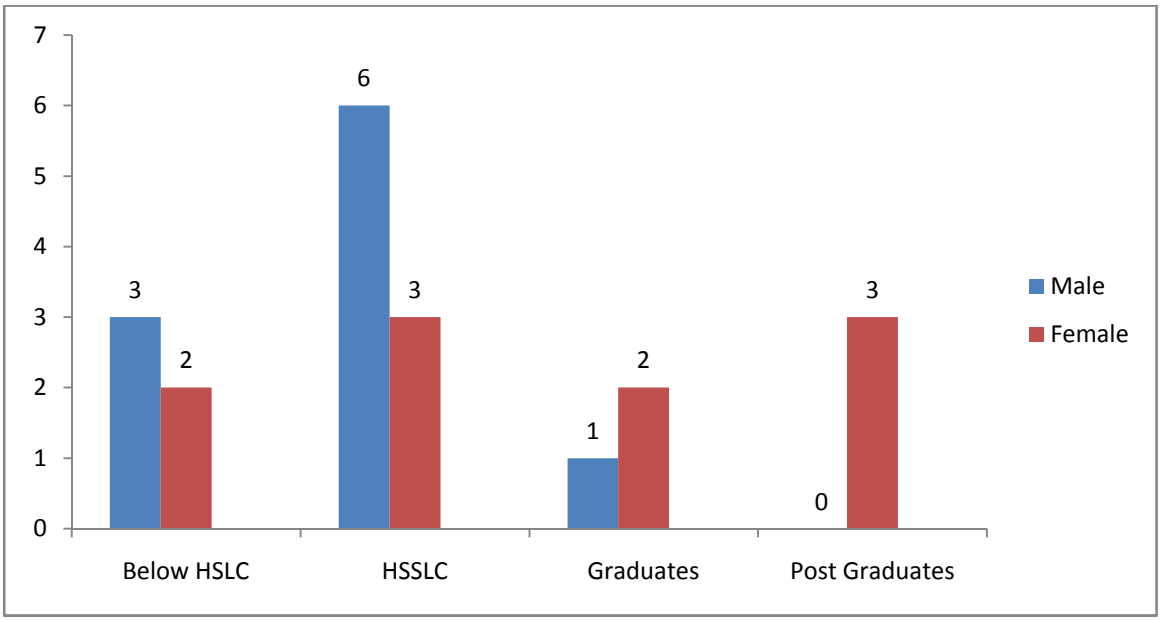
Below is a table and chart representing the educational qualifications of the respondents (male and female) with the level of literacy in terms of percentages

Table 11: Educational level of the promoters

Sl.no	Educational level	No of Respondents			
		Male	Female	Total	% of literacy level
1	Below HSLC	3	2	5	25
2	HSSLC	6	3	9	45
3	Graduate	1	2	3	15
4	Post Graduate	0	3	3	15
	Total	10	10	20	

Source: Primary data collected during June- September 2018

Figure 4.02: Educational level of the Promoters

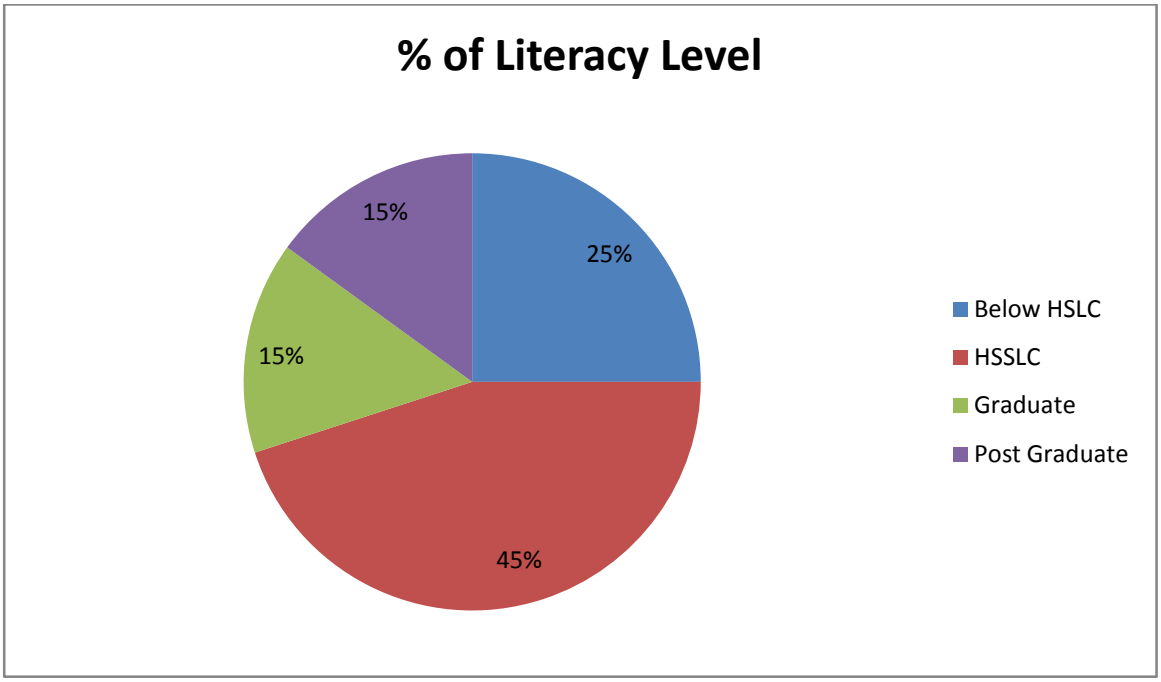


Source: Primary data collected during June- September 2018

The above table and chart highlights the educational level of the respondents. It shows that majority of the promoters (9 respondents) i.e. 45 per cent passed secondary classes (HSSLC) whereas 25 per cent (5 respondents) are below HSLC and the rest 30 per cent (6 respondents) 2 graduates and 4 post graduates. Out of the total respondents, 3 male and 2 female did not pass Class X, whereas 6 males and 3 females passed Class XII. There are 1 male and 2 female graduate and 3 female post graduates.

The percentage of literacy level for both male and female promoters highlight on the above table is shown on the following pie chart;

Figure 4.03: Percentage of Literacy level of the Promoters



Source: computed

The pie chart reveals that majority of the promoters were HSSLC passed i.e 45 per cent, followed by the promoters below HSLC at 25 per cent. There were equal percentages of 15 per cent each for Graduate and Post Graduate respondents. This clearly shows that higher education qualification does not necessarily relate to the success of business.

4.4 EDUCATIONAL LEVEL AND INCOME

The table highlights the relationship between educational level and monthly income of the different industry under study.

Table 12: Educational level and Monthly income

Sl.No	Name of the Industry	Educational Level	Monthly income (in Rs)
1	CC Pickle industry	HSSLC	684000
2	Chhawkhlei Pickle Industry	Below HSLC	460000
3	KLT Food & Fruit Processing	Below HSLC	193600
4	MS Pickle	Post Graduate	480000
5	H.E. food processing Industry	HSSLC	225000
6	Jemim Chips	HSSLC	1000000
7	Joyce manufacturing	HSSLC	158400
8	LK Special Chana	Below HSLC	81200
9	K.C. Bakery	HSSLC	1027200
10	So Co's Donut	Graduate	153600
11	LZ Cakery	HSSLC	57910
12	Faith homemade	HSSLC	564000
13	R.P. Chow Industry	Below HSLC	240000
14	S.T Chow	Below HSLC	300000
15	MC Chow	HSSLC	307500
16	LM Noodles	Post Graduate	550000
17	Rin Rin Juice Parlour	Post Graduate	112000
18	LR Nimbu	Graduate	40000
19	ZN Nimbu	HSSLC	60000
20	Tetei Fresh Nimbu	Post Graduate	90000

Source: Primary data collected during June- September 2018

The table shows that all of the respondents were literate which clearly depicts the higher literacy level in the State. But this does not necessarily mean that higher qualification provides more income to the businessmen which can be clearly seen from the data. It shows that the highest income earner among the industries was HSSLC passed while Graduates and Post-Graduates respondents were the one who earned lesser income. This suggests that educational level does not have a positive relationship with income according to the present study. The study also shows that people were looking for the job/ business that would give them substantial income to raise their standard of living instead of relying on government jobs.

4.5 CAPACITY UTILISATION (PER MONTH)

The table highlights the percentage of utilisation capacity with respect to production capacity and estimated production calculated in units. It is calculated by production capacity divided by the estimated production which is multiplied by 100.

Table 13: Percentage of capacity utilisation per month

Sl.No	Name of the industry	Estimated Production(in units)	Production Capacity(in units)	Capacity Utilisation (%)
1	CC Pickle industry	**8200**	**8143**	**99.30**
2	Chhawkhlei Pickle Industry	**48000**	**46000**	**95.83**
3	KLT Food & Fruit Processing	**61000**	**60500**	**99.18**

4	MS Pickle	**24000**	**19200**	**80**
5	H.E. food processing Industry	**19200**	**17304**	**90.1**
6	Jemim Chips	**48000**	**27680**	**57.66**
7	Joyce manufacturing	**26400**	**26400**	**100**
8	LK Special Chana	**26000**	**23200**	**89.23**
9	K.C. Bakery	**60000**	**51360**	**85.6**
10	So Co's Donut	**19200**	**19200**	**100**
11	LZ Cakery	**785**	**785**	**100**
12	Faith Homemade	**312**	**312**	**100**
13	R.P. Chow Industry	**18000**	**9600**	**53.33**
14	S.T Chow	**18000**	**12000**	**66.67**
15	MC Chow	**18000**	**12300**	**68.33**
16	LM Noodles	**25200**	**22000**	**87.30**
17	Rin Rin Juice parlour	**1440**	**1400**	**97.22**
18	LR Nimbu	**480**	**400**	**83.33**
19	ZN Nimbu Juice	**960**	**600**	**62.5**
20	Tetei Fresh Nimbu	**1600**	**1000**	**62.5**

Source: Compiled from primary data collected during June- September 2018

The table shows the unit estimation of production, production capacity and the utilisation of available capacity. With respect to pickle industries KLT Food & Fruit processing has the highest number of production with 61000 units per month and sales 60500 units, there is a gap of 500 units' i.e 95.83 per cent of utilisation. At the same time CC pickle industry has the highest production capacity with 8143 units with utilisation capacity of 99.30%.

Among the chips industry Joyce manufacturing industry has the same estimated production and production capacity (26400units) with utilisation capacity of 100 per cent, followed by HE Food processing industry having production capacity of 19200 units with 90.1 per cent of utilising capacity.

Bakery industry have the highest capacity utilisation among different industries selected for the study with three of its units; Si Co's Donut (19200 units), LZ Cakery(785 units) and Faith Homemade(312 units) has 100per cent utilisation capacity, while KC Bakery has the largest production with 60000 units and sales of 51360 units per month, there is a huge gap of 8640 units i.e. 85.6 per cent of utilisation capacity that may cause them lesser profit among the confectionary industry.

Chow making/ Noodles industries have the least utilisation capacity where three of the units RP chow (53.33 per cent), ST Chow (66.67 per cent) and MC Chow (68.33 per cent) secured the same estimated production due to the same amount of raw materials used for production with the same price per unit, but different production capacity. LM Noodles has the largest production capacity of 25200 units and sales of 22000 units per month; a gap of 3200 units was made with 87.30 per cent of utilisation capacity.

Among the juice industries, Rin Rin Juice Parlour has the highest sales with capacity utilisation of 97.22 per cent. ZN Nimbu and Tetei Fresh Nimbu have the same utilisation capacity of 62.5 per cent, even though their estimated production and sales are different.

Among the five different industries, KLT Food & Fruit processing has the highest production as well as sales. Faith Homemade has the least production and sales i.e 312 units per month, but in terms of capacity utilisation, it has the highest capacity with 100 per cent utilisation along with three other units; Joyce manufacturing, Si Co's Donut and LZ Cakery. RP Chow industry has the least capacity utilisation with 53.33 per cent per month.

Thus the study reveals that in terms of capacity utilisation bakery industries has the highest percentage with a total of 386.6%, this may be due to the fact that most of the bakery products especially cakes, Bread and Donuts were perishable items which needed to dispose/ sell off immediately for consumption. The researcher also notice that three of the four units, i.e So Co's Donut, LZ cakery and Faith Homemade prepared/made their products based on order only which makes their utilisation capacity higher than other units.

Noodles/ Chow making industries have the least utilisation capacity compared to others which is 275.63 per cent as there are a large number of people undertaking the same business in the same area which makes the number of sales lesser than other industry.

4.6 CALCULATION OF INCOME

The table highlights the estimation of monthly income calculated by the unit of total sales multiplied by the price per unit.

Table 14: Estimation of monthly income

Sl.No.	Name of the Industry	Total sales(in units)	Price per unit	Total income
1	CC Pickle industry	**8142**	**84**	**683928**
2	Chhawkhlei Pickle Industry	**46000**	**10**	**460000**
3	KLT Food & Fruit Processing	**60500**	**3.2**	**193600**
4	MS Pickle	**19200**	**25**	**480000**
5	H.E. food processing Industry	**17097**	**13.16**	**225000**
6	Jemim Chips	**25000**	**40**	**1000000**

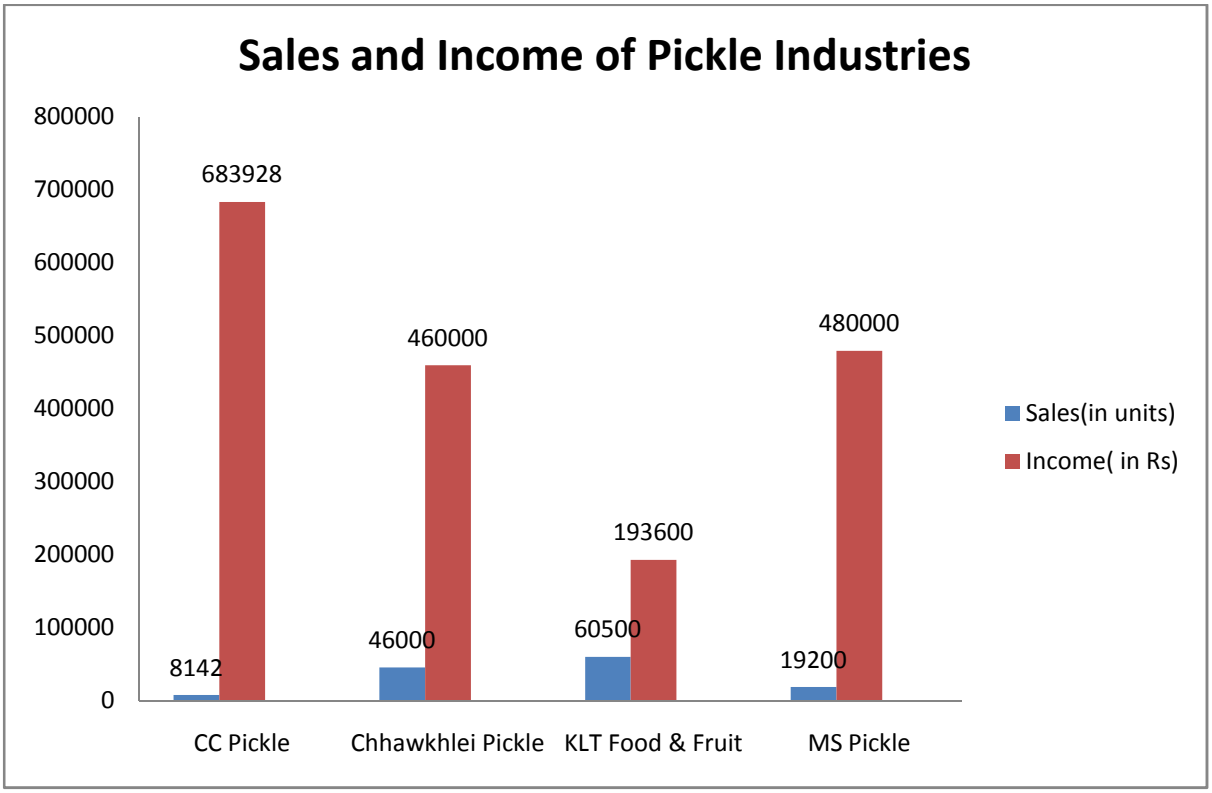
7	Joyce manufacturing	**26400**	**6**	**158400**
8	LK Special chana	**23200**	**3.5**	**81200**
9	K.C. Bakery	**51360**	**20**	**1027200**
10	Si Co's Donut	**19200**	**8**	**153600**
11	LZ Cakery	**785**	**557**	**57910**
12	Faith homemade	**312**	**2750**	**564000**
13	R.P. Chow Industry	**9600**	**25**	**240000**
14	S.T Chow	**12000**	**25**	**300000**
15	MC Chow	**12300**	**25**	**307500**
16	LM Noodles	**22500**	**25**	**550000**
17	Rin Rin Juice parlour	**1400**	**80**	**112000**
18	LR Nimbu	**400**	**100**	**40000**
19	ZN Nimbu	**600**	**100**	**60000**
20	Tetei fresh nimbu	**1000**	**90**	**90000**

Source: Compiled from primary data collected during June- Sept 2018

The income of different food processing industries has been calculated and is shown on the above table. The table highlight the total sales in a month calculated in unit terms and the price per unit, and the total income can be estimated.

Pickle Industries:

Figure 4.04: The sales and income of pickle industries



Source: computed

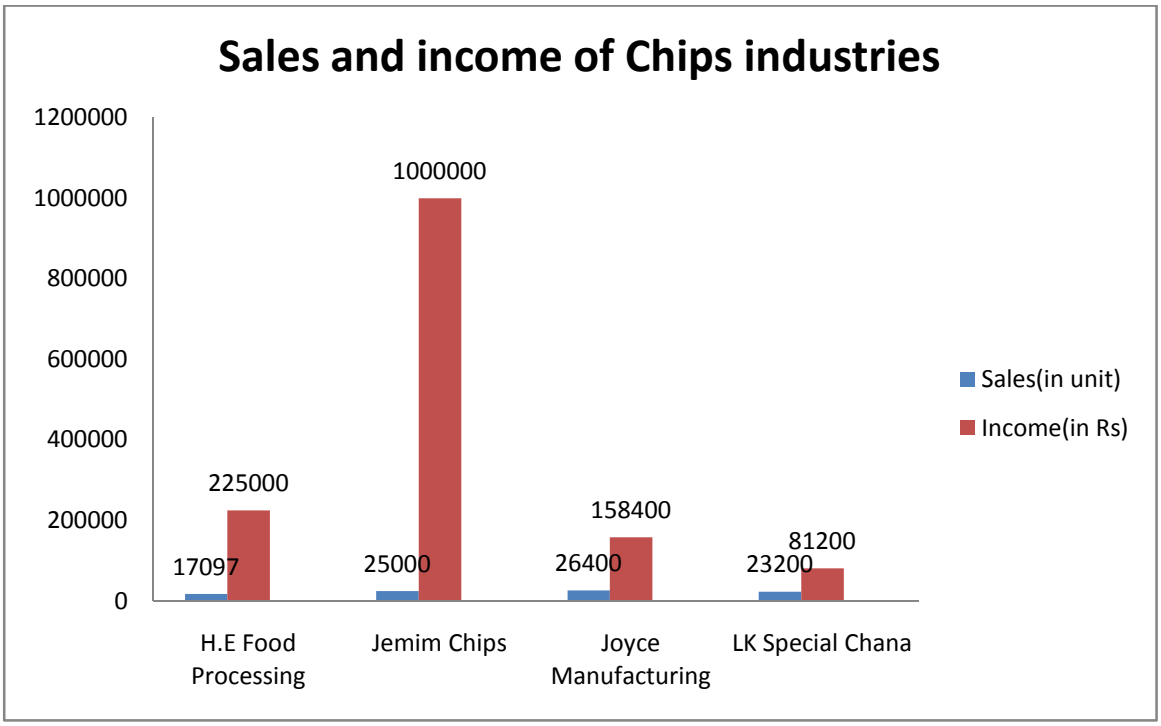
Among the selected units of industry with respect to pickle production, CC pickle has the highest total income with Rs 6, 84,000/- per month. The total sales is 8143 packets/ units.The price per unit is Rs 84/- (taking the mean value from different prices of the product i.e. Rs 10, Rs 20, Rs 40, Rs 100 and Rs 250/-. The reason for having the highest income may be due to the availability of different variety of products with 12 different kinds of variety of pickles. Also different organisations and college students bought in bulk to generate funds by reselling it.

KLT Food & Fruit Processing industry has the least income earned of Rs 1, 93,600/-. This may be due to the fact that they purchase raw materials (seasonal crops) in bulk and since

they did not have a proper storage facility, many of the raw materials get spoiled before they are used for production. The total sales are 60500 units, and the cost per unit was taken as Rs 3.2/-

Chips Industries:

Figur4.05: The sales and total income of chips industries

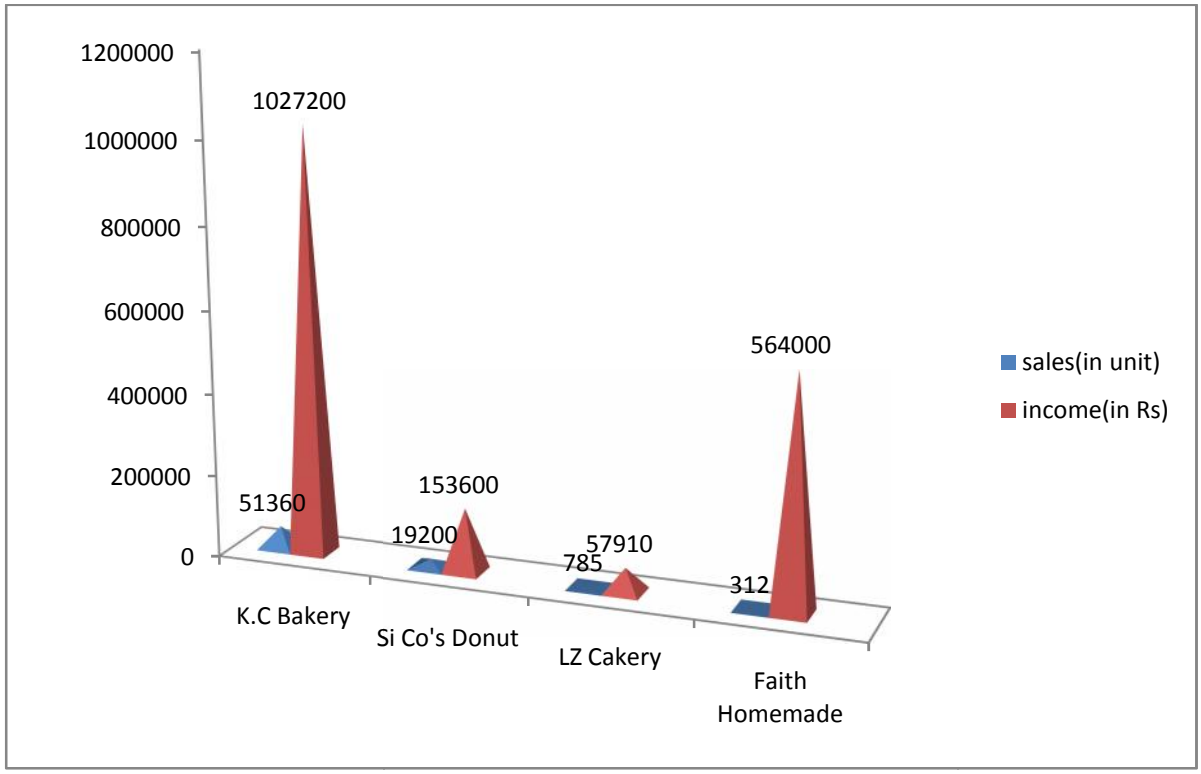


Source: Computed

Jemim chips has the highest income of Rs 1000000/- among the chips industry with Rs 40/- per unit (mean value of Rs 15, Rs 25 and Rs 40/-) since they have a permanent supplier of raw materials with cheaper rates. At the same time their total production is 48000 units while the total sales is 25000 units only, thus creating a huge gap between the production and sales (Rs 23000/-). LK Special Chana has the least income earned i.e Rs 81200/- per month. The reason for this may be due to the fact that they have a small family size and are contented with the earnings they made and did not planned for further expansion of their business.

Bakery industries:

Figure 4.06: Sales and income of Bakery Industries

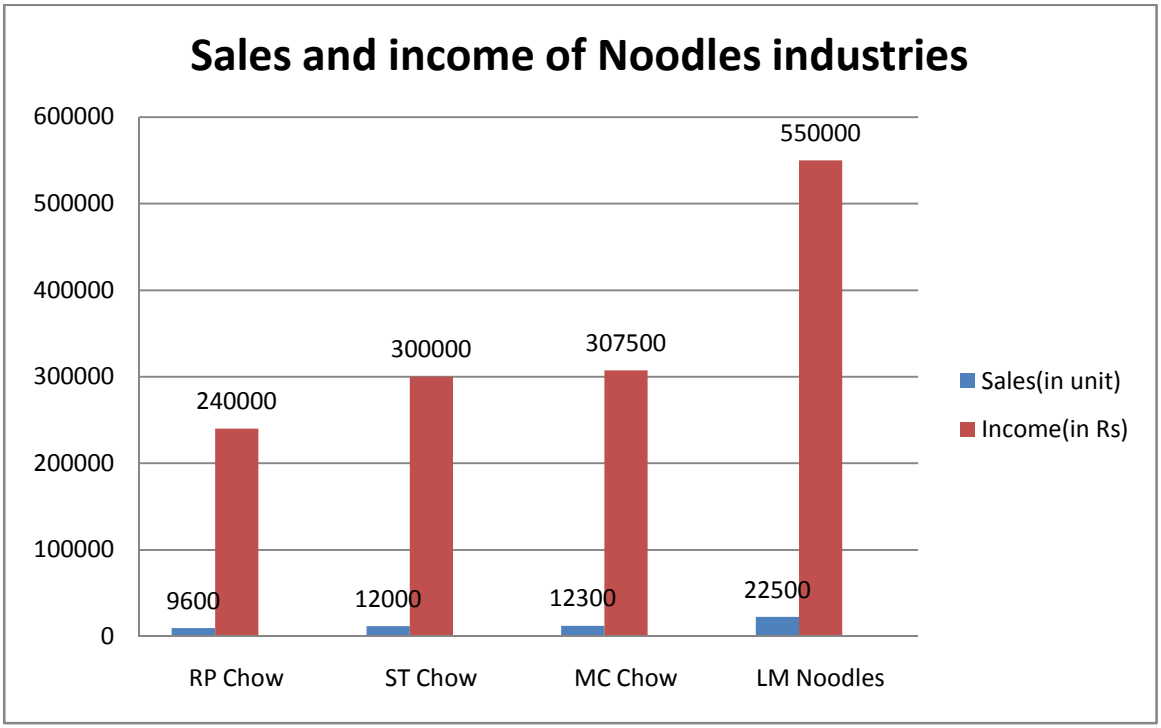


Source: Computed

KC bakery has the highest income at Rs 10,27, 200/- per month with Rs 20/- per unit of output (mean value of Rs 9(Biscuits and Bun), Rs 17(Bread) and Rs 45(plain cake) due to more production and more sales, while LZ cakery has the least income at Rs 57,910/- per month. This may be due to the fact that the producer had no intention in making mass production and is contented if it is enough to support their livelihood.

Noodles Industries:

Figure 4.07: Sales and income of Noodles Industries

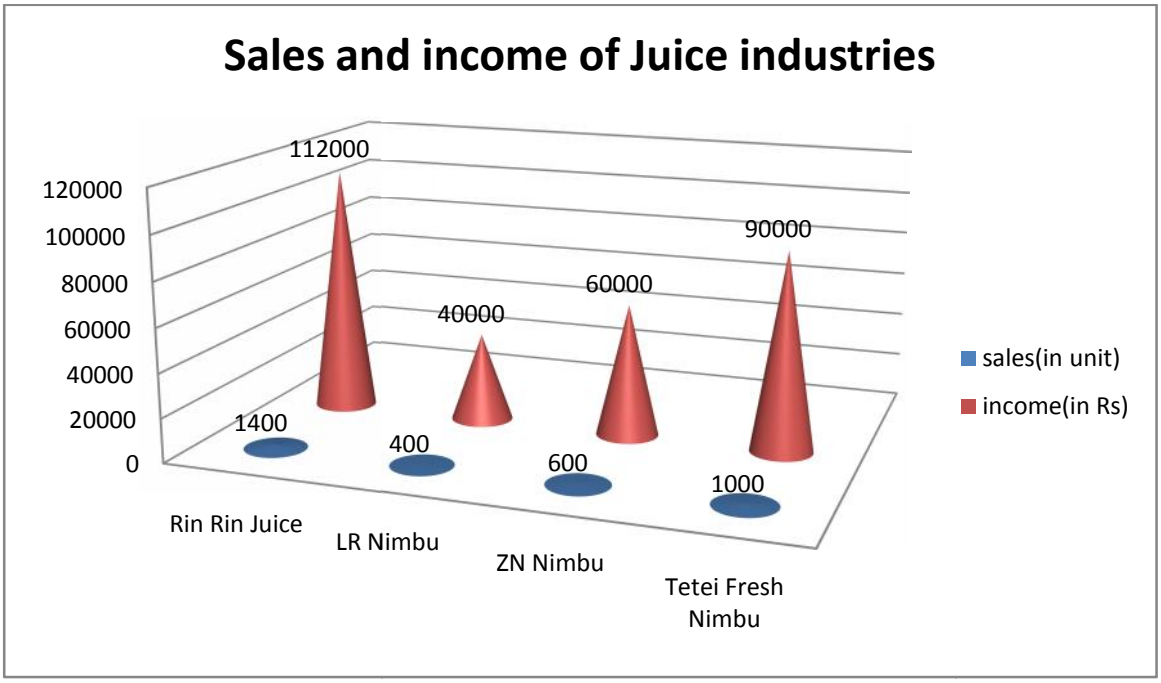


Source: Computed

Among the noodles/ chow making industry, LM noodles with total income of Rs 550000/- have the highest income per month with Rs 25/- per unit of output due to more production than others (25200 units) along with sales of 22500 units per month. Even though the other three industries produce the same amount of units with same amount of raw materials, RP Chow has the lowest income because of their lowest sales.

Juice Industries:

Figure 4.08: Sales and income of Juice Industries



Source: Computed

Among the juice making industries, Rin Rin Juice parlour earned a total income of Rs 1,12, 000/- per month with the rate of Rs 80/- per unit. Since the price per unit is less than the other industries they sale more products. LR Nimbu has the least income per month at Rs 40,000/- due to less production as well as sales since the producer has other additional income. So the productions as well as selling of juice is a part of own interest with no intention of higher profit or production.

Among all the industries, pickle industry has the highest income earned at Rs 18, 17,528/- per month while juice industry has the lowest monthly income at Rs 3, 02,000/-.

4.7 CAPITAL INVESTMENT

The table highlight the capital investment on monthly basis which is calculated from the value of equipment and the amount of labour cost.

Table 15: Capital Investment of Food processing industry

Sl.No	Name of the Industry	Value of Equipment(in Rs)	Labour Cost (in Rs)	No of Empt
1	CC Pickle industry	**59025**	**25800**	**10**
2	Chhawkhlei Pickle Industry	**670000**	**13500**	**4**
3	KLT Food & Fruit Processing	**525000**	**20160**	**7**
4	MS Pickle	**35000**	**10500**	**4**
5	H.E. food processing Industry	**4800**	**19000**	**7**
6	Jemim Chips	**215000**	**48000**	**10**
7	Joyce manufacturing	**4700**	**6000**	**5**
8	LK Special Chana	**5075**	**4000**	**5**
9	K.C. Bakery	**300000**	**112000**	**14**
10	Si Co's Donut	**16000**	**9600**	**4**
11	LZ Cakery	**57500**	**3000**	**2**
12	Faith Homemade	**302000**	**17000**	**5**
13	R.P. Chow Industry	**120000**	**16000**	**6**
14	S.T Chow	**150000**	**20000**	**6**
15	MC Chow	**83500**	**13000**	**5**
16	LM Noodles	**120000**	**16000**	**7**

17	Rin Rin Juice parlour	**170000**	**19200**	**5**
18	LR Nimbu	**58600**	**14000**	**4**
19	ZN Nimbu Juice	**15800**	**6000**	**4**
20	Tetei Fresh Nimbu	**17800**	**22000**	**6**

Source: Compiled from primary data collected during June-September 2018

The above table shows the capital investment based on monthly employment rate and value of equipment.

Pickle industries:

Among the pickle industries, four samples have been selected randomly. Out of the sample collected, CC pickle industry has 6 female permanent workers and 4 part time workers who. Permanent workers earned Rs 3,500/- per month while part time workers earned Rs 150/- per day which costs them Rs 2,100/- per month, totally, they spent Rs 25800/- monthly for labour cost. The industry owned Grinder (5 nos) costing Rs 8000/- each (total cost =Rs 40,000/-), Gas cylinder (domestic) 4 no's costing Rs 4,625/-(1 cylinder cost Rs 925/-), plastic cover and container of different sizes which they ordered from Silchar through regular dealer every week for Rs 3000/-, altogether cost the industry Rs 59,025/- in equipment.

Chhawkhlei Pickle industry spend Rs 6,70,000 for buying of equipment which contains meat mincer(1) costing Rs 20,000/-, Grinder(4no's) 1 cost Rs 8000/-, fridge double door(2) costing Rs 1,00,000/- each, deep freezer(3) costing Rs 1,00,00/- each, ginger grinder(1) Rs 60,000/-, garlic and onion grinder(2nos) Rs 6,000/- each and packing machine(4nos) costing Rs 4,000/- each. Apart from this, they spent Rs 13,500/- for hiring of 3 female labourers, each earning Rs 4500/- per month.

KLT Food & Fruit processing industry spend Rs 20,160/- per month for hiring of 4 female and 3 male workers who earned Rs 120/- each per day. Their capital equipment includes grinder (Rs 1, 00,000/-), packing machines 6 no's (Rs 15,000/- each), steamer (Rs 1,00,000/-) blending machines(Rs 20,000/-), Sealer 4 no's of Rs 4,00,000/-(Rs 1,00,00/- each) and generator (Rs 1,00,000/-), a total of Rs 525000/-.

MS Pickle industry hired 3 female workers at Rs 3,500/- per month each, costing Rs 10,500/- as labour cost. The value of equipment is only Rs 35,000/- which contains Refrigerator (Rs 26,000/-), Mixer 2 no's Rs 7,000/-(Rs 3500/- each) and 2 Large Cooking Pot at Rs 2,000/- (Rs 1,000/- each).

Among all the pickle industries, the total value of machineries owned by Chhawkhlei Pickle Industry is the highest since they used to store seasonal crops like Bamboo shoots, Baibing, Red chillies etc in bulk which needs a large storage compartment like Refrigerator and Deep freezer which were expensive equipments, at the same time MS Pickle spent the lowest on machineries and employment since the promoter run her business with the intention of making additional income by undertaking the business at home with little investment and capital equipment.

Chips industries:

H.E Food Processing Industry spends around Rs 4,800/- for buying of one rolling machine, which is the only equipment owned. They had spent Rs 19,000/- per month for labour cost by hiring 3 females at Rs 3000 each/- and 2 male at Rs 5000/- each.

Jemim Chips employed 4 female and 4 male workers at Rs 6000/- each per month costing them Rs 48,000/- , and the value of equipment cost is Rs 2,15,000/- which includes one

peeling machine(Rs 80,000/-), one packing machine(Rs 1,00,000/-) and one bending machine(Rs 35,000/-).

Joyce manufacturing industry hired three female workers at Rs 250/- for two times a week (Rs 2,000/- each), costing Rs 6,000/- every month. They owned one Electric packing machine worth Rs 3,500/-, and packing kit of Rs 1,200/-, costing them Rs 4,700/- only per month.

LK Special Chana spent Rs 5,075/- for buying of equipment containing 2 large Cooking pans (Rs 1,500-), cooking gas (domestic 3 nos) for Rs 2,775/- and candle for packing at Rs 800/- per month. 3 female workers have been hired for Rs 3,500/- each, costing Rs 10,500/- per month.

Bakery industries:

KC Bakery owned blade machine (Rs 1,50,000/-), gravity Bread Slicer (Rs 60,000/-), oven diesel machine (Rs 80,000/-) and one mincer(Rs 10,000/-), a total of Rs 3,00,000/- for equipment. They hired five female workers and 9 male workers at Rs 8000/- each (avg) and the total labour cost is Rs 1, 12,000/- per month.

Si Co's Donut employed 2 female workers at Rs 200/- per day (Rs 4,800/- each) and the total labour cost Rs 9,600/- per month. One blade machine (Rs 15,000/-) and 2 large cooking pans (Rs 1,000/-) has been used for equipment, costing them Rs 16,000/- value of equipment.

LZ Homemade hired one female for Rs 3000 per month. They owned oven (2nos) of 60 litres and 45 litres for Rs 23,000/-, 1 Blender (Rs 4,500/-) and different types of cake mould at Rs 30,000/- , costing them Rs 57,500/-

Faith Homemade owned an equipment which includes 4 ovens worth Rs 62,000/-), Blender (2 nos) 40 litres and 10 litres at Rs 1, 68,000/-, cake mould (Rs 25,000/-) and one refrigerator (Rs 47,000/-), total of Rs 3, 02,000/-. They employed 2 female at Rs 5000/- each and one male (Rs 7000/-) costing them Rs 3, 02,000/-.

Noodles Industries:

RP Chow spent a total of Rs 16,000/- per month by hiring two female and two male workers at Rs 4,000/- each per month. Their value of equipment cost Rs 1, 20,000/- which contains three Grinding machines, each cost Rs 40,000/-.

ST Chow Industry owned an equipment of two grinding machine (Rs 40,000/- each) costing them Rs 80000/-, and two bending machines at Rs 3,500/- each (Rs 7000/-), a total of Rs 1, 50,000/-. They hired three female workers and two males for Rs 4000/- each per month. The total labour cost per month is Rs 20,000/-.

MC Chow Industry spent Rs 13,000/- for hiring three female workers at Rs 3,000/- each and one male at Rs 4,000/- per month. Their value of equipment is worth Rs 8,83,500/- which contains two grinding machines at Rs 40,000/- each and one packing machine at Rs 3,500/-.

LM Noodles owned equipment worth Rs 1, 20,000/- which are three grinding machines costing Rs 40,000/- each. They spent Rs 1, 60,000/-per month for hiring two female and two male workers each earning Rs 4000/- each a month.

Juice Industries:

Among the juice industry, Rin Rin Juice parlour owned two juicers worth Rs 1, 70,000/- (Rs 85,000/- each) and spent Rs 19,200/- as labour cost by hiring two male workers at Rs 400/- per day.

LR Nimbu hired two male at Rs 350/- per day who worked for five days a week (Tuesday to Saturday) which cost them Rs 14,000/- monthly. They owned one Grinding machine costing Rs 50,000/- and one Juicer worth Rs 8,600/-, a total of Rs 58,600/-.

ZN Nimbu hired two male labourers at Rs 3,000/- per month, costing Rs 6,000/-. They owned two Juicers (Rs 7,000/- each), two large Plastic buckets and 2 plastic cups worth Rs 1,000/-, and four juice strainer at Rs 800/-, costing them Rs 15,800/-.

Tetei Fresh Nimbu owned an equipment worth Rs 17,800/- which contains two large juicer (Rs 6,000/- each), plastic cups and buckets Rs 1,000/-, 3 large strainer for Rs 800/- and five large gallon at Rs 4000/-, they hired two male workers at Rs 5000/- a month and three female workers at Rs 4000/- a month, costing them Rs 22,000/- as a labour charge.

Thus, taken as a whole, chips industry has the lowest value of equipment with Rs 2,29,575/- spent while pickle industry has the highest value worth Rs 12,89,025/-. With respect to employment status Bakery industry spends the highest amount on employment at Rs 1, 41,600/- per month while juice industry spent only Rs 61,200/- per month and secured the lowest rank.

4.8 EMPLOYMENT STATUS (based on monthly rate)

The following table shows the employment status of the selected industries with regards to number of hired labours including male and female workers, wage rates and their working hours per day.

Table 16: Employment status of the industry

Sl.No	Name of the Industry	No. of hired Lab.	M	F	Wage rate		Working hrs.
					M	F	
1	CC Pickle industry	10	4	6	1200	3500	10
2	Chhawkhlei Pickle Industry	3	0	3	0	4500	8
3	KLT Food & Fruit Processing	7	3	4	2880	2880	10
4	MS Pickle	3	0	3	0	3500	8
5	H.E. food processing Industry	5	2	3	5000	3000	5
6	Jemim Chips	8	4	4	6000	6000	7.5
7	Joyce manufacturing	3	0	3	0	1500	8
8	LK Special Chana	2	0	2	0	2000	10
9	K.C. Bakery	14	9	5	8000	8000	6
10	Si Co's Donut	2	0	2	0	4800	9
11	LZ Cakery	1	0	1	0	3000	8
12	Faith Homemade	3	1	2	7000	5000	10

13	R.P. Chow Industry	4	2	2	4000	4000	6
14	S.T Chow	5	2	3	4000	4000	7.5
15	MC Chow	4	1	3	4000	3000	6
16	LM Noodles	4	2	2	4000	4000	9
17	Rin Rin Juice parlour	2	2	0	9600	0	7
18	LR Nimbu	2	2	0	7000	0	7
19	ZN Nimbu Juice	2	2	0	3000	0	6
20	Tetei Fresh Nimbu	5	2	3	5000	4000	8

Source: Primary data collected during June-September 2018

The table reveals the status of male and female employees and their working hours. Among the different types of food processing industries studied, KC bakery has the largest number of employees with 14nos (9 male and 6 females), followed by CC Pickle Industry who hired 10 labourers. LZ Cakery has the smallest number of hired workers with one labourer. Taking as an average it is assumed that each industry hired 3 to 5 labourers.

With respect to working hours, three industries (CC Pickle, LK Chana and Faith Homemade) have the longest working hours for their employee's i.e 10 hours. But during these working hours they used to have two short breaks for relaxing and eating. H.E food processing industry has the shortest working hours with 5 labourers who worked two times a week for five hours each. The average working hours of these industries is around 7-8 hours a day.

With respect to manpower, the number of female workers out weight male workers, such that while there are 52 female workers, the numbers of male workers are 38

At the same time, while most of the industries paid equal wages to the labourers, there are some industries that paid unequal wages to male and female. This shows that in some cases there is a distinction between men and women.

Among all the industries, pickle industry has the largest number of employees with a total of 23 workers. Juice industry has the least number with 11 employees.

4.9 ESTIMATION OF COST (per month)

The estimation of cost has been highlighted in the following table. This includes monthly spent on labour cost, cost of raw materials, miscellaneous expenses, depreciation cost and the total expenses per month.

Table 17: Estimation of Cost

Sl. No.	Name of the Industry	Labour cost (in Rs)	Cost of raw materials	Misc(overhead exp)	Depreciation @0.42%(in Rs)	Total
1	CC Pickle industry	25800	480000	24925	248	530973
2	Chhawkhlei Pickle Industry	13500	360080	15625	2814	392019
3	KLT Food & Fruit Processing	20160	86000	59200	2205	167565
4	MS Pickle	10500	287500	14125	147	312272
5	H.E. food processing Industry	19000	57960	21900	20	98880
6	Jemim Chips	48000	348200	91700	903	488803
7	Joyce manufacturing	6000	54800	10550	18	71368

8	LK Special Chana	4000	24120	4080	21	32221
9	K.C. Bakery	112000	763200	26000	1260	902460
10	Si Co's Donut	9600	84000	12500	67	106167
11	LZ Cakery	3000	21825	6000	242	31067
12	Faith homemade	17000	118900	9000	1268	146168
13	R.P. Chow Industry	16000	174000	9880	504	200384
14	S.T Chow	20000	174000	11780	630	206410
15	MC Chow	13000	174000	7600	350	194950
16	LM Noodles	16000	243600	9580	840	270020
17	Rin Rin Juice parlour	19200	56000	26400	714	102314
18	LR Juice	14000	0	2260	246	16506
19	ZN Nimbu	6000	32000	6000	66	44066
20	Tetei Fresh Nimbu	22000	0	15200	75	37275

Source: Primary data collected during June-September 2018

The above table depicts the estimation of cost based on total expenses. It includes the expenses on labour cost per month, the cost of raw materials used within a day converted into a monthly expenses, miscellaneous cost (overhead expenditure) which mainly includes house rent, electricity bill, water bill, packing charges and transportation (daily expenses of petrol, diesel and the expenses in export/import of food items from other states/within the states, etc). Depreciation cost is also included, based on the survey conducted, reveals that all the sampled units spent around 5 per cent as depreciation cost annually from the value of equipment, this was converted into monthly expenses with around 0.416(taken as 0.42) per cent. Finally the total cost is calculated.

Pickle industries:

With respect to pickle industries, CC Pickle industry spent on labour cost is Rs 25,800/- per month. The raw materials used in a day includes Beef 20kgs costing Rs 350/- per kg, Dry prawns 10kgs (Rs 220 per kg), Banana Flower 1 bag(Rs 1500/-), Ginger 20 kgs at Rs 20per kg, Onion 20 kgs at Rs 35/kg, Garlic 20 kgs at Rs 120/kg, Green Chilli 20 kgs at Rs 50/kg, Dry soya bean 20 kgs at Rs 50/kg, Mock tomatoes 1 bag at Rs 2000/- and Bitter gourd 1 bag at Rs 2000/-, altogether cost an average of Rs 20,000/- daily ,this is converted into monthly expenses costing a total of Rs 4,80,000/-. Under miscellaneous expenses includes House rent for Rs 5,000/-, domestic gas Rs 4,625/- (Rs 925/- unit), plastic packing Rs 12,000/-, Electricity Bill Rs 1,500/-, Water Bill Rs 1,000/- and transportation cost Rs 800/- per month, and the total cost of Rs 24,925/-. For depreciation expenses, this industry spent around Rs 248/- per month. The total cost/ expenses in a month is Rs 5,30,973/-.

Chhawkhlei Pickle industry spent Rs 13500/- per month as labour charge. Raw materials used within a day includes Beef 15kgs at Rs 350/kg, Dry Prawns 10kgs at Rs 220/kg, Banana Flower 1 bag at Rs 1500, Ginger 20kgs at Rs 20/kg, Onion 20 kgs at Rs 35/kg, Garlic 20kgs at Rs 120/kg, Green chilli 20kgs at Rs 50/kg and soya bean 20kgs at Rs 50 per kg, altogether cost Rs 14450/- per day as well as the expenses on cooking oil in a month at16 box (Rs 830/box), altogether cost Rs 3, 60,080/- per month. Overhead expenses includes House Rent at Rs 4000/-, Gas cylinder Rs 4625/-, packing Rs 4500/-, Electricity Bill Rs 1000/-, Water Bill Rs 500/- and transportation cost Rs 1000/-, altogether cost Rs 15,625/-. The value of equipment is Rs 6, 70,000/- under which depreciation cost turns out to be Rs 2,814/- per month.

KLT Food & Fruit Processing industry spent Rs 20,160/- as labour cost. The main raw materials used by this industry are Tamarind, Mango and Sour Plum(Borai) which they used

to purchase in bulk during the month of April and May as they are seasonal crops. They spent Rs 2,40,000/- each in a year for purchasing 200kgs each of tamarind and sour plum, which is then calculated as monthly expenses, costing Rs 20,000/- each while 1 kg cost Rs 100/- each (taken as average). They also used Mango 20 bags per month for Rs 900/- per bag (25kgs). Jaggery is also used under which they spent Rs 7,000/- every week, costing Rs 28,000/- per month. The total cost on raw materials is Rs 86,000/- per month. The overhead expenditure includes House rent for Rs 5,500/-, gas cylinder Rs 22,200/- (Rs 925/- per unit), Packing charge is Rs 1,000/-, they spent less amount on plastic cover for packing than other industry since they purchase directly through wholesaler from Myanmar. Electricity Bill is around Rs 2,000/-, Water Bill Rs 500/-, Transportation Rs 4,000/-, and Fuel wood Rs 24,000/- (2 trip every week which cost Rs 6,000/-), thus a total of Rs 59,200/- is used. The value of equipment is Rs 5, 25,000/- under which depreciation cost covers Rs 2,205/- per month. Thus the sum total of Rs 1, 67,565/- is used as monthly expenses.

MS Pickle Industry spent Rs 10,500/- per month as labour charge. The cost of raw materials is Rs 2,87,500/- per month, and the daily expenses includes Beef 15 kgs at Rs 350/kg, Banana Flower 1 bag at Rs 1,500/-, Mock tomato 50 kgs at Rs 1,000/-, Ginger 20 kgs at Rs 30/kg, Onion 20 kgs at Rs 35per kg, Garlic 20 kgs at Rs 100/- per kg, Green and Dry Red Chillies 20kgs at Rs 50 per kg and Bamboo shoots(seasonal) at Rs 2,000/- , costing around Rs 13,950/- daily, this is converted into monthly expenses (13950 X 20days since the workers worked for only 5 days a week). They also used 10 boxes of cooking oil at Rs 850/- per box costing Rs 8,500/- monthly.

Chips industries:

They are four chips industries studied i.e. HE Food Processing Industry, Jemim Chips, Joyce Manufacturing Industry and LK Special Chana.

HE Food Processing industry spent Rs 19,000/- as labour charge per month. The expenses used daily on raw materials is Rs 2,440/- containing Flour of 10 kgs for Rs 500/-, Besan 15 kgs for Rs 900/-, Papad 6 packets for Rs 240/- and cooking oil 1 box at Rs 800/-, costing Rs 58,560/- in a month. Miscellaneous expenses includes House Rent Rs 1000/-, Gas Cylinder (commercial) Rs 6,000/- (Rs 1,500/- per unit), Gas Cylinder (Domestic) Rs 7,400/- (Rs 925/- per unit), Plastic cover (small size) Rs 4,500/- (avg), Electricity Bill Rs 1,000/-, Water Bill Rs 400/- and Transportation cost Rs 1,600/-, altogether cost Rs 21,900/- per month. The value of equipment is only Rs 4,800/- and the depreciation cost is Rs 21/- per month. Thus the total expenses within a month is Rs 98,880/-.

Jemim chips spent Rs 48,000/- as labour charge per month. For purchasing raw materials, weekly expenses includes Potato 1000 kgs at Rs 30 per kg, Banana 14000 units at Rs 4 per unit (taken as average since the cost of banana varies according to the size like Rs 2 per unit for small size, Rs 4 for medium size and Rs 6/- for large size), cooking oil 1 dozen at Rs 800/-, Spices and salt for Rs 1000/- (average), within a month they spent Rs 3,48,200/-. The overhead expenses includes House Rent at Rs 11,500/-, Gas Cylinder (Domestic at Rs 925/-) for Rs 66,600/-, Plastic cover Rs 5,000/-, Water Bill Rs 600/-, Electricity Bill Rs 3,000/- and Transportation for Rs 5,000/-, altogether Rs 91,700/- per month. The value of equipment is Rs 2, 15,000/- under which depreciation cost spent is Rs 903/- per month. The total expenses thus cost Rs 4, 88,803/- per month.

The labour cost spent by Joyce Manufacturing industry is Rs 6,000/- per month. The cost of raw materials purchase in a day includes Pulses (Chana) 60 kgs for Rs 1,800/- (Rs 30/- per kg), Besan 50 kgs for Rs 2,500/-(Rs 50 per kg), Papad 20 packets for Rs 900/-(Rs 45/- per packet), Muri 100 kgs at Rs 1200/-(Rs 12/- per kg), together cost Rs 12,800/-. Apart from this they used 1 tin of cooking oil every week worth Rs 900/- , costing Rs 3,600/- per month. Altogether they spent Rs 54,800/- per month. For miscellaneous they spent Rs 10,550/- , which includes Gas Cylinder (Domestic at Rs 925/-) for Rs 1850/-, Plastic cover Rs 2500/-, Electricity Bill Rs 800/-, Water Bill Rs 400/-, and Transportation cost Rs 5000/-. The value of equipment is Rs 4700/- which covers the depreciation cost of Rs 20/- (average) per month. The sum total expenses in a month is Rs 71,368/-.

LK Special Chana spent Rs 4000/- as labour cost per month. The cost of raw materials is Rs 24,120/- per month which includes the weekly expenses of Pulses for Rs 2250/- per bag (4 bags per month), Peanuts at Rs 3,500/- per bag(4 bags per month), Salt 1 kg packet at Rs 28/- (5 packets per month),Dry Chilli flakes for Rs 500/- and oil1 litre at Rs 80/- (6 litres per month). Miscellaneous expenses were Shop Rent Rs 480/- (Rs 20/- per day for 6 days a week, the rent was very low since it is a government shopping complex and paid as subsidised rate per day), plastic packet for Rs 2,000/-, Transportation Rs 800/-, Electricity Bill Rs 500/-, Water Bill Rs 300/-, total cost is Rs 4,080/- per month. The value of equipment was Rs 5,075/- under which deprecation cost is Rs 21/- per month. Thus the total estimation of cost is Rs 32,221/- per month.

Bakery industries:

KC Bakery spent Rs 1, 12,000/- for labour cost per month. For raw materials they spent Rs 7, 63,200/- per month which is calculated based on daily expenses. The daily expenses are Flour 8 bags at Rs 1450/- per bag, Eggs for Rs 4,400/- (Rs 110/- per plate), Sugar 100 kgs at Rs 3,600/-(Rs 36 per kg), Oil 8 boxes for Rs 6,800/- (1 box cost Rs 850/-), milk powder and baking powder for Rs 5,400/-. For overhead expenses they spent Rs 26,000/- per month which includes electricity Bill of Rs 10,000/-, Water Bill Rs 1200/-, Plastic cover Rs 4,800/- and Transportation cost of Rs 10,000/-. The value of equipment worth Rs 3, 00,000/- under which depreciation charge cost is Rs 1,260/- per month. Thus the total cost estimation per month is Rs 9,02,460/-.

Si Co's Donut spent Rs 9,600/- as labour charge per month. The cost of raw materials used within a day includes Flour 40kgs at Rs 40 per kg, Sugar 5 kgs at Rs 40 per kg, Milk powder 1.5 kgs at Rs 500, Oil 1 dozen at Rs 900/-, eggs 1 plate at Rs 130/- and coconut Powder 2 kgs at Rs 170/-, thus costing Rs 84,000/- per month. Overhead expenses are House rent Rs 5000/, Plastic cover/package Rs 2,500/-, Electricity Bill Rs 1500/-, Water Bill Rs 800/-, Transportation cost Rs 2,500/-, and Stapler Pin Rs 200/-(avg), the monthly total cost is Rs 12,500/- . The value of equipment is Rs 16,000 and the depreciation expenses is Rs 67/- per month. Thus the total cost is Rs 1, 06,167/- per month.

LZ Cakery spent Rs 3000/- as labour charge. The raw materials used within a month includes Flour 40 kgs at Rs 35/- per kilo, Sugar 5 kgs at Rs 40 per kilo, Milk 5 cases for Rs 3750/- (Rs 750 per case), Butter 15 units for Rs 3300/- (Rs 220/- per unit), eggs & case for Rs 8750/- (Rs 1250/- per case), Cheese 15 units for Rs 1125/-(Rs 75/- per unit), Paneer 10 kgs for Rs 3000 (Rs 300 per kilo), baking soda and baking powder for Rs 300/-, amount to Rs 2,18,25/- per month. For overhead expenses, they spent Rs 6000/- which includes packing Rs 4000 (Brown

paper cost Rs 35 and Rs 45 per unit are used), Electric Bill Rs 1000/-, Water bill Rs 800/- and Stapler Pin Rs 200/-. The value of depreciation is Rs 242/- per month, and the monthly total cost is Rs 31,067/-.

Faith Homemade spent Rs 17,000/- monthly as a labour cost. The raw materials used within a month includes Flour 5 bags at Rs 7,250/-(Rs 1450 per bag), Sugar 5 bags at Rs 13,000/- (Rs 2600 per bag), Milk 5 case at Rs 3,750/-(Rs 750 per case), Butter 5 case at Rs 32,250/- (6450 per case), Eggs 10 case at Rs 11,500/- (Rs 1150 per case), Cheese 5 boxes at Rs 9,900/- (Rs 1980 per box) and Cream 25 units at Rs 41,250/- (Rs 1650/- per unit), thus costing them Rs 1,18,900/- per month. The value of miscellaneous includes packing for Rs 5,000/-, Electricity Bill Rs 3000/-and water bill Rs 1000/-, a total cost of Rs 9,000/- per month. The monthly depreciation cost is Rs 1,268/-, thus total cost amounts to Rs 1, 46,168/- per month.

Noodles industries:

Among noodles industry, RP Chow industry spend Rs 6,000/- on labour cost. Their raw materials include use of 5 bags of flour per day at Rs 1,450/- per bag, total of Rs 1, 74,000/- is used. For overhead expenses they used Rs 9,880/- which includes shop rent of Rs 480/-, the rent cost is low since it is a government market building with a daily rental of Rs 20/-. For electricity bill they spent around Rs 6,000/- and Water Bill of Rs 1,400/-, for transportation they spent Rs 1,800/-(avg) and for purchasing old newspapers they spent around Rs 200/-. Depreciation charge is Rs 504/- per month, the total cost is Rs 200384/-.

ST Chow used Rs 2000/- as labour charge. They used the same amount of raw materials with RP Chow and the miscellaneous expenses includes water bill of Rs 1300/-, Electricity bill at Rs 5000/-, house rent Rs 480/-, transportation cost Rs 1000/-, candles for packing Rs 1000/- and plastic cover at Rs 3000/-, a total of Rs 11,780/- is spent. Depreciation cost is Rs 630/- and the total cost is Rs 20,640/- .

MC Chow used the same amount of raw materials with RP chow and ST Chow, labour charge is Rs 13,000/- and the depreciation cost is Rs 350/- with overhead expenses of Rs 7,600/- including water bill, house rent and packing charge. The total of Rs 1, 94,950/-is used per month.

LM Noodles used Rs 16,000/- as a labour cost. Raw materials used within a day include 7 bags of flour at Rs 1450/- per bag costing Rs 2, 43,600/- per month. They used Rs 9,580/- as overhead expenses and the depreciation charge of Rs 340/- per month, the total cost involved in a month is Rs 2,70,020/-

In terms of cost calculated for all the industries, pickle industry spent the highest amount with Rs 14,02,829/- while juice industry has the lowest cost with Rs 2,00,161/-.

4.10 ESTIMATION OF UNIT COST

The estimation of unit cost was shown on the table which includes the total product per unit, cost of raw materials, overhead expenses, depreciation and the total cost/unit of output. It was calculated based on the number of labourers an industry hired divided by these factors. The estimation of unit cost was calculated to find out the capacity of work/ output one labourer can do within a month.

Table 18: Estimation of unit cost

Sl. No	Name of the Industry	Total product/ unit	Labour cost/unit	Cost of raw materials	Misc(over head exp)	Depreciation	Total cost/unit of output
1	CC Pickle industry	**68880**	**2580**	**48000**	**2492.5**	**24.8**	**121977.3**
2	Chhawkhlei Pickle	**160000**	**4500**	**120026.66**	**5208.33**	**938**	**290672.99**

	Industry						
3	KLT Food & Fruit Processing	**27885**	**2880**	**12285**	**8457**	**315**	**51823.56**
4	MS Pickle	**200000**	**3500**	**95833.33**	**4708.33**	**49**	**304090.66**
5	H.E. food processing Industry	**49920**	**3800**	**11592**	**4380**	**4.2**	**69696.2**
6	Jemim Chips	**240000**	**6000**	**43525**	**11462.5**	**112.87**	**301100.37**
7	Joyce manufacturing	**52800**	**2000**	**18266.66**	**3516.66**	**6.66**	**76589.98**
8	LK Special Chana	**45500**	**2000**	**12060**	**2040**	**10.5**	**61610.5**
9	K.C. Bakery	**85714**	**8000**	**54514.28**	**1857.14**	**90**	**150175.42**
10	Si Co's Donut	**76800**	**4800**	**42000**	**6250**	**33.5**	**129883.5**
11	LZ Cakery	**57910**	**3000**	**21825**	**6000**	**242**	**88977**
12	Faith Home made	**188000**	**5666**	**39633.33**	**3000**	**422.66**	**236721.99**
13	R.P. Chow Industry	**112500**	**4000**	**43500**	**2470**	**126**	**162596**
14	S.T Chow	**90000**	**4000**	**34800**	**2356**	**126**	**131282**
15	MC Chow	**112500**	**3250**	**43500**	**1900**	**87.5**	**161237.5**
16	LM Noodles	**157500**	**4000**	**30450**	**1197.5**	**210**	**193357.5**
17	Rin Rin Juice parlour	**57600**	**4800**	**85000**	**13200**	**357**	**160957**
18	LR Juice	**24000**	**7000**	**29300**	**1130**	**123**	**61553**
19	ZN Nimbu Juice	**48000**	**3000**	**16000**	**3000**	**33**	**70033**
20	Tetei Fresh Nimbu	**28800**	**4400**	**0**	**3040**	**15**	**36255**

Source: Primary data collected during June- September 2018

With respect to the total production per unit, Jemim chips have the largest number of production with Rs 2, 40,000/-, followed by MS Pickle industry with Rs 2, 00,000/-, LR juice have the lowest production with Rs 24,000/- per month. KC bakery secured the highest rank with regard to labour cost, under which they spent Rs 8,000/- per labour, this was followed

by LR Juice at Rs 7,000/- per month. LK Special Chana has the lowest expenses on labour at only Rs 2,000/- per labour.

The cost of raw materials of Chhawkhlei Pickle Industry secured the highest amount at Rs 1,20,026/-, and the least cost by H.E Food Processing at Rs 11,592/- per month.

Miscellaneous (overhead expenses) are mostly between Rs 2,000/- to Rs 3,000/-, among which Jemim Chips top the position at Rs 11,462/- and the least cost amount to Rs 1,130/- used by LR Juice.

The highest depreciation cost incurred is from Chhawkhlei Pickle industry at Rs 938/-, while the lowest cost amounts to Rs 4/- (average) by H.E Food processing industry.

The total unit cost of output was the highest for MS pickle Industry at Rs 3,04,090/- while the lowest cost of output is owned by Tetei Fresh Nimbu at only Rs 36,255/-.

In terms of unit cost, pickle industry secured the top position at Rs 7, 68,564.51/- i.e. out of 23 workers one worker can do a work worth Rs 33,415/- per month, while juice industry has the least unit cost of output at Rs 3, 28,798/-, with 11 workers, therefore the output of work done by one worker is Rs 28,890/-.

4.11 STUDY OF BENEFIT AND COST CONDITION

The estimation of cost-benefit ratio is an important technique used to compare the total costs with its benefits (profits) in monetary units. It enables the calculation of net cost or benefit associated with the business. It can also used to project the potential benefits of investing in the concerned areas of business.

Table 19: Study of benefit and cost condition

Sl. No.	Name of the Industry	Total turn over(sales)	Production cost(lab+raw mat+misc+ dep)	Profit	Profit of cost Profit/prd cost*100
1	CC Pickle industry	**684012**	**530973**	**153039**	**28.8**
2	Chhawkhlei Pickle Industry	**460000**	**392019**	**67981**	**17.34**
3	KLT Food & Fruit Processing	**193600**	**167565**	**26035**	**15.53**
4	MS Pickle	**480000**	**312272**	**167728**	**53.71**
5	H.E. food processing Industry	**225000**	**98881**	**126110**	**127.54**
6	Jemim Chips	**980000**	**488803**	**491197**	**100.49**
7	Joyce manufacturing	**158400**	**71370**	**87030**	**121.94**
8	LK Special Chana	**81200**	**32221**	**48979**	**152.01**
9	K.C. Bakery	**1027200**	**902460**	**124740**	**13.82**
10	Si Co's Donut	**153600**	**106167**	**47433**	**44.67**
11	LZ Cakery	**57910**	**31067**	**26843**	**86.40**
12	Faith Homemade	**564000**	**14168**	**417832**	**285.85**
13	R.P. Chow Industry	**240000**	**200384**	**39616**	**19.77**
14	S.T Chow	**300000**	**206410**	**93590**	**45.34**
15	MC Chow	**307500**	**194950**	**112550**	**57.73**
16	LM Noodles	**550000**	**270020**	**279980**	**103.68**
17	Rin Rin Juice parlour	**112000**	**102314**	**9686**	**9.47**
18	LR Nimbu	**40000**	**16506**	**23494**	**142.34**
19	ZN Juice factory	**60000**	**44066**	**15934**	**36.15**
20	Tetei Fresh Nimbu	**90000**	**37275**	**52725**	**141.44**

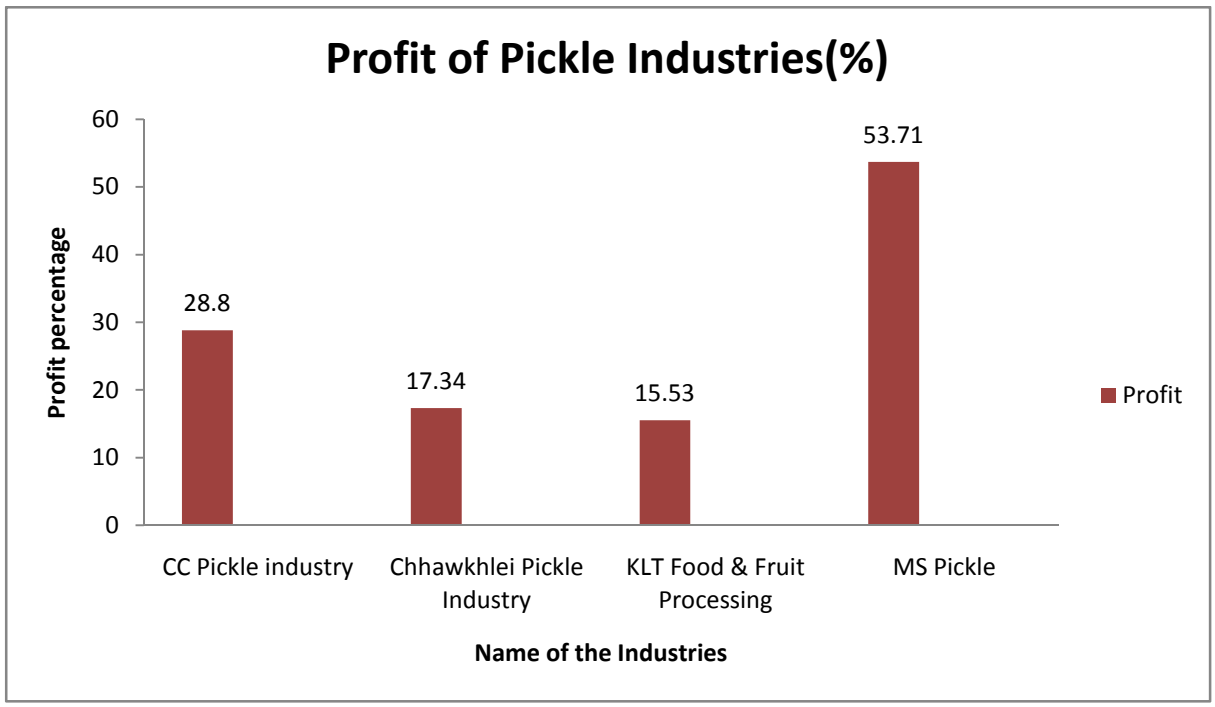
Source: Compiled from Primary Data collected during June- September 2018.

The above table depicts the total turnover (sales) per month, total cost of production which includes cost of raw materials, labour cost, miscellaneous expenses and depreciation charge, and the rate of profit was calculated by subtracting production cost from total sales (profit= total sales –production cost) The rate of profit in percentage term was also calculated by dividing profit with production cost and multiplied by 100. i.e. Percentage of Profit= profit/ production cost X 100.

Pickle Industries:

The sales and profit of Pickle industries which is calculated in percentage terms is shown on the chart;

Figure 4.09: Profit of Pickle Industries



Source: Computed

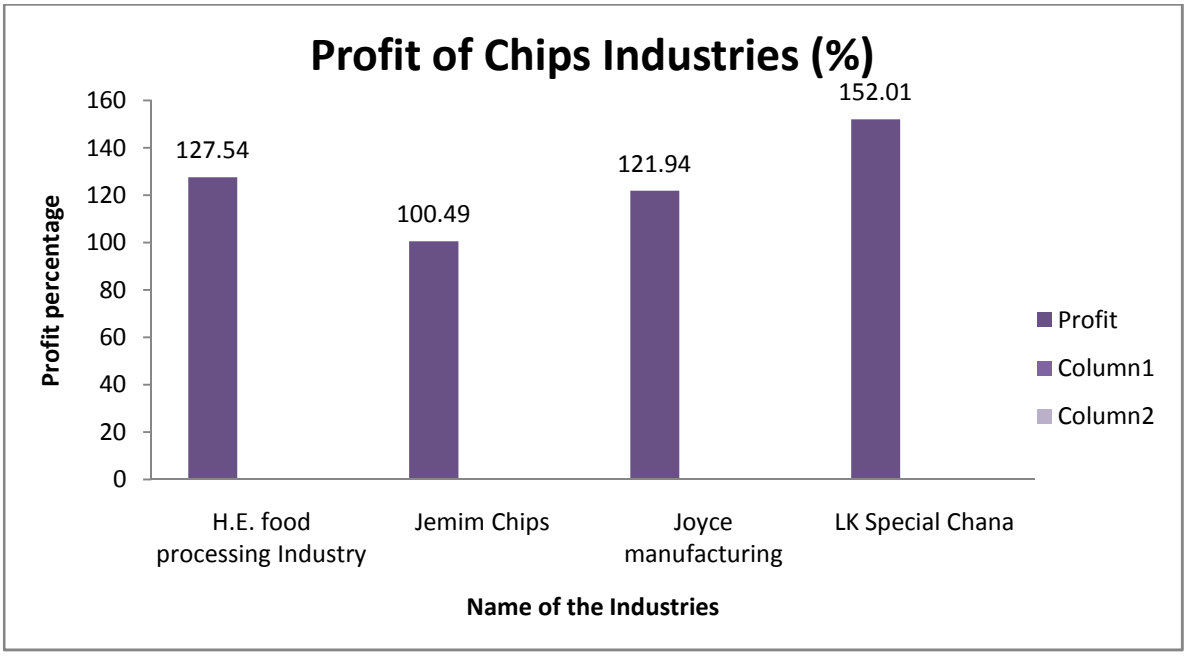
Among all the pickle industries studied, CC Pickle has the largest sales at Rs 6, 84,012/-, at the same time since they used a huge amount for production, their profit was not good

enough (Rs 1, 53,039/-) with only 28.8 per cent. MS Pickle has the highest sales (Rs 4, 80,000/-) and their profit was also the highest at Rs 1, 67,728/- per month with 53.71 per cent. KLT Food and Fruit Processing have the lowest sales and profit with only 15.35 per cent.

Chips Industries:

The sales and profit of Chips industry is shown on the chart;

Figure 4.10: Profit of Chips industries



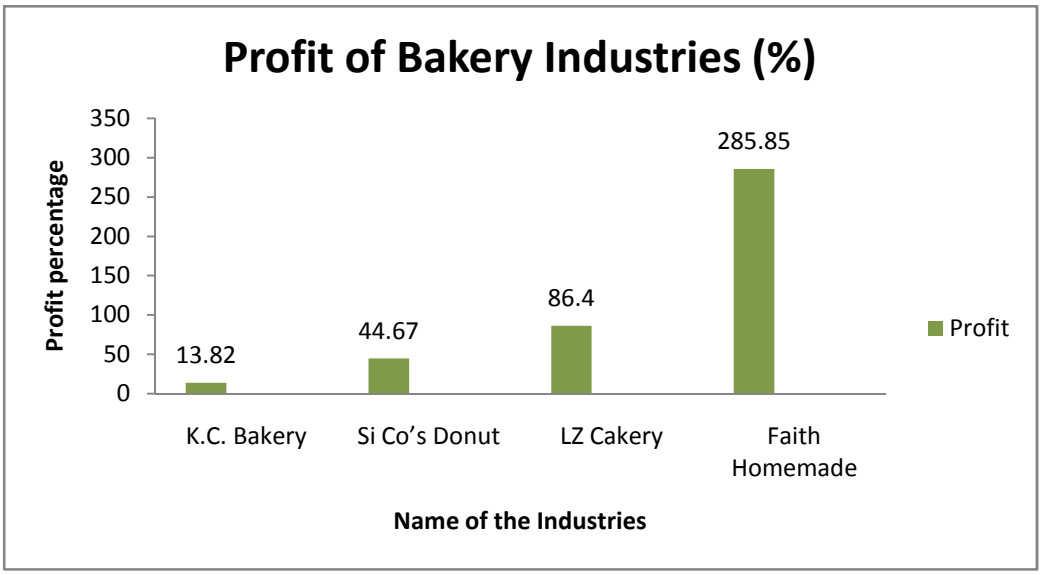
Source: Computed

Among the Chips industry, LK Special Chana have the highest percentage of profit at 152.09 per cent since their sales are higher, at the same time spent less for production cost, thus provide them a good amount of profit (Rs 48,979/- per month). Even though the sale of Jemim chips was the highest, they use a huge amount of money for production cost, thus provides them the lowest profit at 100.49 per cent.

Bakery industries:

The profit earned by bakery industries calculated in terms of percentage is shown below;

Figure 4.11: Profit of Bakery industries



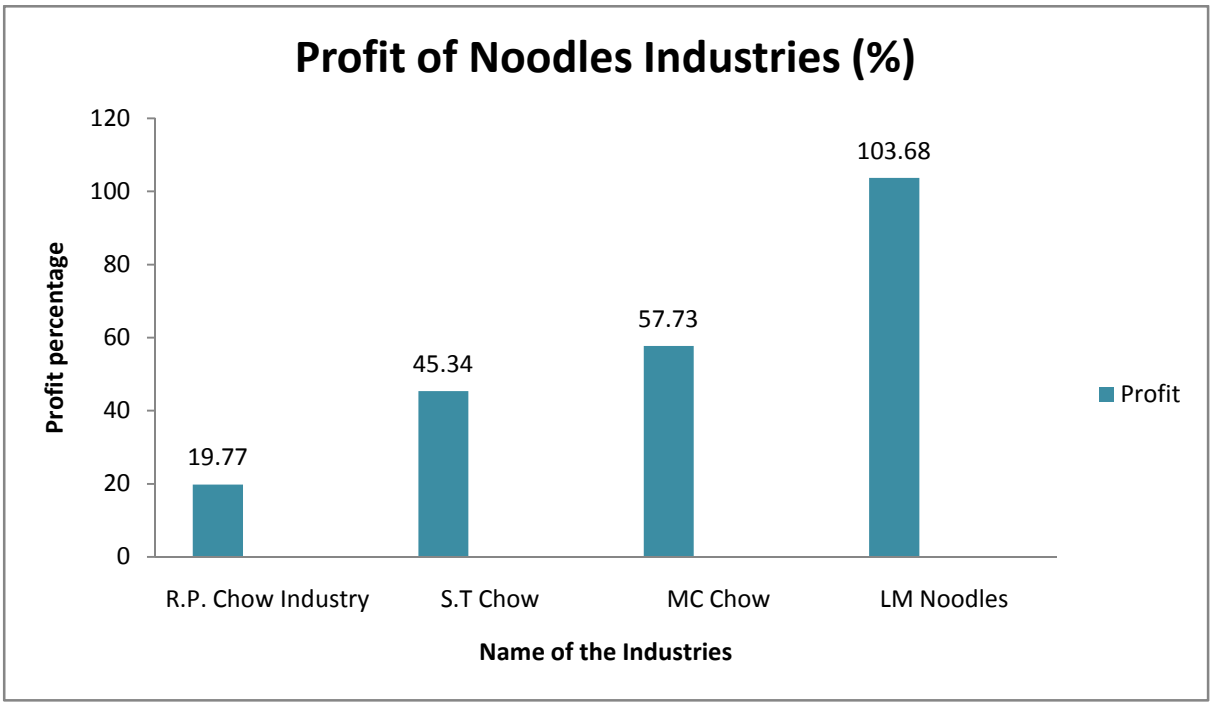
Source: Computed

Among the bakery/ confectionary industry, KC Bakery ranked the highest with total sales of Rs 10,27,200/- in a month, at the same time since their production cost was high, it provide them a lesser profit at Rs 1,24,740/-(13.82 per cent)only. Faith Homemade secured the second largest in sales at Rs 5,64,000/- per month, their production cost was low (Rs 14,168) and this gives them a huge amount of profits i.e Rs 4,17,832/- (285.85per cent), more than thrice the value of sales.

Noodles Industries:

The profit earned by selected noodles industries is shown on the chart below;

Figure 4.12: Profit of Noodles industries



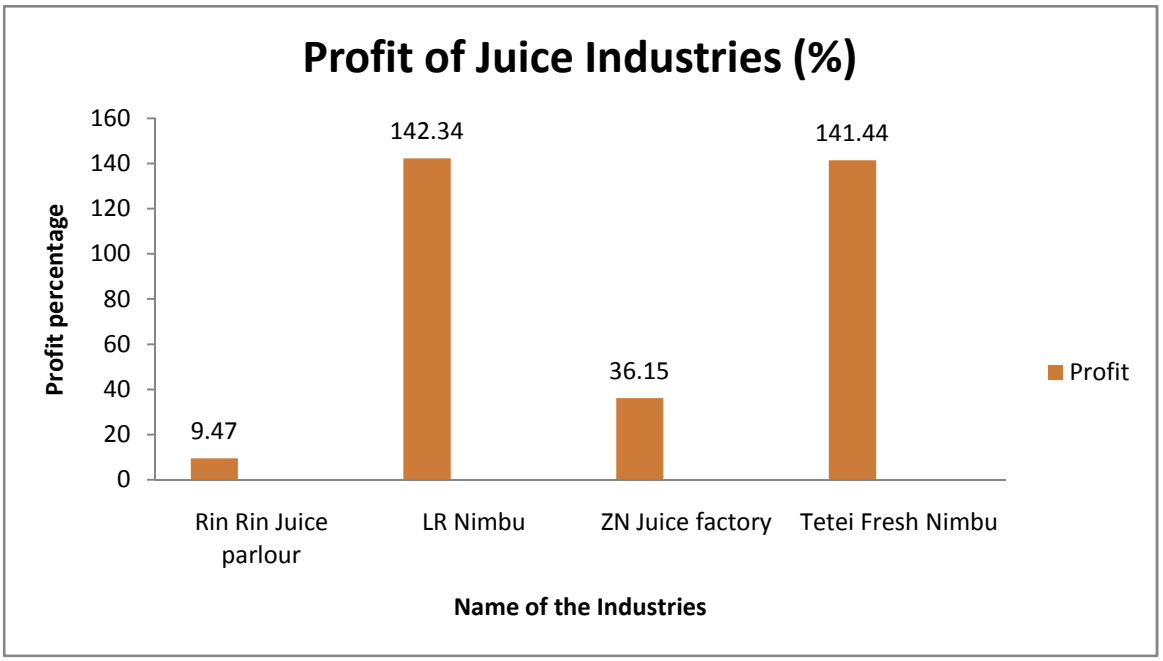
Source: Computed

Among the noodles industries, LM Noodles have the highest value of sales as well as the largest profit at Rs 279980/-(103.68) i.e. more than twice the value of sales. RP Chow Industry has the lowest sales as well as profit (19.77per cent) due to the huge amount incurred for production cost.

Juice Industries:

Below is the profit earned among the juice industries calculated in percentage term:

Figure 4.13: Profit of Juice industries



Source: Computed

Rin Rin Juice Parlour has the highest sales value, but their production cost was high as they wanted to keep the quality/ standard of bottles by using glass bottle instead of plastic which costs them Rs 12/- per bottle (Rs 10/- for the bottle and Rs 2/- for the label). This gives them a lesser amount of profit at Rs 9,686/- only (9.47 per cent) per month. At the same time, LR Nimbu has the lowest number of sales but they use their own product for raw materials, thus provide them a good amount of profit per month at Rs 23,494/- (142.34 per cent)

4.12 TESTING OF HYPOTHESIS

Employment generation is significantly related to the growth of food processing industries.

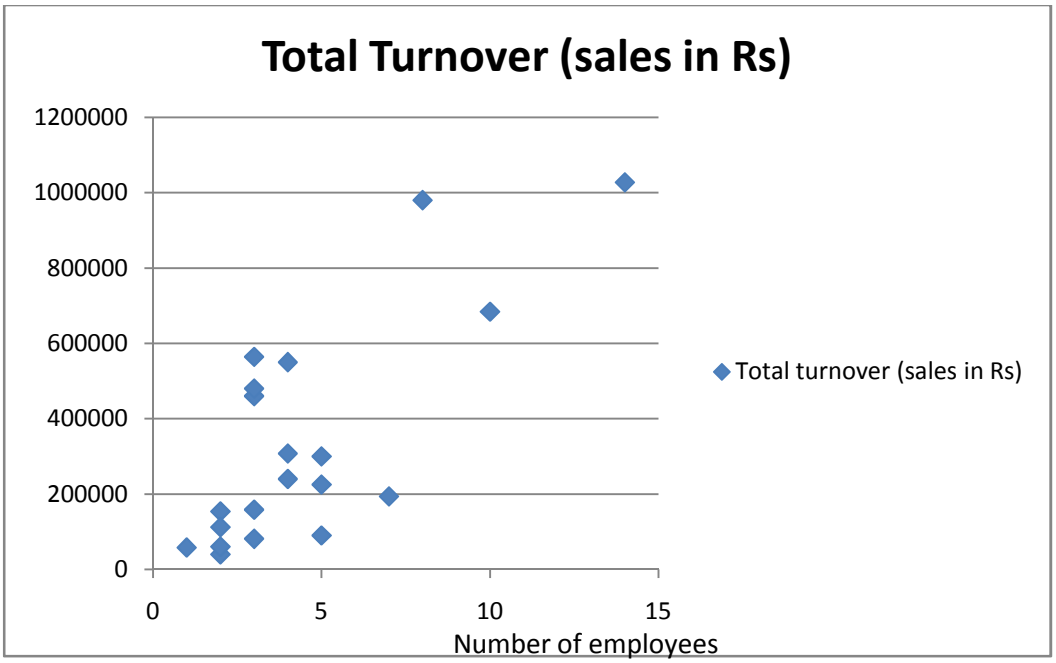
Table 19: Number of Employment and Total Turnover (Sales)

Sl. No	Name of Industry	No of Employment	Total turnover (sales in Rs)
1	CC Pickle industry	10	684012
2	Chhawkhlei Pickle Industry	3	460000
3	KLT Food & Fruit Processing	7	193600
4	MS Pickle	3	480000
5	H.E. food processing Industry	5	225000
6	Jemim Chips	8	980000
7	Joyce manufacturing	3	158400
8	LK Special Chana	3	81200
9	K.C. Bakery	14	1027200
10	Si Co's Donut	2	153600
11	LZ Cakery	1	57910
12	Faith Homemade	3	564000
13	R.P. Chow Industry	4	240000
14	S.T Chow	5	300000
15	MC Chow	4	307500
16	LM Noodles	4	550000
17	Rin Rin Juice parlour	2	112000
18	LR Nimbu	2	40000
19	ZN Nimbu Juice	2	60000
20	Tetei Fresh Nimbu	5	90000

Source: Primary data collected during June- September 2018

The above table highlight the number of employment and the total turnover (sales) per month which can be calculated using co-relation technique for analysing their significant level and their relationship. The table shows that with the increase in the number of employees or when the employees are large in number in each particular industry, the total turnover is higher or increasing at a larger rate.

Figure 4.14: Total turnover of the industries



Source: Computed

The scatter diagram shows the relation between the rate of employment and total turnover per month. The diagram highlight that the average number of employees' ranges between 2 to 5 with only few industries employed more than 10 workers. The rate of total turnover mostly ranges between Rs 1, 00,000/- to Rs 50,000/- while a few industries earn more than Rs 10, 00,000/- per month. Thus the diagram shows the positive co-relation between rate of employment and total turnover. This shows that the total sales and the number of employees are significantly related.

The number of employment and total turnover are the most important indicator to analyse the growth of the industry. Since the rate of total sales and employment shows a positive trend, it reveals that food processing industry has provided ample opportunities for raising income and employment opportunities.

CHAPTER V FINDINGS, SUGGESTIONS AND CONCLUSION

This chapter notes the summary of findings and conclusion of the research. It also gives suggestions for improvement in food processing business within the state.

5.1 MAJOR FINDINGS OF THE STUDY

The findings of the study were:

- **Majority of the promoters were female**: The study revealed that there are more number of female promoters than male in the food processing sector. This shows that many women have been involved in undertaking different businesses to be a bread winner of their family, and this proves that women in Aizawl city have broken economic barriers and are switching to alternative occupations like opening of small shops, involving in business of cottage industries and trading business as compared to existing ones such as piggery, poultry farming etc.

- **Educational level and income:** The study reveals that higher education level does not provide higher income. The highest income earners among the promoters are HSSLC passed while Graduates and Post-Graduates respondents are the one who earned lesser income. This suggests that educational level did not have a positive relationship with income. The study also shows that people are looking for the job/ business that would give them substantial income to raise their standard of living instead of relying on government jobs. At the same time the study proved the existence of underemployment within the area of studies.

- **FSSAI Approval:** Among the 20 industries studied, only 7 units received FSSAI approval and the rest 12 units didn't access to FSSAI certificate even though it is mandatory from the Government to get the food safety certificate for all the industry. This clearly shows the need for more awareness among the masses and also strict legal provisions needed to be undertaken by the government.

- **Utilisation of Capacity:** The study reveals that in terms of capacity utilisation bakery industries has the highest percentage, this may be due to the fact that most of the bakery products especially Cakes, Bread and Donuts are perishable items which needed to dispose/ sell off immediately for consumption. The researcher also notice that three of the four units, i.e Si Co's Donut, LZ Cakery and Faith Homemade prepared/made their products based on order only which makes their utilisation capacity higher than other units.

  Noodles/ Chow making industries have the least utilisation capacity than others because there were a large number of people undertaking the same business in the same area which makes the number of sales lesser than other industry.

- **Production and Sales**: With respect to the total production and sales (in units), three industry among the four bakeries i.e. Si Co's Donut, LZ Cakery and Faith Homemade had the same production and sales since they produce their product based only on order from customers. Joyce manufacturing also had the same production as well as sales since they had their regular agent/ customers who used to purchase the same amount of products. At the same time Jemim Chips had the highest gap in terms of production and sales as most of their employees settled at the industry which makes

their production more and fast thus giving them a huge stock of bulk production for further sales.

- **Calculation of income:** Among the different industry studied, K.C Bakery has the highest income earned per month due to more production with around 80 shops being covered within Aizawl city, and also got the highest number of employees. LR Nimbu has the lowest income since they run their business as a source of additional income and not intended for more sales or income.

- **Capital Investment:** The study reveals that among the selected industries Chhawkhlei Pickle industry has the highest value of equipment since they own a large number of deep freezers to store seasonal crops in bulk for production during off-season which is one of their marketing practices to make more sales and income. Joyce manufacturing has the lowest value of equipment since most of their production required manual work rather than capital equipment.

- **Employment status**: In terms of employment K.C. Bakery spent the highest amount of labour cost since they have the largest number of employees. At the same time LZ Cakery used the lowest amount of cost as they employ only one labour.

  With respect to manpower, the number of female workers out weight male workers, this proves that female participation rate is higher in undertaking the said business. At the same time, while most of the industries paid equal wages to male and female labourers, there are some industries that paid unequal wages. This shows that in some cases there is a distinction between men and women thus somehow violate the labour rights of 'Equal pay for equal work' according to the Equality Act 2010.

- **Calculation of Cost**: With regard to the total expenses calculated, the study reveals that K.C. Bakery has the highest expenses mainly due to higher rate of employment and more use of raw materials. LR Nimbu has the lowest expenses as they use their own raw materials for production.

- **Estimation of unit cost**: The study revealed that M.S Pickle has the highest per unit of cost. The reason may be due to the fact that they made their product in small packages and lesser quantity at lower cost under which the work done by one labour becomes more than other industry. Tetei Fresh Nimbu has the lowest per unit cost as their production was less but employs more labours thus provide them lesser cost.

- **Study of benefit and cost condition:** After calculating the cost-benefit condition for all the industries, Faith Homemade has the highest profit i.e. more than double of the production cost. The main reason was due to higher prices of the product than other items, at the same time charged a lower cost per unit of the product than other bakery, thus giving them more customers than they could handle. Rin Rin Juice Parlour has the lowest profit because they wanted to keep the quality of the product by using glass bottle for packing which cost them a huge sum of money. Apart from this, due to heavy rainfall and floods at Sairang village many of their nimbu trees had been destroyed thus giving them a huge loss in the sales.

From the point of view of five different industries covered, Chips industries have the largest profit, each industry gain almost double of the production cost. This may be due to utilising lesser equipment/ machinery which involves more of manual work and simple tools than large capital investment, thus provide them substantial income and profit.

Pickle industries have the lowest profit because it involves more use of raw materials and equipment cost, also involved more time for the processing compared to other industries, at the same time there were many other promoters doing the same business in and around the city ,this results in lesser sales and lesser profit.

Testing of Hypothesis:

- **Co-relation between number of employees and total sales:** Since r= 0.75704 signifies the high degree of positive co- relation, the study reveals that the number of employment and the rate of total turnover are positively co-related and this proves that with the increase in the number of employees, the total sales also increase which shows that food processing industry has provided substantial income and employment opportunities.

5.2 SUGGESTIONS

- The present study is limited to only one area i.e. Aizawl city. A similar study covering the whole state will be more fruitful, as it will provide an opportunity for business in the processed food sector.
- A comparative study of the food processing industry in different districts of the state may be conducted to assess their performances.
- Regular payment of the wages must be practiced in order to motivate the workers. The study reveals that some of the workers feel discontented due to irregular payment of the wages. This may even affect dedication to their work.

- As consumers are educated and well aware now-a- days, most of them are very health conscious and hence nutritional value, manufacturing and expiry date should be mentioned clearly on the package.
- Advertisement through print and electronic media for sales promotion is highly recommended.
- Good packaging, proper oil content, certification from Governments, food agencies etc should be labelled in the packet to give customers satisfaction and in maintaining the quality of the products.
- Increasing awareness through seminars, workshops, pamphlets etc about the hygiene and quality of food standards should be conducted.
- Organising training and skills of self & employees through experts and exposure to witness other good practices within and outside the state must be conducted for improving the food processing business.
- Business loans/ Bank payments should be provided on simple terms and conditions to producers since the study observed that there is a feeling of discontentment among the beneficiaries regarding bank payments.
- The study reveals that majority of the industry does not applied for the FSSAI approval certificate; thus, there should be legal provisions on part of the government and also mass awareness for the successful implementation of the food safety standards and measures.
- One of the major problems faced by the food processing industry is lack of proper storage/ warehousing facilities. There should be proper storage/ warehousing facilities for storing fruits/ vegetables which can be used for further production. Owning of atleast one generator for each industry is also highly recommended to be used during power disruption.

- The study also suggests using online marketing for promotion of production and more sales.
- Expansion of business through exports of processed food products within and outside the states is also recommended.

5.3 CONCLUSION

Since Mizoram is endowed with various kinds of fruits, vegetables and other agro products there are wide scope of opportunities present in food processing industry. The availability of raw materials, changing lifestyles and increasing standard of living has given great scope for start-up of business in Food Processing sector.

From the study, it has been observed that Mizoram has potentiality in investable projects under food processing industries like the production of juices, jams, pickles, bakery products, chips, etc as they provide an immense opportunity for employment as well as rising income to improve the livelihood of the people.

Food processing industry has emerged as one of the major employment intensive industries which serve as a link between agriculture and industrial segment of the economy.

Recently, agro-based industry board under the Government of Kerala in collaboration with Mizoram Government had signed an agreement to develop the food processing sector in Mizoram. At the same time, under Entrepreneurship Development Programme of the State, an Organic Hub, one of the emerging food processing centres has started in Aizawl in collaboration with producers from Brazil through Angel Promoters Agency, Mizoram. Mizoram University also started taking mentorship on food processing sector and guide the local entrepreneurs through regional conferences, conducting trainings, workshops and national seminars in collaboration with NABARD, Assocham etc.

‘Swasth Bharat Yatra’, a Central Government program for awareness campaign on food hygienic, quality and standards under the FSSAI authority has been started in October 16, 2018 at World Food Day. This program is carried out all over India including Aizawl by conducting ‘Prabhat Pheri’- Gandhi Walk, a cycle rally, by covering different tracks of road across the country.

At the same time, poor infrastructural facilities, bad conditions of road connectivity especially during rainy season, absence of railway system, irregular power and water supply and uncertainties in the procurement of raw materials from outside the state hinders the introduction of high capital intensive method of production in Mizoram. Therefore the need of the hour is to promote the industry through implementation of appropriate policies by the government as well as the private sector enterprises that may help to develop the economy of the food processing sector.

BIBLIOGRAPHY

Acharya S, (2012), 'Pepsi Co India Potato Farming Program in India: India's Food Industry on the Path of High Growth', *Indo-Asian News Service*, Zurich.

Agarwal A.K, (1999), 'Industry of Mizoram', *Economic Planning and Development of North Eastern States*, Kaniska Publishers, New Delhi, pp 28

Agrahar et al, (2006), 'Preparation Techniques and Nutritive Value of Fermented Foods', *Ecol. Food Nutrist*, pp 45:27–38.

Ali Jabir et al, (2007), 'Efficiency and Productivity Changes in the Indian Food Processing Industry: Determinants and Policy Implications', *International Food and Agribusiness Management Review*, Volume 12, Issue 1, pp. 43-66.

Ali M.Z, (2004), 'Absenteeism in Small Scale Industries'*, SEDME Journal*, Volume 31.

Anderson, D, (1982), 'Small Industry in Developing Countries; A Discussion of Issues', *World Development Report*, India, pp. 78.

Ashte,(2013), ' Performance of Food Processing Industry: A case study of Osmanabad District, Maharashtra, *Golden Research Thoughts*, Vol 02, Issue 7.

Assocham,(2017), 'Food Processing Sector: Challenges and Growth Enablers',*Food Processing and Agribusiness*, New Delhi, India.

Baruah R.K, (2000), 'Financing Small Scale Industries', *Gmsons Publications*, New Delhi.

Behera, (2009), 'Agricultural Development and Inclusive Growth in India', *International Journal of Food, Agriculture and Veterinary Sciences*, Vol. 5 (1), pp. 41-52.

Bhattacharya.H., (1994), 'Entrepreneur, Banker and Small Scale Industry', *Deep and Depp Publication*, New Delhi.

Bhavani, T. Roy, D. et al, (2006), 'Structure of the Indian Food Processing Industry: Have Reforms Made a Difference' *International Food Policy Research Institute*, Washington, DC.

Bhuyan, A, (2010), 'India's Food industry on the Path of High Growth', *Indo-Asian News Service,* India.

Birthal P.S, Joshi P.K (2007), 'Smallholder Farmers Access to Markets for High value Agricultural Commodities in India', *Food Policy for Developing Countries*, Case Study 10, cornell.edu

Business Sweden, (2015), 'Opportunities in Indian Food Processing Industry, India', *Cygnus Research*, Government of India.

Carlos.A, (2005), 'Agro-industries for Development', *Food and Agriculture Organisation of the United States,* Unites States

Chadha, G.K., (1993), 'Non-Farm Sector in India's Rural Economy; Policy, Performance and Growth Prospects'*, Research Fellow Monograph Series*, Institute of Developing Economies, Tokyo.

Chakrabarty J, et al (2009), 'Substrate Utilization in Traditional Fermentation Technology Practiced by Tribes of North Cachar Hills District of Assam', *Assam University J Sci Tech: Biol Sci 4*, pp.66–72.

Colney, (1997), 'Small Scale and Cottage Industries in Mizoram', *L.B. Associates*, Aizawl, Mizoram

Das A.J, Deka S.C, (2012), 'Fermented Foods and Beverages of Indian, '*Int. Food Research'*, pp 377–392.

Deloitte, (2009), 'The Future of Global Food System', *World Economic Forum,* Switzerland

Desai B. M. and Namboodiri N.V., (1997), 'Development of Food processing Industries in Andhra Pradesh', *Economic and Political Weekly*, (Dec. 27, 1997 - Jan. 2, 1998):pp.165-171

Devi P, (2012), 'Traditional, Ethnic and Fermented Foods of Different Tribes of Manipur', *Indian J. Tradit Knowledge*, pp 11(1):70–77.

Dewett K.K, (1978), 'Indian Economy' *S. Chand and Co. Ltd,* New Delhi

Dhar P.N. et al (1996), 'The Role of Small Enter rises in Indian Economic Development', *Bombay Asia.*

Directorate of Census Operation, (2011), *Census of India*, Government of India

Directorate of Economics & Statistics, (2009), *Statistical Abstract of Mizoram,* Government of Mizoram

Directorate of Economics & Statistics, (2008-2017), *Statistical Handbook*, Mizoram, Government of Mizoram

Economics & Statistics Division, (2007), *Statistical Diary*, State Planning Institute, Uttar Pradesh

Entrepreneurship Development of India, (2011), 'Manual of Entrepreneurs: Food Processing Industry', *Tata McGraw Hill Education*, 1st Edition.

FICCI, (2017),' Bottlenecks in the Indian Food Processing Industry', *ficci.in*

Gandhi, V., Kumar, G. et al, (2001), 'Agro-Industry for Rural and Small Farmer Development: Issues and Lessons from India', *International Food and Agribusiness Management Review*, pp. 331–344.

Gilliland S.E, (1985), 'Bacterial Starter Cultures For Foods, Boca Raton, Florida' *CRC Press, Inc,* pp. 57–183.

Hoselitz B.F., (1986), 'The Role of Small Industries in the Process of Economic Growth' *Hague, Monton,* Vol VII

Indian Brand Equity Foundation, (2006), 'Food Processing in India', *Confederation of Indian Industry*, New Delhi

Inoeu.K, (1992), 'Industrial Development Policy of India', *Institute of Developing Economies,* Tokyo

Jadhav K.T, (2014), 'A Study of Food Processing Industries in India'*, A Report on Processed Food and Agribusiness: Opportunities for Investment in India*, Mumbai, India.

Jeyaram K et al, (2009), 'Traditional Fermented Foods of Manipur', *Indian J. Tradit Knowledge,* Pp 8(1):115–121.

Kalia, M., (2003), 'Food Processing: Growth, Status and Prospects', *Indian Council of Agriculture Research*, New Delhi.

Khan R.R., (2004), 'Labour Policies of Small-Scale industries in Maharashtra', *S.Chand & Co.Ltd*, New Delhi, India

Khayat M.,(2015), 'Factors Affecting Technology Transfer in the Food Processing Industry in Republic of Philippines'*, International Animal Industry Vision 2020, Future of Indian Dairy Industry*, Karnal, Haryana, India.

Kulkarni P.R., (2001), 'Financial Structure for Backward Area Development', *SEDME Journal,* Volume 28

Kunda K.K, (2003), 'How to start a Small Scale Industry', *Laghu Udyog Samachar*, April-September 2003, pp 78

Lalthanpuii P.B et al, (2009), 'Traditional Food Processing Methods in Mizoram', *North-East India, Sci Vis 9*, pp.18–194

Leal P.F, et al, (2003), 'Functional Properties of Spice Extracts', *J. Agric Food Chem,* Pp 2520–2525

Leistner L, (1995), 'Stable and Safe Fermented Sausages World-Wide, Fermented Meats', London Blackie Academic and Professional, pp. 160–175.

Lokesh Koul, (2009), 'Methodology of Educational Research', *Vikas Publishing House Pvt Ltd,* New Delhi

Lueck F, (1980), 'Antimicrobial Food Additives', *New York NY Springer-Verlag*, Pp. 41–45

Machini, (1999), 'Role of Agro-based Industries in Rural Development: A case study of Nyansiongo Tea Factory in Borabu Division, Nyamira District,Kenya', *jstor.org*

Mao A, (2007), 'Traditional Fermented Foods of North Eastern India', *Indian J. Tradit. Knowledge*, pp 6(1):37–41.

McKinsey, (2010), 'The Importance of the Food Sector in India, Marketing of Fruits and Vegetables in India', *Indian Journal of Research 3*, pp. 9-20.

Merchant, A. (2008),' India-Food Processing Industry', *OSEC Business Network*, New Delhi.

Ministry of Food Processing Industries, (2012), 'Data Bank on Economic Parameters of the Food Processing Sector', *Ministry of Commerce, Government of India*, New Delhi.

Ministry of Food Processing Industries, (2016), 'Investment Environment & Opportunity for Food Processing Sector: Mizoram', *MOFPI Annual Report.*

Ministry of Food Processing Industries, (2015),' Scope and Potential of Food Processing industries in the States of Assam, Mizoram and Tripura', *shodhganga.inflibnet.ac.in*

Ministry of Small Scale Industries, (2004-2005), *Annual Report*, Government of India, New Delhi

Mishra et al, (1990), 'Sickness in Small Industries: A Case Study', *Yojana*, Vol. 34, No. 5, March 16-31, Pp. 9.

Mizoram Food Processing Industries, (2017), Government of Mizoram, *Khadi & village Industries,* kvic.org

MOFPI, (2016-2017), 'Annual Report, Government of India', *mofpi.nic.in*

*MOFPI, (2008), '*Value Chain in Food Processing Industries'*, mofpi.nic.in*

Murthy K.S (2011), 'Problems of Fruit Processing Industry in Andhra Pradesh', *International Journal of Research in Commerce and Management*, Volume 2, Issue No 5

Murthy, (2005), 'Institutional Finance for the Development of Small Scale Industry in Karnataka, *Southern Economist*

NABARD, (2012), 'Problems of Village Level Food Processing Industry in India', *Ministry of Food Processing Industries, Government of India,* nabard.org

Namboodiri N.V, (1992), 'Development of Food-Processing Industries', *Economic and Political Weekly*, Vol. 27, No. 13, pp. A37-A42.

National Horticulture Board, (2011), 'Area and Production Estimates of Horticulture Crops',

Report of Indian Brand Equity Foundation (IBEF)

Nehal N, (2009), 'Study on Employment Generation of Food Processing Industry in India', *Int. J. Agric, Food Sci. Technol*, pp4 (5):401–414.

Nongdam P, (2014), 'The Nutritional Facts of Bamboo Shoots and their usage as important Traditional Foods', *Int. Sch. Res. Not*, Article ID: 679073

Noonari Sanaullah, (2015), 'Performance of Pickle Production Processing and Marketing in Sindh, Pakistan', *Survey on Challenges in Food Processing Sector*, Mumbai, India.

NPCS, (2012), 'Handbook on Agro Based Industries (2nd Revised Edition)', *NIIR Project Consultancy Services*, New Delhi.

Narayan D.L, (1980), 'Employment Genration through Small Scale Village and Cottage Industries' *Planning for Employment*, Bangalore, Sterling.

Ockerman H.W, Basu L,(2008), 'Fermented Meat Products: Production and Consumption' *Handbook of Fermented Meat and Poultry,* Oxford UK, Blackwell Publishing Ltd, pp. 47–68.

Pandit.V., (1994), 'Trade Policies and their impact on Small Scale Enterprises in India', *shodhganga.inflibnet.ac.in*

Pati & Halder, (2011), 'Problems of Supply Chain Management', *CSIR-National Institute of Science, Technology and Development Studies*, Pusa Gate, KS Krishnan Marg, New Delhi, India.

Project Consultancy Service, (2013), 'Food Processing Industry in India', *niir.org.*

Puri, R. and Tajinder , (1987), 'Nutritive Value and Consumption Pattern of Processed Foods', *Indian Food Packer*, Vol. 43, No. 5, pp. 49-53.

Rais Mohammad, (2013),'Analysis of Food Processing Industry in India, Skills and Employment Opportunities', *National Monthly Referred Journal of Research in Commerce &Management 1*, pp. 40-57.

Rao,K.P. et al(2003),'Strategic Assessments and Development Pathways for Agriculture', *International Crops Research Institute,* Patancheru, Andhra Pradesh, India.

Rathakrishnan, L. and Sriraman, V.P., (2014), 'Indian Food Processing Industry – A Snapshot', *Research Gate*, New Delhi.

Sarangi Prashant(2014), 'Indian Food Processing Industry: Challenges and Opportunities', *Supply Chain Management in Vegetables, Indian Journal of Research 3*,pp. 315-316.

Saravan, S. and Mohansundaram, V. ,(2013), 'An Analysis of FDI in Indian Food Processing Industry'*, Indian Journal of Applied Research*, Vol. 3, Issue 3, March, pp. 80-81.

Sarkar S,(2008), 'Technological capability of Food Processing Industry'*, Indian Journal of Agricultural Economics,* pp.50.

Satyanarayana.T., (2009), 'Financing of Small Scale Industries, *Himalaya Publishing*, Mumbai.

Scheme, (1992), 'A Study of National Small Industries Corporation', *Singhai Mojilal and Sons,* Jabalpur, p.25.

Selvaraj, (2015) 'A Study on the Development of Food Processing Industry in Tamil Nadu', *Food & Nutrition Journal*, Peer Review Process Journal.

Sharma, V. P. and Jain, D., (2011), 'High-Value Agriculture in India: Past Trends and Future Prospects'*, The New wave, Food and Beverage Tech,* Maharastra.

Sharma Neeraj,(2010), 'Farmers Development Program in the State of Punjab', *India-Food Processing Industry,* OSEC Business Network, New Delhi, India.

Sharma, S.V.S, (1999), 'Small Entrepreneurial Development in Some Asian Countries: A Comparative Study', *Light and Life Publishers*, New Delhi.

SIDBI, (2011), 'A Manual for Entrepreneurs: Food Processing Industry', *Researchgate.net*

Sidhu.S.M, (2005), 'Fruit and Vegetable Processing Industry in India: An Appraisal of the Post-Reform Period', *Economic and Political Weekly*, Vol. 40, No. 28, pp. 356-361.

Singh A, et al, (2007), 'Cultural Significance and Diversities of Ethnic Foods of North East India', *Indian J. Tradit Knowledge*, pp.6 (1):79–94.

Singh K.Anoop, (2014), 'Development Trends of Food Processing Sector in India', *CSIR-National Institute of Science, Technology and Development Studies*, KS Krishnan Marg, New Delhi, India.

Singh, Surendra P, Enefiok et al, (2012), 'The Food Processing Industry in India: Challenges and Opportunities', *Journal of Food Distribution Research*, Volume 43, Issue 1.

Singh S.P (2010), 'A Potential Export Destination for Products from Northeast India', Jaipur:*CITEE,* pp.16–18.

Sinha, (1992), 'Small-Scale Fruit and Vegetable Processing: Dynamics of Development', *Economic and Political Weekly,* Vol. 27, No. 26, pp. A93-A99.

Surendra,(2012), 'The Food Processing Industry in India: Challenges and Opportunities', *J Food Process Technology 4*, pp.260.

Tamang J.P, (2014), 'Non-Fermented Ethnic Foods in India', *J. Ethnic Foods*, pp 29–33.

Tamang B, (2009), 'Traditional Knowledge of Bio Preservation of Perishable Vegetable and Bamboo Shoots in Northeast India as Food Resources', *Indian J. Tradit. Knowledge*, pp 89–95.

Thilaka, (1998), 'A Study on Financing Select Small-Scale Industries by Commercial Banks in Tamil Nadu', *Deep and Depp Publication*, New Delhi.

Thillainayagam, (2006), 'Small- scale industries and World Trade Organization', *Small Industries Research Institute*, New Delhi.

Verna S.P, (2006), 'Practical Approach to Research Methodology', *Akansha Publishing House,* New Delhi.

Vinod. D, (2003), 'Development through Khadi and Village Industries' *Yojana*, October 2003.

World of Food India,(2011), 'The Food Processing Industry in India', *Annapoorna- World of Food India*, 6th Edition.

Zaika L.L, (1978), 'Effect of Spices and Salt on Fermentation of Lebanon Bologna-Style Sausages', *J. Food Sci*, pp 186–189.

Zebib H, et al (2015), 'Properties of Sesame *(*Sesamumindicum L) varieties grown in Northern Area, Ethiopia', *Agric. Sci*, pp 238–246.

Appendix-1:

INTERVIEW SCHEDULE

Common questions asked during interview schedule that was held between June-September 2018.

1. Name of the Industry

2. Type of Industry

3. Types of Product

4. Year of Establishment

5. Name of the Owner/ Proprietor/ Promoters

6. Age

7. Education Qualification

8. Address

9. Number of family members

10. Is the Industry registered under DIC/KVIC?

11. Is the industry approved by FSSAI/ISO?

12. Does he/she receives any financial assistance from the government?

13. If yes, what type of assistance do you get?

14. Does he avail any loan from the bank for his business?

15. If yes, then which bank?

16. Source of raw materials?

17. If it is own product, then how much is the daily/weekly average production?

18. If the raw materials are purchased, then how much is spend in a day/week/month?

19. Cost of raw materials purchased (per Kg/litres/ml/unit etc):

20. Value of machinery used (in Rs):

21. Value of finished product produce by labours in a day:

22. Daily income/ monthly income (average):

23. Places of undertaking business?

24. Wholesale rate of the product (per Kg/Litres/Unit etc) and the market price:

25. Is there any export of the product?

26. If yes, then which place?

27. Daily/weekly/monthly average export?

28. Are there any time of the year in which the sales are maximum/ minimum?

29. Usage of vehicle for undertaking business?

30. If yes, then what type of vehicles?

31. Are there any employees?

32. If yes, how many employees?

33. Monthly wages of the employees?

34. Number of male employees?

35. Number of female employees?

36. Working hours of employees in a day?

37. Are the workers working in full time or part-time?

38. Does he/she own a house/shop or rent a house for undertaking business?

39. If it is rented, then how much is the monthly rental charge?

40. Is there a regular maintenance of business record?

41. Do you find your business profitable enough to earn a living?

42. Do you have any plans for further business expansion in a near future?

43. If yes, in what way do you plan to expand it?

44. Any problems faced in undertaking the business?

45. In what ways do you spend your earnings?

46. Any award/ recognition receive from the Government/ NGO's etc?