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RSDC
RUBBER SKILL DEVELOPMENT COUNCIL

SKILL GAP ANALYSIS

RAJASTHAN

Chapter Scheme

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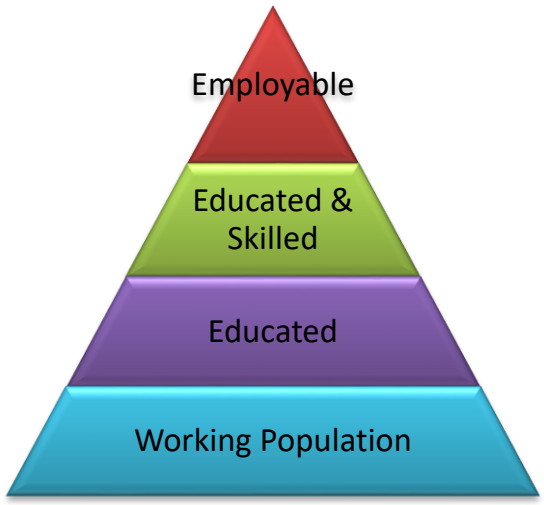
INTRODUCTION

Let's begin the challenging issue of skill gap prevalent in the industry by first understanding the concept of skill, its importance for an individual and the society, the relevance of skill development and the meaning of skill gap in the current scenario. An ability and capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carry out activities or job functions involving ideas, things and people is how we may define *Skill* in the industrial set up. Skill has the power to break the vicious circle of poverty as it empowers an individual to become economically independent. *Skill converts a human into a human resource*. Presently, our country faces a dual challenge of paucity of highly trained workforce, as well as non-employability of large sections of the conventionally educated youth, who possess little or no job skills. Therefore, if we have to promote the development of our country then we should focus on skill development.

A1. Indian Economy: Status and Requirement

Why acquiring skill or skill development is so important for our economy? Today, India is one of the youngest nations in the world with more than 62% of its population in the working age group (15-59 years), and more than 54% of its total population below 25 years of age. Its population pyramid is expected to "bulge" across the 15-59 age group over the next decade. It is further estimated that the average age of the population in India by 2020 will be 29 years as against 40 years in USA, 46 years in Europe and 47 years in Japan. In fact, during the next 20 years the labour force in the industrialized world is expected to decline by 4%, while in India it will increase by 32%. This poses a formidable challenge and a huge opportunity. India needs to equip its workforce with employable skills and knowledge so that they can contribute substantively to the economic growth of the country. It is extremely important to work towards creating a skilled workforce to reap the demographic dividend. However, skills need to be an integral part of employment and economic growth strategies to spur employability and productivity.

Fig 1.1: Workforce Pyramid



The country, however, has a big challenge ahead as it is estimated that only 4.69% of the total workforce in India has undergone formal skill training as compared to 68% in

UK, 75% in Germany, 52% in USA, 80% in Japan and 96% in South Korea. While the debate on the exact quantum of the challenge continues, there is no disputing the fact that it is indeed a challenge of formidable proportion.

In addition, the number of people who enter the work force age group every year is estimated to be 26.14 million. Assuming an average labour participation rate of 90% (male) and 30% (female), at least 16.16 million persons will enter workforce and they all, except those opting for higher education, need to acquire skills. This will add another 104.62 million persons to be skilled in the next 7 years. Thus, it can be seen that 104.62 million fresh entrants to the workforce over next seven years (by 2022) will need to be skilled. In addition, 298.25 million of existing farm and nonfarm sector workforce will need to be skilled, reskilled and upskilled. Thus, appropriate measures required to be taken keeping in view sheer numbers, sectoral division and spatial disbursal not only across the country but possible requirement in other parts of the world.

Moreover, with the increasing participation of women in the workforce in India, Skill development programmes should focus on both male and female before any imbalance emerges on gender count. In recent times, government's emphasis on skill development has received a big push in the country. A broad outline of the recent government initiatives is presented in the next section.

B1. Skill India

The main goal is to create opportunities, space and scope for the development of the talents of the Indian youth and to develop more of those sectors which have already been put under skill development for the last so many years and also to identify new sectors for skill development. The new programme aims at providing training and skill development to 500 million youth of our country by 2020, covering each and every village. Various schemes are also

Fig 1.2: Skill India

proposed to achieve this objective. The emphasis is to skill the youths in such a way so that they get employment and also improve entrepreneurship. The mission covers training, support and guidance for all occupations that were of traditional type like carpenters, cobblers, welders, blacksmiths, masons, nurses, tailors, weavers etc.

More emphasis will be given on new areas like real estate, construction, transportation, textile, gem industry,

jewellery designing, banking, tourism and various other sectors, where skill development is inadequate or nil.

The training programmes would be on the lines of international level so that the youths of our country can not only meet the domestic demands but also of other countries like the US, Japan, China, Germany, Russia and those in the West Asia. Another remarkable feature of the 'Skill India' programme would be to create a hallmark called 'Rural India Skill', so as to standardise and certify the training process.

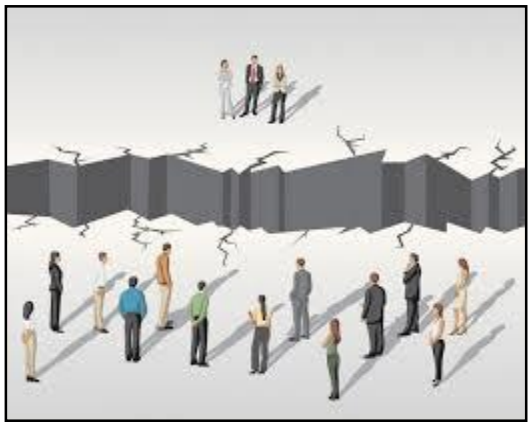
Tailor-made, need-based programmes would be initiated for specific age groups which can be like language and communication skills, life and positive thinking skills, personality development skills, management skills, behavioural skills, including job and employability skills. The course methodology of 'Skill India' would be innovative, which would include games, group discussions, brainstorming sessions, practical experiences, case studies etc.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship scheme of the Ministry of Skill Development & Entrepreneurship (MSDE). The objective of this Skill Certification Scheme is to enable a large number of Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood. Individuals with prior learning experience or skills will also be assessed and certified under Recognition of Prior Learning (RPL). Under this Scheme, Training and Assessment fees are completely paid by the Government.

C1.Skill Gap and its Analysis

Different types of skills are required in the manufacturing units for various job roles. However, before we move on to skill development, it is extremely important to understand the existing skill gap in each of the sectors. Let's take a note of what do we mean by skill gap. Here it is noteworthy that we first need to define the skills required to perform a specific job role and then highlight the gap. The difference in the skills required on the job and the actual skills possessed by the employees is referred to as S*kill Gap*.

Fig 1.3: Skill Gap



Skill Gap is prevalent across various job roles in different segments of the industry. Efforts in the skill landscape have been largely devoid of industry/employer linkages until the last few years. This has created gaps in terms of sectoral need and availability, competency required by employer and those possessed by a trainee etc. Placement of trainees has consequently

suffered. At first, there is a need to define their skills requirements, and training methodology, commitments in terms of increased remuneration to skilled workers also need to be made by them. This is necessary to create economic incentive for skilling, and for industry to realize the productivity gains linked with skilled manpower.

To address the skill gap, the availability of good quality trainers is a major area of concern. There is a lack of focus on development of trainer training programmes and career progression pathways for trainers have also not been defined. To outline the skill requirement, the skill gap analysis is undertaken. In other words, Skill Gap Analysis for the various job roles in the industry helps achieve the following objectives:

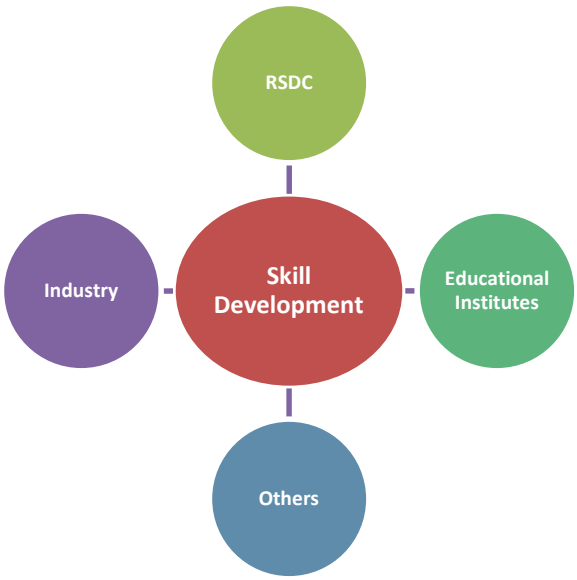
- Helps to define the skills required in the industry at present and in future
- Make employees aware about the critical skill they will need to develop/learn
- Helps in recruitment effort when current employee do not possess the required skills for the specific job role

Skill Gap Analysis has covered the organized segment of the industry, whereas a large number of manufacturing units are operating in the unorganized segment. One of the biggest challenges of skill development in our country is that 93% of the workforce is in informal/unorganized sector. Consequently, it is difficult to map existing skills in the unorganized sector and gauge the skilling requirement in the sector. On the other hand, the rate of job growth in informal sector is estimated to be twice that in formal sector.

D1. Skill Development

Different states in India face varied challenges in relation to demographics and skill development. There needs to be a shared sense of urgency to address the challenges of the changing demography. Skills development is the shared responsibility of the key stakeholders viz. Government, the entire spectrum of corporate sector, community based organizations, those outstanding, highly qualified and dedicated individuals who have been working in the skilling and entrepreneurship space for many years, industry and trade organizations and other

Fig 1.4: Stakeholders



stakeholders. The challenge of human resource requirements of the country will be addressed by aligning the supply and composition of skilled workers with demand. This will ensure that the supply of skilled workforce is relevant to projected needs and can be easily absorbed into the job market.

In this report, the focus is on the skill requirement of the rubber industry in Indian context. We concentrate on the quality of the available manpower, skill deficiencies leading to the skill gap, emerging trend for industry expansion and skill requirement in the rubber sector. Before we take up the skill gap analysis in the rubber industry in the western state of India, let's have a look at the trends in rubber industry in the state in focus, i.e. Rajasthan covering main indicators of state economy, rubber manufacturing units, rubber consumption etc.

STATE IN FOCUS

The chapter focuses on the general economic conditions of the state, an overview of rubber industry in India, status of rubber industry in the state in focus and its growth in the recent past. Normally, the overall development of the various sectors in the state reflects on to the growth of the specific segment of economic activity. Here, we will take a note of economic development of the state and various aspects of rubber industry in the state. Rajasthan is not a traditional rubber growing region of the country; therefore it does not offer much to study and analyze the production side of the commodity which serves as the basic raw material for the rubber product manufacturing. However, it is interesting to look at the consumption pattern over the period to highlight the developments in the rubber industry in the state in focus.

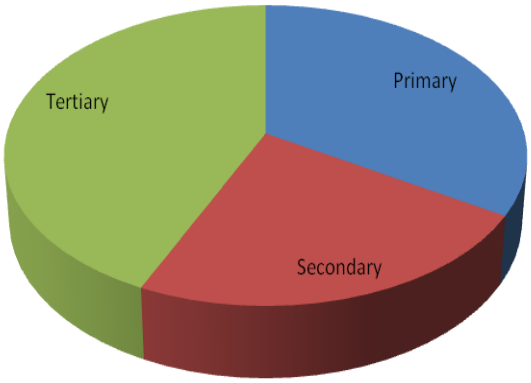
A1.State Economy

Located in the western India, the state of Rajasthan with over 68 million inhabitants is the largest state of the country by area. However, the population of Rajasthan is not as huge as compared to some of the other big states in the country. This also reflects in the fact that the density of the state is about 200 which is much less than the national average of 382. India's largest state is primarily an agricultural and rural economy. Majority of the population resides in villages, whose main occupation is agriculture. Industrial development is mainly concentrated in select districts such as Jaipur, Udaipur and Jodhpur.

Fig 2.1: Largest State: Rajasthan

The state is bounded on the west and northwest by Pakistan, on the north and northeast by the states of Punjab, Haryana, and Uttar Pradesh, on the east and southeast by the states of Uttar Pradesh and Madhya Pradesh, and on the southwest by the state of Gujarat. The state has a decadal population growth rate of 21.3 percent which is above the national average of about 17 and thus the population of the state is rising considerably given the progress in the state. The literacy rate in the state is 66% which is lower than the national average and therefore it is an area where the state will have to work on to improve in the future. One of the other aspects that the state will have to look at is the sex ratio that stands at 928 and below the national average.

Fig 2.2: Share of Major Sectors of the Economy



The performance of the economy measured in terms of state gross domestic product shows that the economic growth of the state remained lower than the all India growth during last five years. The state economy has witnessed an improvement year after year in the recent past. The primary, secondary and tertiary sector contribute 32 percent, 22 percent and 41 percent respectively. Looking at the contribution of secondary sector in the SGDP (at current prices), it has been observed that the share has witnessed a decline of 6 percent (from 33 percent to 27 percent) during last seven years. Rajasthan had inherited poor status in respect of development of industries. Hence, to boost up the economy of the State through planned development, both the State Government and the private sector are making sincere and dedicated efforts for speedy development of various type of Industries, since the very beginning of five year plans. "Make in Rajasthan", the endeavor for industrial accretion in the State, has emerged on the same ground of industrial revolution, the "Make in India" in the country.

Agriculture and allied sector continues to be the backbone of the State's economy. 75 per cent population of the State resides in the rural areas and about 62 per cent depend on agriculture and allied activities for their livelihood.

Table 2.1: State of Growth

Year	GSDP (at constant prices)	Growth Rate (%)
2011-12	436465	
2012-13	454987	4.24
2013-14	482605	6.07
2014-15	512095	6.11
2015-16	..	..

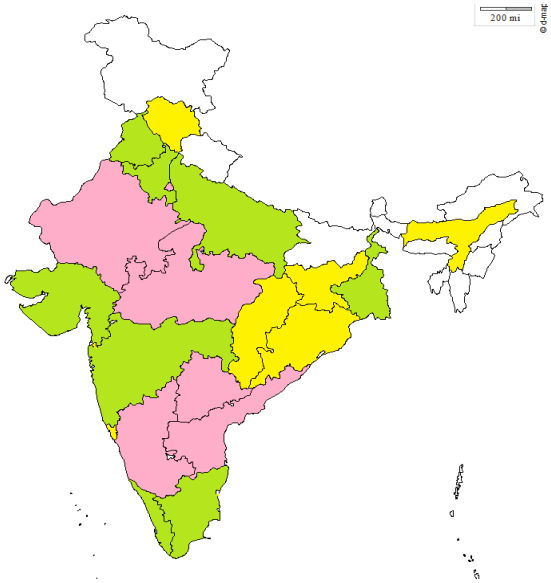
Source: CSO
GSDP in Rs crores at 2011-12 prices

A2.Rubber Industry in India

In India, there are approximately 6000 manufacturing units producing a wide range of rubber products operating across 24 states and 4 union territories (according to the registered units with Rubber Board). However, there are thousands of unregistered firms engaged in production different rubber products throughout the country. The rubber goods manufacturing industry includes large capital owned automotive tyre sector and small capital based non-tyre sector consisting of majorly in Micro, Small and Medium Enterprises (MSME). Unlike tyre industry which represents an organized segment of rubber

manufacturing in our country, the production of non-tyre rubber products takes place in the organized as well as unorganized sector. The highest number of rubber product manufacturing units exists in Kerala, followed by Uttar Pradesh and Tamil Nadu. The map represents the presence of large (green colour), medium (pink colour), low (yellow colour) and negligible (white colour) number of rubber product manufacturing units in India. Rajasthan falls under the medium category in this industrial segment.

Fig 2.3: Rubber Industry Concentration in India



The total turnover of the Indian rubber industry is estimated around thousand crores. Among the various rubber product segments in the country, there are large number of firms involved in manufacturing of moulded and extruded goods, tread rubber products, footwear, dipped goods and adhesives. In the production of a wide range of rubber products, natural, synthetic and reclaim rubber is used in the industry.

Natural rubber consumption is at the top position followed by synthetic and reclaim rubber. Two third of the rubber consumption is attributed to the tyre segment whereas the remaining one third is consumed by the non-tyre segment.

India is currently the sixth largest producer of NR in 2015 with a share of 4.7% of world production. During 2015, the output in main producing countries viz; Thailand, Indonesia, Malaysia and Vietnam increased, whereas production in China and India decreased during 2015.

Table 2.2: Consumption of All Kinds of Rubber According to the End Products 2014-15 (in Tonnes)

Products	**Natural Rubber**	**Synthetic Rubber**	**Reclaim Rubber**
Auto Tyres and Tubes	682350	382690	49640
Cycle Tyre and Tubes	75465	29585	26750
Camel Back	44675	31785	4730
Footwear	62635	35190	9650
Belts and Hoses	42170	17730	10750
Latex Foam	28385	--	--
Dipped Goods	41215	--	--
Others	44015	39150	27545
Total	**1020910**	**536130**	**129065**

Source: Monthly Rubber Statistical News, April 2016

Production of Natural Rubber (NR) in India during the year 2015-16 fell 12.9 per cent to 562,000 tonnes from 645,000 tonnes produced a year ago. Adverse weather, high wages, lack of skilled labourers, grower's reluctance in harvesting or maintaining trees in response to the low NR prices have affected the production of natural rubber (NR) in India during the year ended March 2016. Even though the tappable area under natural rubber was 559,000 ha during 2015-16, only 391,000 ha has contributed to the NR production during the year. India ranks second with regard to NR consumption in 2015 with a share of 8.2% of world consumption. India produced 199,845 tonnes of Synthetic Rubber (SR) during 2015-16, up 31.6 per cent on year. SR consumption increased to 553,370 tonnes during 2015-16 registering a growth of 3.2% as against 536,130 tonnes consumed during 2014-15. The relative share of consumption of NR and SR in India was 64:36 during 2015-16.

A3.Rubber Industry: Rajasthan

In the art and culture rich state of the country, the total registered rubber manufacturing firms are relatively lesser as compared to the leading state and to the total units in the country. The number of registered manufacturers has not shown any striking increment or decline in the last five years. It is important to note that our survey focuses on the firms operating in the organized segment of the industry only whereas there are a large number of units manufacturing rubber products in the unorganized sector across the country. As per our survey responses, there are 207 validated firms engaged in the rubber product manufacturing in the state.

Table 2.3: Manufacturers Status

Year	No. of licensed manufacturers		
	Rajasthan	Kerala	India
2011-12	133	760	4386
2012-13	146	724	4334
2013-14	151	724	4350
2014-15	148	734	4307
2015-16	131	744	4363

Source: Rubber Board

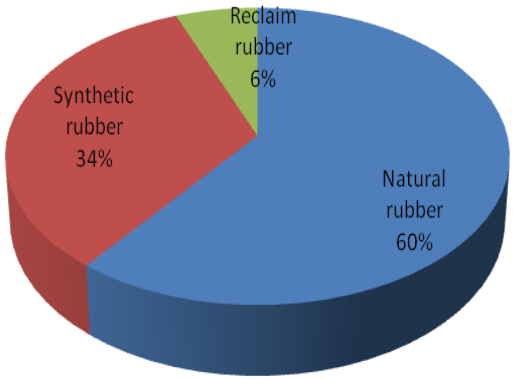
Jaipur is the major centre of rubber product manufacturing in the state of Rajasthan followed by Alwar. There are many other districts as well where different types of rubber products are manufactured, however the number of units is not very large. Moulded products as well as tread rubber products are the leading segments where highest number of firms is engaged in production in the organized segment in the state with respect to the rubber industry. Rubber products are manufactured in the following districts in the state:

a) Jaipur
b) Alwar
c) Kota
d) Udaipur
e) Bikaner
f) Jodhpur
g) Barmer
h) Kankroli
i) Ganga Nagar
j) Ajmer
k) Nagaur
l) Sikar
m) Jhunjhunu
n) Jalore

A4.Rubber Consumption in Rajasthan

On an average, the annual total rubber consumption in the state remained at above 1 lakh tonnes in the last five years. There has not been any clear trend with respect to the rubber consumption in the state, neither towards an upside nor a downside. The total consumption of 1,04,065 tonnes of rubber in the year 2015-16 comprised of 62,890 tonnes of natural rubber; 34,925 tonnes of synthetic rubber and 6,250 tonnes of reclaimed rubber. Tamil Nadu, Maharashtra, Kerala, Gujarat and Andhra Pradesh are the top five rubber consuming states in the country. In the year 2015-16, Rajasthan stood at the sixth position in the list of rubber consuming state in India.

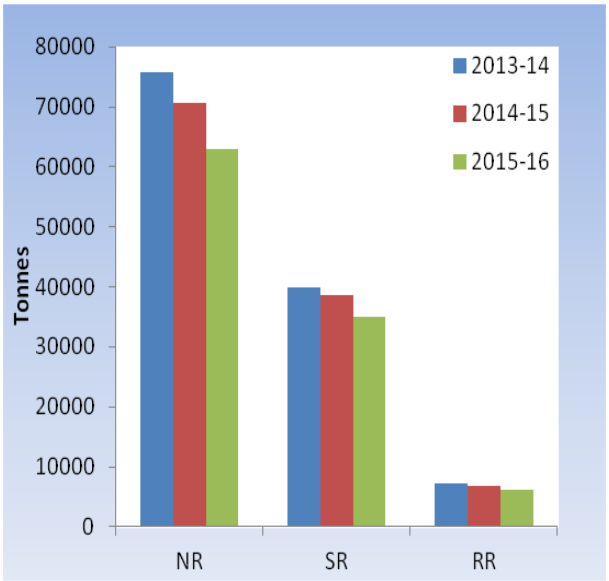
Fig 2.1: Share of Different Types of Rubber



Source: Rubber Board

The total consumption of rubber in the year 2015-16 for the state stood at 6.2 percent of the total rubber consumption in India.

For the state of Rajasthan, natural and synthetic rubber constituted 6.3 percent of the total national consumption in the respective segment while share of reclaimed rubber consumption for the state constituted 5.3 percent of the total reclaimed rubber consumption for India. It is important to note that in the last five years, there is a decline registered in the consumption of the rubber of all three types in the state.



After presenting an overview of the rubber industry in the state, now we move on to the detailed analysis of employment in the industry. In order to understand the various factors affecting the employment in the rubber industry and skill requirement in the state, a survey of 55 units has been conducted. The next chapter presents the details, analysis and findings of the skill gap study in the state.

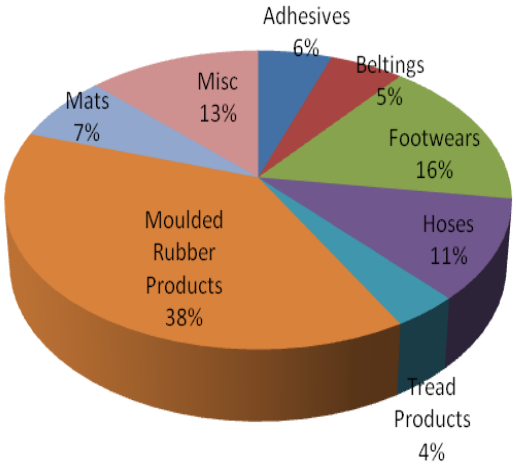
SURVEY INSIGHTS

This chapter provides an insight into the status of human resource employed in the rubber industry in the state of Rajasthan. Analyzing the pattern of manpower recruitment, their skills, skill gap, training status and its requirement based on the feedback received from the surveyed firms, it presents the current scenario, industry concerns and future requirement. The survey covered a sample of 55 rubber product manufacturing firms involved in the production of adhesive tapes, adhesives, tubes, belts, cable, foam products, footwear, hoses, mats, rubber rollers, tread rubber, moulded and extruded rubber products. The firms belonging to the following cities provided their inputs for undertaking the skill gap analysis in the state, however Jaipur remains the main centre of rubber products manufacturing in the state:

- Bhiwadi
- Neem ka thana
- Jaipur
- Jodhpur

Given the different scale of production (small, medium and large) and existing organizational structure, the skill gap prevalent in the industry is analyzed across various job roles attached to different operational departments. The analysis of the data collected from the select rubber products manufacturing firms across the different segments would not only help in understanding the existing skill gaps but also the emerging skill gaps with respect to the rubber industry in the largest state of the country.

Fig 3.1: Survey Coverage



Through analyzing the responses of the surveyed firms in the state, the focus of the chapter is on understanding the present structure of employment, future expansion plans, educational and training status and the industry players' expectations from the various stakeholders viz, RSDC, Industry Association, Educational Institutes and other stakeholders.

Highlighting the present capabilities of the employees involved in different operations, the analysis presents a matrix of skill gaps for various job roles across the different segments of rubber product manufacturing in the state. Here, we examine the overall employment in rubber industry in the state w.r.t.:

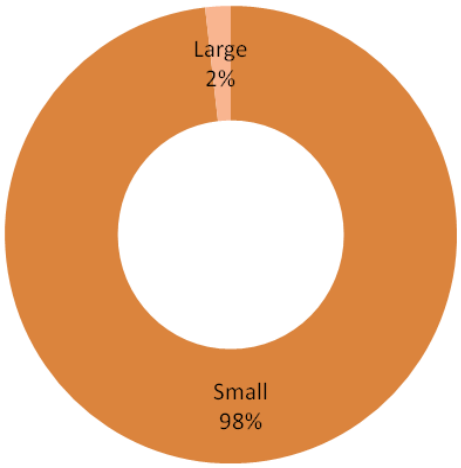
a) Current Status
b) Issues/Concerns
c) Possible Actions

A) CURRENT STATUS

A1. Scale of Operations

Interestingly, the sample selected for the survey belongs majorly to the small scale enterprises based on the investment information revealed by them. Among the respondents, there are 98 percent small scale and only 2 percent large scale firms according to their total investment in the business. The only large scale firm covered in the survey belongs to the beltings segment in Jodhpur city.

Fig 3.2: Investment

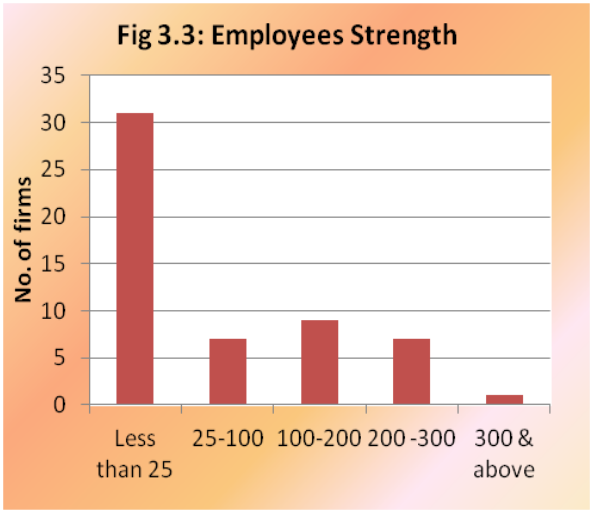


However, the total turnover varies as compared to the total investment of the firms. The turnover of the surveyed firms ranges between less than a crore to 250 crores. However, each of the entrepreneurs surveyed in the state are handling manufacturing of rubber products only for one production unit, except one firm dealing in footwears managing four different operational units.

Two fifth of the surveyed firms do not envision any major change in the production in their respective segments of rubber product manufacturing. These firms belong to the different segments of rubber product manufacturing and not specific to any special segment. However, remaining three fifth firms mainly hold the view that there will be technological changes in the production. The footwear segment will see the use of rubber decreasing further in coming years and there would be developments on front of waste minimization according to a firm operating in Bhiwadi.

Another important variable reflecting the size of the firm relates to the total number of employees in the organization. The human resource requirement varies depending on the nature of the product produced, scale of automation and production.

Fig 3.3: Employees Strength



The employment pattern reveals that 70 percent of the firms investing upto 5 crores (small scale) employ less than 100 persons.

It has been noticed that fifty six percent of the small scale firms have less than 25 employees. Interestingly, almost thirty percent of the small scale firms employ relatively larger number of employees ranging from 100 to 280. The only large scale firm belonging to the Beltings segment hires the highest number of employees according to the details shared by the respondent firms. According to the survey response, most of the firms have maintained that they face problem in getting skilled manpower mainly at operator's level.

Considering the time zone related to the establishment of the surveyed firms, no striking fact has been noticed with respect to the size of operations in the last four decades. There has been a clear tilt towards the small scale firms in the industry in the state over the years.

Table 3.1: Periodic Table

Year of Establishment	Number of Firms	
Respondent Firms	**Small**	**Large**
1970-1985	12	-
1986-2000	22	-
2001-2015	20	1

The survey provides a coverage of a combination of old established firms as well as newly established firms in the beginning of 21s century. This particular phenomenon helps in identifying the problems with respect to skilled manpower in the industry for older and newer firms as well as highlights the similarity for both. More than half of the respondent rubber products manufacturing firms were established before the beginning of 21st century in the state of Rajasthan and majority of them during 1986-2000.

It is important to note that whether the firms are in operation for many years or established in recent past, however they all face the problem of getting skilled manpower.

A2. Recruitment Strategy

Only one tenth of the surveyed firms engaged in rubber industry are interested in hiring all the employees on their roll irrespective of their production capacity, investment, product segment and number of total personnel employed. An analysis of the recruitment strategy of the firms belonging to the rubber industry in the state of Rajasthan depicts that 80 percent of the surveyed firms have hired fifty percent or less of all their employees on roll and there are only five firms which has no on roll employees, in other words they have all employees hired on off roll basis. The firms which have off roll employees on their board are engaged in manufacturing of moulded products, adhesives, footwear and rubber band do indicate a correlation with

Table 3.2: Basis of Employment

Percentage of on roll employees	Surveyed Firms (%)
0-25	53
25-50	24
50-75	7
75-100	5
100	11

the size of the workforce hired. These firms have quite low number of employees.

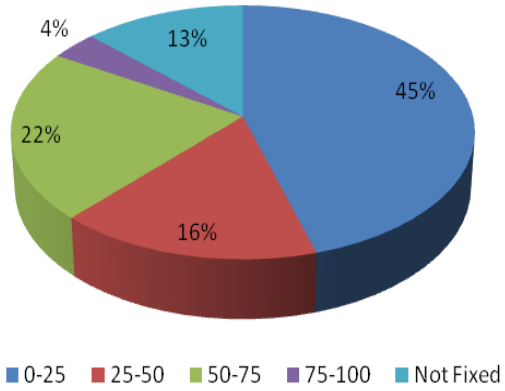
The most effective method of employing workers in the industry is through internal references and direct interview for almost all of the surveyed firms. However, there is no single surveyed firm which reported that they are using the consultancy, placement agency and their HR department to get the relevant people for the vacant positions in their production unit. But, there are two firms which have employees recruited with the help of contractors engaged in manufacturing of beltings and footwear.

A2.1 Employees Recruitment

Among the total firms surveyed in the state, it has been noticed that no single firm has recruited all the employees from Rajasthan only. In each of the firm, there are employees coming from other states to work in rubber product manufacturing firms, however the percentage of employees coming from outside varies for different segments of the industry. The employment trend depicts that for majority of the respondent firms preferred recruiting the employees from outside have their origin from the state of UP and Bihar. West Bengal and Assam do contribute to the workforce engaged in the surveyed rubber industries in Rajasthan though in a very small proportion. Importantly, there are four organizations which have recruited all the workers from outside the state and they maintained that the outside workers are hard working than local recruits.

Higher productivity and hard working nature are the main reasons listed by the firms hiring the people mainly from the neighbouring states. However, fifteen percent of them have not mentioned any specific reason for hiring people from outside Rajasthan.

Fig 3.4: Employment Pattern: Employees from Rajasthan



The main job positions for outside people are for operator and helper level however few respondent firms have not specified any specific job role for them. Nearly one third of the firms have clearly mentioned that outside people are recruited for supervisory role as well in addition to operators and helpers.

A2.2 Attrition Trend

With 65 percent of the firms experiencing low level of attrition (less than 5 percent) in the rubber industry in the state, the status of employment in the firms does not indicate any alarming trend. For more than fifty percent of the firms, the employees remain associated with the organizations for longer periods with the small scale firms. Relatively higher rate of attrition has

been reported by the firms involved in the manufacturing of moulded products.

Lower attrition rate could be associated with the fact that the firms train the employees on their own for their work and skilled labour is difficult to find. Therefore, the firms do not want the employees to leave. On the other hand, people coming from outside the state would not prefer to change job frequently in case there is no issue with respect to monetary rewards.

A2.3 Retention Strategy

It is important to hire the right person for the required job but at the same time it is equally essential to retain the human resource for the firm. Skilled manpower is more valuable as compared to their unskilled counterparts and therefore it becomes important for firms to retain the skilled and experienced workers with them.

The survey results show that the employed personnel do not possess any technical skill before joining and gain experience through shop floor work only. Here, it is interesting to understand that if the firms spend time and resources in training people on the job then they should have effective retention strategy. However, it is found that one third of the firms do not have any retention strategy but the attrition rate in these firms is very low. Majorly, these firms hire lesser number of employees. For rest of the firms, it is the monetary aspect related to pay, bonus, increment, facilities as well as good working conditions which play an important role in encouraging people to remain associated with them for a longer period. It is interesting to note that no firm has given importance to long term career growth plan as their retention strategy.

Table 3.4:Retaining Employees

Retention Strategy	Firms Response (%)
No retention Strategy	33
Good pay, increment, bonus	36
Good pay, increment, bonus and facilities	24
Good pay, increment, bonus and good working condition	7

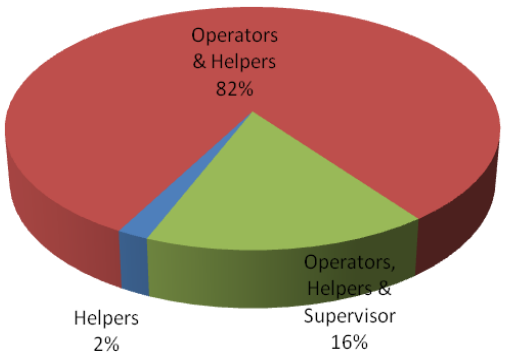
A2.4: Workforce Status

A2.4.1 Requirement & Availability of Manpower

The survey analysis for the key job roles for recruitment clearly shows that the main roles for employment in rubber industry are related to operators and helpers. Only nine firms have mentioned requirement for supervisors in addition to operators and helpers. It is important to note that no respondent firms mentioned the there is a requirement for people for undertaking marketing, quality assurance, accounting

and any other non-core activities. Such trend indicates the very nature of small scale operations where non-core activities are mainly handled by the owner and any other senior personnel of the firm.

Fig 3.5: Key Job Role Requirement



In Rajasthan, finding requisite number of people for carrying out the rubber products manufacturing by the firms is not a major concern for the respondent firms. Moreover, there is no shortage of manpower reported by the surveyed firms. Twenty percent of the surveyed firms have no issues related to human resource availability in the present context. One fourth of the respondents raised the issue of skilled manpower in the rubber industry, however a large proportion of the firms have not considered this as a major concern.

A2.4.2 Workforce Distribution: Core and Non- Core

The proportion of employees engaged in administrative and managerial work is not very significant in rubber products manufacturing firms across all segments. Almost three fourth of the firms surveyed are hiring 75 percent or more of their total employees in the core production section. Moreover, the trend is in line with the findings related to the key job roles for employment in this sector.

Table3.5: Core and Non-Core Distribution

Recruitment in Core Functions of Production	Surveyed Firms (%)
90% and above	33
80 to 90 %	25
70 to 80 %	24
60 to 70 %	11
Less than 60%	7

A2.4.3 Actual Employment

The main categories for which firms have listed out their total employment pattern are as follows:

- Supervisor
- Operator
- Helper
- Senior Management
- Packaging/Finishing
- Accounts
- Quality Assurance
- Sales
- Purchase
- Engineer/Technologist

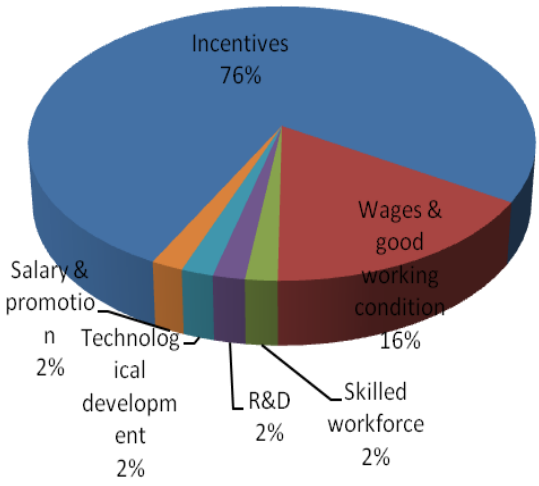
An analysis of the employment pattern reflect that for more than half of the surveyed firms operators and helpers constitute two-third or more of their total employees. However, for supervisory role 80 percent of the firms have recruited less

than 15 percent of their total work force. Interestingly, ninety two percent of the total respondents have no one recruited for quality assurance. The reason for showing lesser interest in hiring people specifically for quality assurance relates to the small scale of operations where the task of quality check is taken up by supervisors and operators themselves. However, half of the firms have employees specifically involved in packaging/finishing work. The share of senior management for majority of the firms remained quite low. It should be noted that only one organization involved in retread work have personnel separately recruited for Utility and Maintenance. Two fifth of the surveyed firms have people recruited for accounts work whereas for others there is no one working separately at the accountant's designation. Sales and purchase activity is taken up by employees in less than 10 percent of the respondent firms whereas in remaining firms, these activities are executed by the owners themselves.

A2.4.4 Drivers of Productivity

The firms need to pay attention towards the productivity of people employed by them for undertaking various job roles. Skill development of employees is one aspect for which employer should be careful about. However, from the point of view of employees what drives their productivity remains a big question to be answered. Eliciting the response for this question, it has been pointed by majority of firms that incentives (in terms of wages/salary) are the top most driver of productivity. Monetary phenomenon guides the performance of the workers to a great extent. There are no firms which have not been able to identify any reason that drives the productivity of the employees.

Fig 3.7: Drivers of Productivity



One of the surveyed firms reported continuous research and development as one of the main factors affecting the productivity. Considering these responses, it should be noted that incentives can be provided easily by the employer when the worker performs a task more efficiently over a period of time. This could be attributed to developing skills of the workforce for which both employee as well as employer should pay attention for improving productivity in the long run.

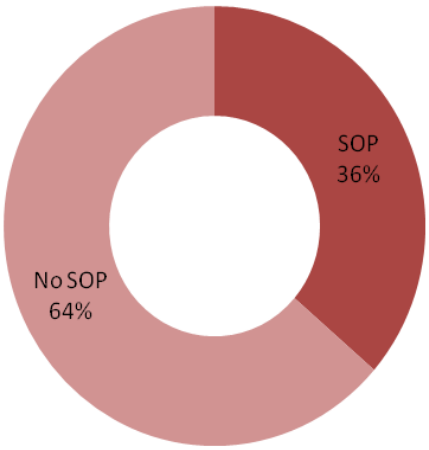
A3. Standard Operating Procedures (SOP)

Standard Operating Procedures are laid down by the firms to clearly list out the process to be followed at different levels in

product manufacturing. It has been observed that only one third of the respondent firms have the SOPs at their workplace which is not a very encouraging side of the manufacturing practices in the industry in the state. Such trend does not have any correlation with specific segment of rubber manufacturing units. Nearly two third respondent firms do not have SOPs. It should be noted that such firms have employees who are engineers and workers who hold higher education (graduation) degree and surprisingly still not follow any SOPs.

It follows from such observations that educated employees are not contributing towards making the firms aware about the importance of following the standard procedures.

Fig 3.6: Standard Operating Procedures



Majority of the organizations surveyed who have Standard Operating Procedures at their units; revise them as per the requirement. For firms following SOP, 80 percent of them revise it as per the requirement (product or process modification) and 15 percent on monthly basis. However, no revision has taken place for only one firm, reason being the same product and process followed.

B. ISSUES AND CONCERNS

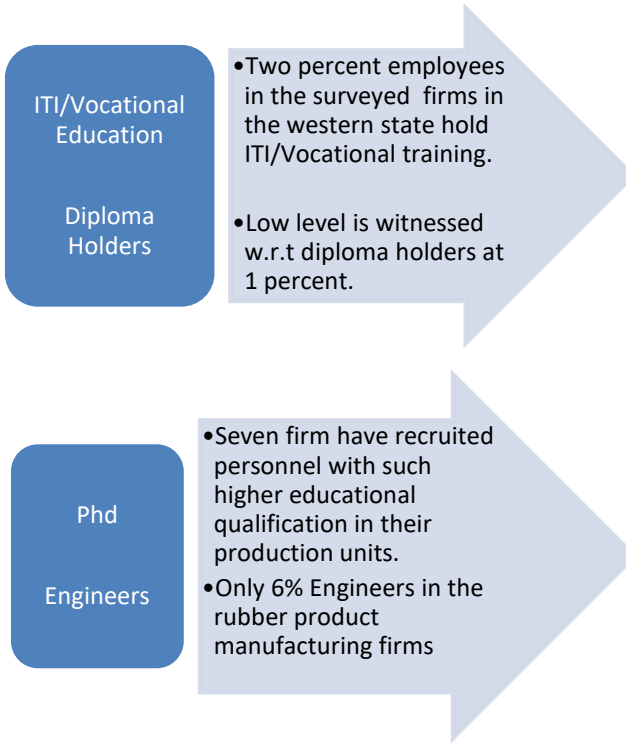
B1. Educational Front

It is assumed that the skills do have a strong correlation with the educational background of the workers. Considering this fact, the section highlights in detail the present scenario of the educational status of the workers employed in the rubber industry in the state of Rajasthan. Only 5 percent of the total surveyed firms have all the employees who are metric pass and hold higher educational qualification. It is interesting to note that a large proportion of the employees working in the rubber industry have not completed their school education. This situation for the state is similar to the condition in the neighbouring state of Gujarat where majority of the workforce employed in the industry are not even metric pass. In Rajasthan, ninety percent of the total respondent firms have 40 percent or more employees who are not even metric pass.

Table3.6: Minimum Education

Percentage of employees below 10th standard	Surveyed Firms (%)
Less than 40 percent	4
40-70 percent	27
70-100 percent	64
None	5

The area of concern is the vocational training and field specific educational qualification for the employees working in the rubber industry in different segments. It is important to note that the industry employment should focus on vocational and specialized education however the ground reality shows that there are only ten percent of the respondent firms which have recruited employees who are ITI/vocational. The presence of Diploma holders in the rubber manufacturing units is negligible, hardly accounting for 1 percent of the total number of employees. Moreover, the existence of Engineers working in the rubber products manufacturing units surveyed is even less than 1 percent of the total number of employees. Also, there are only seven firms which hire qualified personnel in the research department (Phd).



Graduates working in the rubber manufacturing units are mainly associated with the accounts, marketing, quality assurance and management department. In the state, there are 35 percent of respondent firms which have no graduates working with them, only school pass outs or less educated workforce.

B2. Training

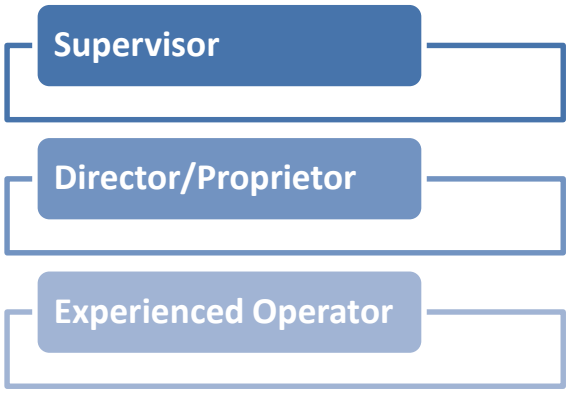
Out of the 55 firms, only one firm has a separate training department for their employees. The firm is associated in manufacturing of tread products. For the rest of the 98 percent firms, neither had they appointed a trainer nor do they arrange any expert visit to their workplace. In all, majority of the firms have adopted the culture of on the job training, mostly prevalent all over the country in the manufacturing segment. These firms have not indicated separate resources especially for training their employees. All these firms are not tiny organizations but small scale firms. This clearly indicates less interest shown by the organization in allocating separate resource for training the employees.

Although majority of the firms do not have any separate training department, they provide training to the employees by utilizing their in-house resources. It has been noted that in the smaller organizations having less than 10 employees, the proprietor/director or the supervisor trains the operator and helpers in performing the assigned task.

Experienced operators mainly take up the responsibility of training the helpers in organizations having relatively higher number of employees. Here, the attitude on the part of the organizations too does not reflect an encouraging trend towards resolving the issue of technical skills.

The following chart depicts the persons who are mainly engaged in providing in house training to the work force working in the rubber products manufacturing units:

Fig.3.8: IN-HOUSE TRAINERS



B2.1 Requirement for Training

Although the firms do not allocate specific resources for training department, but all of them responding to the requirement for training agreed unanimously that there is a sheer need for training the employees. However, only few organizations clearly outlined the roles for which there is specific requirement for training. Among the various job roles, the requirement for operators' training emerged as the top priority which was followed by helpers training requirement.

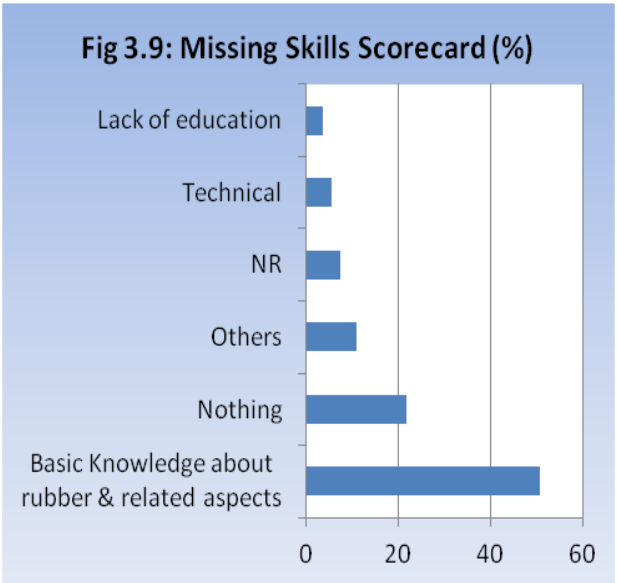
B2.3 Training Institutes

Regarding the association of rubber products manufacturing firms of different segments with the training institute, the survey results present a notable observation that 96 percent of the firms have no direct relation with the training institutes. Only two firms have an association with training institutes for recruiting people in rubber industry.

No major issue has been highlighted by the firms with respect to the dealing with training institutes in the state.

B3.Missing Skills

Half of the firms who responded to the query related to the skills that the industry find missing in their employees believed that the workers lack basic knowledge about rubber and related aspects badly whether it is a newly established organization or any firm operating for more than a decade. An important area of concern that they reported relates to the requirement of supervision for operations which means that the workers are not confident to perform their work independently. As the employees mainly gain knowledge on the job which has been highlighted throughout in the survey responses, the weakness on the part of knowledge regarding the properties of the material/product and their usage seems to be the main area of concern. One fifth of the firms do not find anything missing on the skills front in their employees.

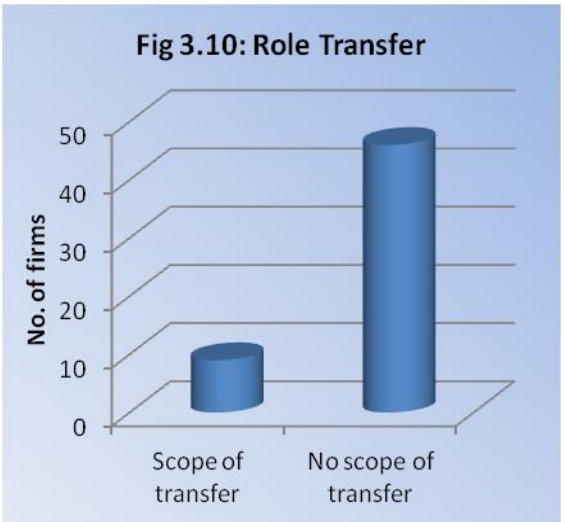


B3.1: Regional/State level Variation in Skill Gap

Any of the surveyed firms have not responded to provide any indication regarding the regional/state level variations in the skill gap. However, the firms hold the view that they do not witness any regional variation in skill gap of the workforce.

B4.Role Transfer

Transfer of roles in the factory premises basically mean that a person recruited for performing a particular job role is also performing the other roles. The survey results indicate that 16 percent of the respondents admit that there exists a scope of transferring role among employees in case they are skilled enough and qualified to perform the other role. Some of the firms maintain that job rotation is good for the performance of the workers. Few firms hold that they train the workers for performing multiple tasks/roles. However, a large number of firms have denied the existence of such phenomenon in their factory premises belongs to old and newly established small scale units of the industry in the state. In other words, the person specific role is important in majority of the respondent firms belonging to different segments of rubber manufacturing.



It is now interesting to ascertain whether there is a particular category where role transfer is common or it exists at all levels. The survey findings do not clearly outline whether such multiple role performance happens among helpers, operators or supervisors. It has been clearly accepted by some of the firms irrespective of their size and total number of persons employed that the workers are performing more than one task.

Such arrangements in the firms points towards an important finding while we discuss the skill gap issue in our present analysis, that is , employees have the capability of performing more than one role than can't we call is as multi skill employees. Then where is exactly the skill

gap, here we have a reservoir of skills but the fact is that the employees are not trained to perfection in one role and upgraded on regular basis but use their services in multiple roles in adhoc manner.

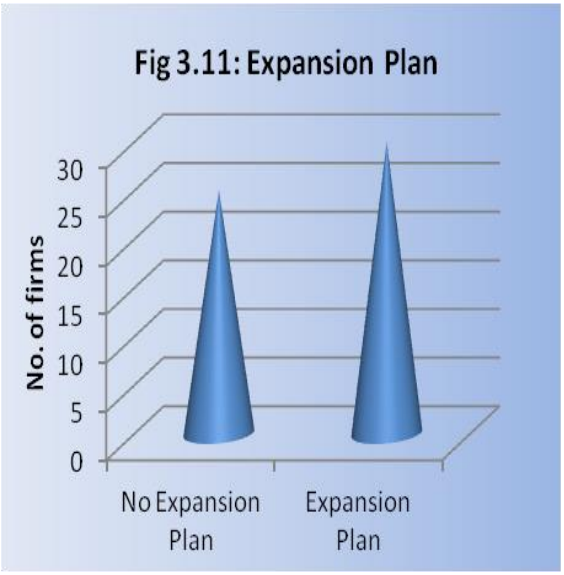
B4.1 Skill Gap or Saving on Resources

It has been mentioned by some of the firms that transfer of roles among employee is taking place. However, one should think over it as it is really a skill gap or firms are saving on their resources. Even at the senior management level, the multiple roles are performed by the employees. The following intercepts which has been shared by the some of the firms can be taken for the consideration:

"The Owner himself plays the role of Managing Director and also together plays multiple roles that of marketing manager, HRM, procurement and production manager. The helpers do the finishing and packing. The supervisor along with the quality check worker does the quality check."

B5. Expansion Plan

Nearly half of the surveyed firms in the industry in the state do not have any future expansion plans. Taking a note of the specific segment, entrepreneurs engaged in the footwear and rubber ring production do not have any plans for further expansion. However, the entrepreneurs who are concerned about their growth in the market are either looking forward to expand same line of business, enter a new extending product line or upgrade the technology.



Fifty four percent of the surveyed firms engaged in rubber product manufacturing in Rajasthan reported that they have the future expansion plans regarding their manufacturing activities.

Firms expanding their business may require the additional workforce; however the respondent firms have not highlighted specifically the job roles. Moreover, the total number of additional workforce will depend on the expansion. Interestingly, the firms are planning for expansion but they do not have any estimate about the required capital investment.

B6. Future Trends: Emerging Skill Gap

Regarding the scenario in coming years for the education related skill issue in the rubber industry in state; the respondent firms have no specific direction in this respect. Only ten percent of the firms

reported that the skill gap would emerge in future on account of lack of training and practical sessions. It has been outlined very clearly by each of the surveyed firms that the employees working with them have gained the process and work knowledge through shop floor experience only but they have not raised the issue of any requirement for technical education in the industry in coming years. Such outlook for the industry is held by the entrepreneurs running small scale units across all segments. However, the other states having larger number of rubber manufacturing units have clearly outlined the need to provide focus on technical education.

B7.Skills vs Performance Review

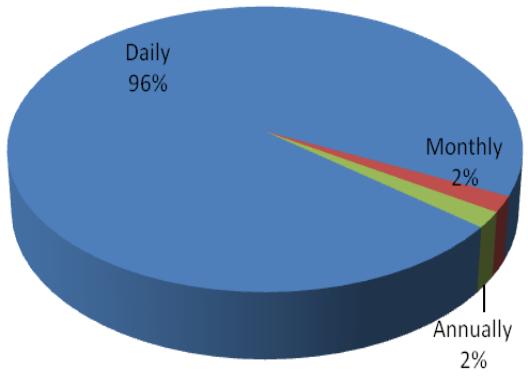
Performance of any employee depends on the ability to perform the work assigned efficiently, effectively and in timely manner. However, the output is important but the review of the performance is no less significant to develop and maintain new and existing skills. Performance review depends greatly on how one measures the output of the worker.

Table 3.7: Workers Output Measurement

Parameter	Firms (%)
Quantity Produced	49
Quantity & Quality	43
Attendance, Quality & Productivity	2
No criteria	4
Less defective product and wastage	2

Majority of the firms have responded the way they measure the output of their workers. While sharing their method regarding the output measurement, firms have disclosed that it is mainly by the way of quantity produced on daily basis. However, 43 percent of the firms surveyed mentioned the inclusion of quality aspect whereas for 2 percent of the respondent firms it the attendance, quality of output produced by the workers and productivity which forms the main component of output measurement by them. Lesser number of defective products and lesser wastage is the main criteria for one of the firm manufacturing Footwear in the pink city, Jaipur. Firms have mentioned that generally the set targets are met by their workers.

Fig 3.12: Performance Review



All of the surveyed firms have shared their method of performance review. Given the small scale of operation of the firms in focus, major proportion of them reported that they review the workers performance of daily basis. Interestingly, the trend of performance review is similar for old established firms and newly established firms in the industry in the state. One firm engaged in the production of moulded

products review the workers performance on monthly basis and another firm producing hoses, mats sheeting etc mentioned that they review the workers performance on annual basis. Both of the firms are located in Bhiwadi.

It is important to carry out the performance review by the firms which are all engaged in the manufacturing activities. Not only the personal development is reflected through such activities but also the skill gaps get highlighted for each of the employees.

C. Possible Actions

To address the skill gap issue in the rubber industry in the western state of Rajasthan, the respondents from the different product segments have suggested the Rubber Skill Development Council (RSDC) to play a significant role in providing the skilled and trained labour force for this industry. However, majority of the firms did not share any role for educational institutes and have not shown any interest in their participation in skill development for rubber sector. Only few firms have indicated that the educational institutes should provide technical education and skilled workforce.

An important suggestion that has emerged from the survey findings for industry role is to provide certified training courses. Nearly two third of the firms have spoken about the role RSDC should play in improving the condition of the human resources in the rubber industry in the state.

The main recommendations for the sectoral skill council are highlighted below:

SKILL GAP ANALYSIS

Before we move on to the skill gap analysis for the rubber industry in the state of Rajasthan based on the survey conducted for the select manufacturing units, it is important to understand what we mean by Skill and Skill Gap. An ability and capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carry out activities or job functions involving ideas, things and people is how we may define *Skill* in the industrial set up. Different types of skills are required in the manufacturing units for various job roles. Here it is noteworthy that we first need to define the skills required to perform a specific job role and then highlight the gap. The difference in the skills required on the job and the actual skills possessed by the employees is referred to as *skill gap*. Skill gap analysis for the various job roles in the rubber industry helps achieve the following objectives:

- Helps to define the skills required in the industry at present and in future
- Make employees aware about the critical skill they will need to develop/learn
- Helps in recruitment effort when current employee do not possess the required skills for the specific job role

This chapter presents the skill gap noted by the firms producing rubber products in the state, job role wise skill gap for different segments, skill gap intensity for each of the job role and emerging skill requirements in the future in the industry.

A) Missing Skills: An Analysis

An attempt is made to provide an industry's perspective regarding the employees' skill gap that the entrepreneurs have identified and experienced in their organizations. Half of the firms who responded to the query related to the skills that the industry find missing in their employees believed that the workers lack basic knowledge about rubber and related aspects badly whether it is a newly established organization or any firm operating for more than a decade. As the employees mainly gain knowledge on the job which has been highlighted throughout in the survey responses, the weakness on the part of knowledge regarding the properties of the material/product and their usage seems to be the main area of concern.

Table4.1: Knowledge Skill Gap (Product & Process): Product Category Wise

Category	Firm's response (%)
Camel back	4
Footwear	18
Belts and hoses	11
Tyre, Tube and Flaps	4
Dipped goods	-
Others	63

B) Skill Gap: Based on Major Classification

As reported by the firms, there are distinct skill gaps prevalent at different levels. Broadly, here we will list down the main skill gap observed at helper, operator and supervisor level. Following the organizational hierarchy, let's begin from the bottom of the pyramid.

1. Helper

Entrepreneurs feel that the helpers are mostly untrained and do not depict any interest in performing the assigned task. The individuals working as helpers in the factory premises are primarily less educated and only understand local language. Generally, they tend to engage in laborious work and avoid learning any technicality related to production. No formal training in any field has been attended by them and they are not bothered about product manufacturing. In all, it is important to focus on their personality development, disciplinary and communication skills. An attitude towards self learning need to be developed which is extremely important for progress on professional front.

2. Operators

The operators handling a range of activities in the manufacturing unit are not trained and skilled for performing their roles. On the job training is provided to most of the operators employed in the rubber products manufacturing units in Rajasthan. Lack of product knowledge and safety issues is the main personality trait of the individuals handling machine operations. Issues arising in functioning of machine and its repair are not easily resolved by the operators. They lack technical knowledge related to rubber, chemicals and other components in product manufacturing. No issues have been raised by any entrepreneur with respect to communication, discipline and presentation skills of the workers falling under this category.

3. Supervisor

Majority of the firms find that the personnel engaged in performing supervisory role lack knowledge on part of the developments taking place on technological front in the industry. Also, they lack training in technical education. Supervisors are the main pillar of the manufacturing activities under whose guidance the work is carried out in the unit. One of their main roles is to train the workforce and get the product ready. Therefore, greater attention should be paid by the entrepreneurs towards them for updating their technical skills.

4. Quality Control

Very few firms have hired people separately for quality control. There is no skill gap reported by the respondent firms for the people engaged in performing this job role.

There exist large number of employees who are involved in the production or manufacturing process who receives training in the factory premises only after getting employed, therefore the skill gap at the entry level is at the highest level.

Table 4.2: Job Roles and Skill Gap: Rajasthan

Segment	Job Role	Skill Gap	Intensity
Hoses	Mixing Operator	• Lack of formal training • Lack of basic education • Lack of knowledge about rubber • Lack of knowledge about safety measures	Medium
	Extruder Operator	• Lack of formal training • Lack of basic education	Medium
	Curing Operator	• Lack of proper knowledge about rubber • Lack of formal training • Lack of basic education	Medium
	Packaging	• Lack of basic education • Lack of knowledge about rubber	Medium
Tread Rubber	Kneader Operator	• Lack of technical knowledge • Lack of basic education • Lack of chemical knowledge	High
	Mixing Operator	• Lack of technical knowledge • Lack of basic education • Lack of formal training	Medium
	Calendering Operator	• Lack of formal training • Lack of basic education • Lack of knowledge about rubber • Lack of technical knowledge	Medium
	Cutting Operator	• Lack of basic education • Lack of knowledge about rubber and its components • Lack of knowledge about the production process • Lack of training in rubber	Medium
	Press Operator	• Lack of formal training	Medium

		• Lack of basic education • Lack of technical education	
	Supervisor	• Lack of formal training • Lack of education in rubber sector • Lack of knowledge about the latest technology used in rubber	Low to Medium
	Inspection Supervisor	• Lack of formal training • Lack of technical education	Medium
	Dispatch Supervisor	• Lack of training in rubber • Lack of technical knowledge • Lack of education	Medium
	Helper	• Lack of technical knowledge • No formal training • Lack of education	High
Adhesive	Production Manager	No skill gap	Low
	Helpers	• Lack educational qualification • Lack of technical knowledge • No formal training	Medium
	Mixing Mill operator	• Lack knowledge about rubber	Medium
Moulded Products	Mixing Mill Operator	• Lack of technical knowledge • Lack of formal training • Lack of basic education	Medium
	Hydraulic Press Operator	• Lack of operational knowledge w.r.t machinery • Lack of basic education	Medium
	Cutting Operator	• Lack of technical knowledge • Lack of formal training • Lack of basic education	Medium
	Finishing/Packaging Operator	• Lack of proper training • Lack of basic education	Medium
	Helper	• Lack of technical knowledge • No formal training	High

		• Lack of basic education • Lack of knowledge about production process	
	Supervisor	• Lack of formal training • Lack of technical education • Lack of knowledge about latest technology	Low
	Purchase Manager	• None	Low
Footwear	Production Manager	• None	Low
	Floor Supervisor	• Lack of formal training • Lack of technical knowledge	High
	Warehousing Supervisor	• Lack of technical knowledge	Medium
	Kneader Operator	• Lack of formal training • Lack of formal education • Lack of knowledge about various chemicals and rubber	Medium
	Mixing Operator	• Lack of technical education in rubber • Lack machine operation skills	Medium
	Cutting Operator	• Lack of formal training • Lack of basic education • Lack of technical knowledge about rubber	Medium
	Press Operator	• Lack of formal education in rubber • Lack of basic education	Medium
	Quality Check	• None	Low
	Strap fitting	• Lack of formal training • Lack of basic education • Lack of basic knowledge about rubber	Medium
	Calendering Operator	• Lack of formal rubber education • Lack of basic education	Medium
	Vulcanizing Operator	• Lack of formal training	Medium

		• Lack of basic education	
	Assembling Operator	• Lack of formal training • Lack of basic education	Medium
	Helper	• Lack of formal training • Lack of basic education	Low
Beltings	Mixing Operator	• Untrained workers • Lack of technical education • Lack of basic education	Medium
	Kneader Operator	• Lack of technical knowledge • Lack of basic education	Medium
	Calender Operator	• Lack of formal training • Lack of basic education	Medium
	Press Operator	• Lack of technical knowledge • Lack of basic education	Medium
	Finishing Operator	• Lack of technical knowledge • Lack of formal education	Low
	Lab Technician/QA	• None	Low
	Helper	• Lack of formal training • Lack of basic education • Lack of technical education • No or very little knowledge about rubber	High
	Supervisor	• Lack of technical training	Medium
	Engineering Head/Supervisor	• None	Low

Skill gaps have been highlighted in the above section for the different categories of the employees segment wise in the state but it is significant to understand its intensity to take necessary action for improving the efficiency of performing assigned tasks. For example: the employees working at operator's level across the rubber product manufacturing segments have shown skill gaps of medium intensity, therefore the job roles falling under this category may not require any immediate action but need to be corrected in long run.

C) Skill Gap Intensity

The intensity of skill gap is listed under three categories by the firms covered in the sample of the study i.e. Low, Medium and High. However, the analysis of the responses is listed under following categories based on the given criteria:

Table 4. : Skill Gap Intensity Criteria

Category	Criteria (Response of firms)
Low	Low: 80 percent or more
Low to Medium	Low: 60 to 80% and Medium:20-40 %
Medium	Medium: 80 percent or more
Medium to High	Medium: 60 to 80% and High:20-40 %
High	High: 80 percent or more

Analyzing the responses of the firm for the intensity of the skill gap noted by them for the various job roles, it is interesting that the intensity of skill gap is not high for majority of the roles across the different segments. Moreover, as per the survey responses some of the firms have not identified any skill gap for the specific roles.

The skill gap intensity for operator's role for various activities has been rated majorly medium by the respondent firms. However, the supervisor's role assumes very low intensity for skill gap whether it is for production supervisor or specific to different job roles.

An analysis of skill gap intensity indicates that the firms have rated high skill gap intensity for helper's role. Moreover, majority of the firms reported that helpers which form an important part of the industry are mostly untrained and lack basic education across different segments of rubber product manufacturing. Most of the operators are facing low to medium level of skill gap which can be corrected by technical training.

D) Emerging Skill Gap

It is difficult to find skilled manpower in the current scenario as there are mainly unskilled and semi-skilled workers are available as per the feedback of the firms engaged in rubber product manufacturing. The firms do not observe any major educational skill gap emerging in the next five years in the industry. Also, some of the firms have clearly outlined that there will be availability issues w.r.t the skilled operators in near future. It is noteworthy that firms do not envision any major change in their line of production but visualize technological changes. However, majority of them would like to expand the same line of their business. Following these two sets of responses, it is estimated that the requirement for the job roles would be more or less same for the industry as a whole however technological advancement (if any for small and medium scale firms) may demand employees trained with operations of automated machines.

Fig 4.1: SKILL GAP INTENSITY

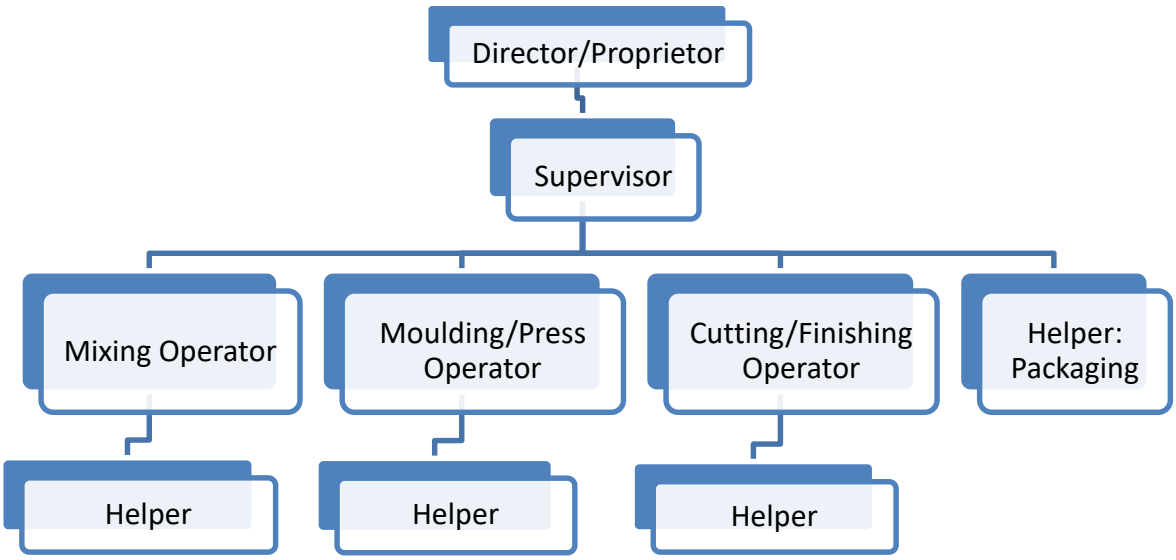
Job Role	Low	Low to Medium	Medium	Medium to High	High
Supervisor					
Mixing Operator					
Kneader Operator					
Curing Operator					
Calendaring Operator					
Moulding Operator					
Extruder Operator					
Cutting Operator					
Press Operator					
Packing Operator					
Finishing Operator					
Assembling Operator					
Strap Fitting Operator					
Helper					
Quality Control					
Inspection Supervisor					
Dispatch Supervisor					
Engineering Head					
Purchase Manager					

SEGMENTS AT A GLANCE

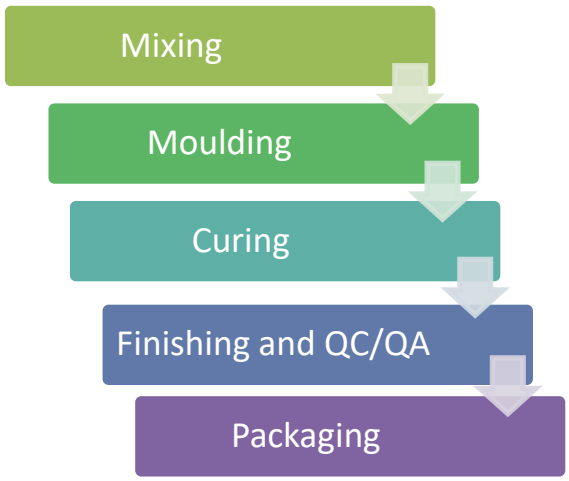
MOULDED PRODUCTS

Majority of the respondent firms producing moulded products are involved in the manufacturing of rubber rings. All of them operate in the capital city of Jaipur. They mentioned that they recruit lesser number of local people for their manufacturing process and hire workers coming from the states of Uttar Pradesh and Bihar. Half of the surveyed firms are employing 100 percent outside people in this segment of manufacturing. The survey findings reveal that those firms which are looking forward to expand their operations would like to enter other rubber related products and the requirement for additional human resource would depend on the scale of business expansion.

Organization Structure



Process Outline:

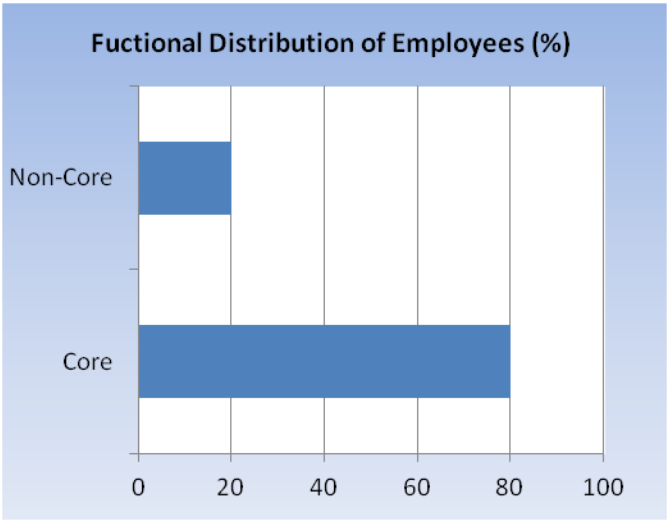


Compound is obtained by mixing the raw materials in a mixing and milling machine. The mixing takes place as per the required specification and then the sheet/strip is prepared. Rubber strips are made to be put in the hydraulic press. Moulds or cavities are used to get the required shape of the end products. Hydraulic press is used for moulding the rubber into rubber rings. Hydraulic press requires setting the temperature, pressure and timing for the mould. Once the ring is out of the hydraulic press, it is given finishing touches by cutting of the extra

rubber present. The produced goods are thoroughly checked for compliance to customer specification. The finished products are then packed and made ready to deliver.

Sample Units	Tiny	Small	Medium	Large	Total
Moulded Products	-	21	-	-	21

Manpower at a glance

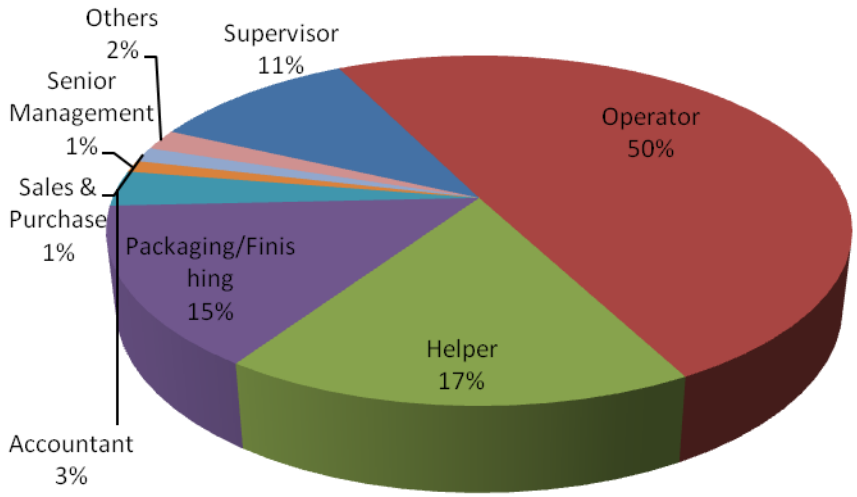


The employees are recruited on roll as well as off roll in the rubber moulded goods producing firms in the state. Firms hiring are hiring greater proportion of off roll employees, a trend emanating due to existence of outside workers. The major strategy for recruitment is through direct interview/walk-ins. Majority of the employees are engaged in the core production activity, only 20 percent of the total employees are taking up the administrative, managerial and accounting tasks. Except one firm, all the units covered in the survey under this segment feel that there is no scope for transfer of roles in the activities carried out by the workers in their units.

The surveyed firms have clearly mentioned that they easily find the requisite number of employees required to carry out the production however they have highlighted that the local manpower is careless in performing task and not willing to do hard work. Also, the employees lack skills with respect to technical knowledge about rubber as per the respondent firms in rubber rings producing units.

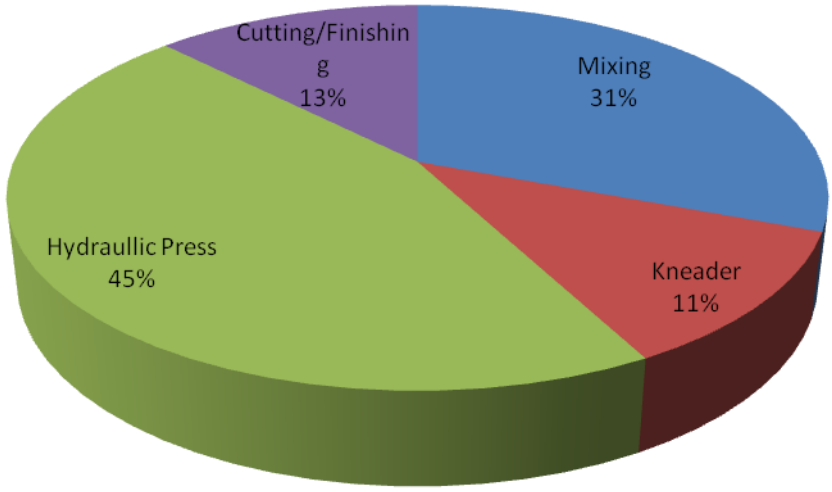
As per the classification of employees, the segment indicates mainly the requirement of operators and helpers. Interestingly, none of the firms have any one recruited for research and development in this segment of rubber product manufacturing. Also, the analysis for supervisory role indicates that there is one supervisor s/production manager handling the manufacturing of the product in most of the units. Specific role for accountants in one fourth firms imply that accounts are handled by qualified individuals not by proprietors themselves given the small scale of operations.

Job Role Distribution in Sample Units



An analysis of operator level employment reflects that there is mainly the requirement for hydraulic press operator and person carrying out mixing operation. The requirement for cutting and finishing operator emerged as a common trend for the firms involved in the production of rubber ring.

Operator Level Employment Pattern



With regard to the educational qualification of the workers employed in the firms producing moulded products, it has been observed that there is a shortage of technically qualified operators and they do not score very high on their qualification level.

Educational Qualifications (% of total employees)

Educational Qualification	Small
Ph.D/Research	.05
Engineers	.05
Graduate	10.8
Diploma Engineers	.07
ITI/Vocational Education	.03
XII/X/School Education	19
Below Xth standard	70
Others (CA, CS, ICWA, MBA etc.)	-

Training

Not even a single firm has a separate training department, all the firms have reported that they mainly provide on the job training. Moreover, it is interesting to note that no firm has any relation with the training institutes.

Main Roles and Skill Gap

1. Mixing Mill Operator

Mixing Mill Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Operation of the machine as per the guidelines • Mixing the raw material and the Chemical in proper proportion • Prepare batches as per Compound card • Maintain the pressure and the temperature of the machine so that mixing occurs properly • Maintain the machine as per the guidelines of the management. • Check that the preparations are		• Lack formal training • Lack technical knowledge about rubber • Lack of basic education		

without any deformities and blending has occurred properly; as is suitable for the next process. • Completion of mixing in given time • Quality of mix must meet the set standard				

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Good understanding of the machine at work.
- Knowledge of identifying the chemicals to be added to raw material.
- Putting the chemicals in sequence.
- Attentive towards the work process.
- Know the composition and required specification.
- Visual inspection of the compound to understand the condition.
- Knowledge of rubber and batch making process

Managerial skills:

- Guiding the helpers for routine work

Soft Skills:

- Good communication skills
- Good listening skills.
- Understanding skills for performing work quickly

2. Hydraulic Press Operator

Hydraulic Press Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Operate the machine properly. • Proper use of moulds • Application of different die for		• Lack of		

different products • Set the time, pressure and temperature • Maintenance of machine • Follow the guidelines given by the supervisor • Report to the in-charge/supervisor in case of trouble		operational knowledge w.r.t machine • Lack of basic education		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Handling the moulds as prescribed
- Knowledge of the use of die for different product
- Finely work on the preparation based on the dimensions set by the management.
- Maintain the machine so that it is suitable to work on for the next shift

Managerial skill:

- Good communication skills for guiding helpers.
- Guide the helpers in proper application of the produced product

Soft Skills:

- Effective communication skill

3. Finishing/Packaging Operator

Finishing/Packaging Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Carry out the finishing of final product and undertake final inspection • Operate the tools and handle the material properly.		• Lack of technical knowledge • Lack of		

• Optimal utilization of packaging material. • Proper storage of packaged product • Follow the guidelines given by the supervisor • Report to the in-charge/supervisor in case of trouble		basic education		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Operating the tools/machine skillfully and taking due care while working.
- Handling the material and product as prescribed
- Knowledge of the use of packaging material for different product
- Proper storage of product
- Maintain the proper records

Managerial skill:

- Good communication skills for guiding helpers.
- Guide the helpers in proper storage and dispatch of the product

Soft Skills:

- Effective communication skill

4. Supervisor

Supervisor	Skill Gap			
• Manage the shop floor activities.	Tiny	Small	Medium	Large

• Responsible for running of unit and production • Planning for production schedule • Instruct the workers • Understand the end user requirement and design processes to incorporate the customer needs in the final product. • Get involved in quality control • Timely completion of the work • Reporting to the owner about daily work		• Lack of formal training • Lack of technical education • Lack of knowledge about latest technology		

Intensity of Skill Gap: Low

Skills Required

Technical Skills:

- Knowledge of the product and production process
- Knowledge of the rubber industry
- Knowledge of the current trends in rubber technology

Managerial Skills:

- Should be able to supervise the team and guide them so that quality is maintained
- Ability to schedule work and manage time
- Ability to motivate workers.

Soft Skills

- Effective communication skill
- Coordination skills
- Guiding skills

5. Helper

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Shift the material from the different process (i.e. mixing to press to cutting to packing to storing) • Carry out cleanliness and housekeeping activities as and when guided by the operators/supervisor. • Loading and unloading the rubber into the mixing mill • Powdering the sheet after the curing. • Finishing and packing the product in respective packing material. • Do all work as directed by the operators/supervisor		• Unskilled • Lack of technical knowledge • No formal training • Lack of basic education • Lack of knowledge about production process		

Skill Gap Intensity: High

Skills Required

Technical Skills:

- Knowledge of raw material handling (loading/unloading)
- Proper cutting, finishing and packaging
- Do all the work as directed
- Remove the moulds from the rubber in line with the guidance of the supervisor
- Proper handling of products

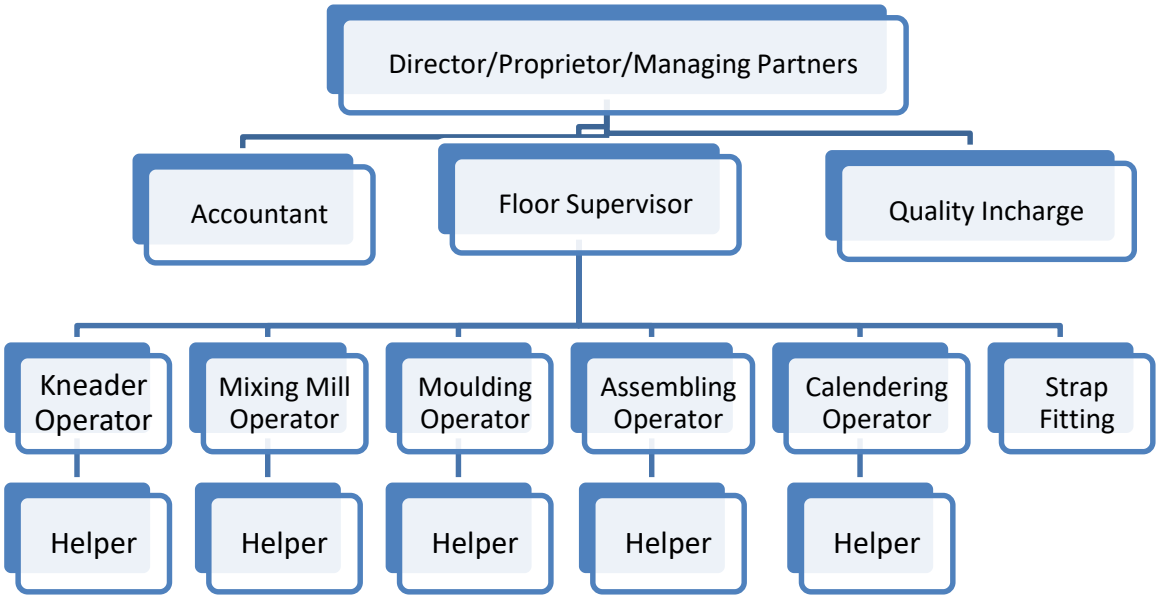
Soft Skills:

- Basic mathematical skills for product counting, identification of numbers etc.
- Good reading skills

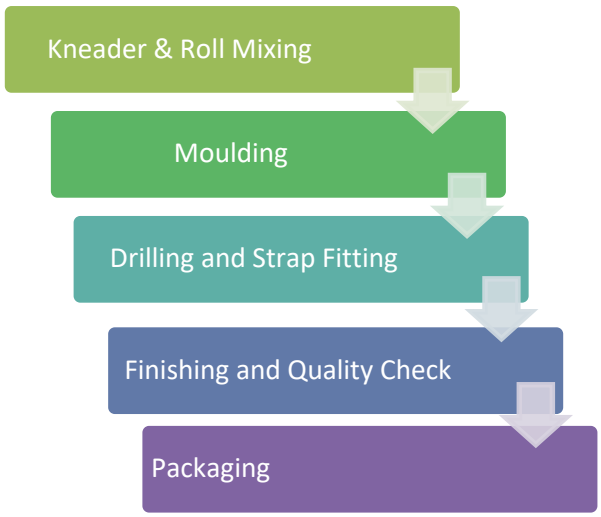
FOOTWEAR

The survey findings reveal that firms engaged in the production of footwear are not very much willing to expand their business in near future. There is a common view held by the firms that footwear industry is moving towards the greater use of PU. With respect to the employee recruitment, they easily find the requisite number of workers and do not face any shortage of worker in their units.

Organization Structure

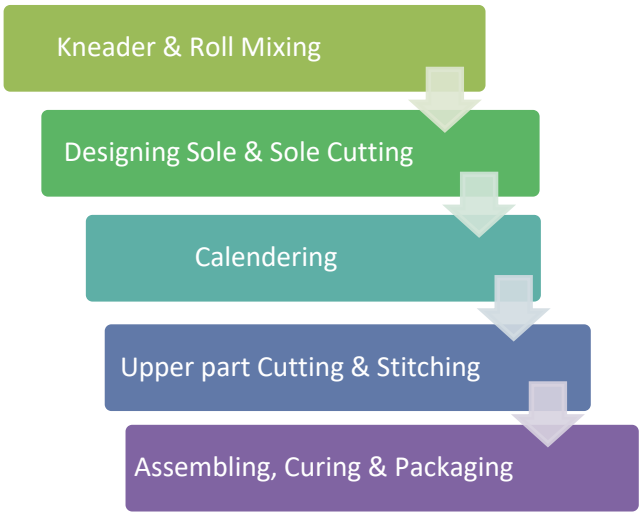


Process Outline: Hawai Chappal



Mixing is done in mixer (kneader), where all the chemicals are added into natural rubber and dough is prepared. Dough is transferred to rolling mills. Through rolling operation sheets are prepared. The compound is then ready for processing. It can be shaped through hydraulic press at specific condition of temperature, pressure. Vulcanization is done inside the press. The next step involves curing the shaped product very delicately. Curing improves the mechanical properties of the rubber and makes it hard. Finishing of the

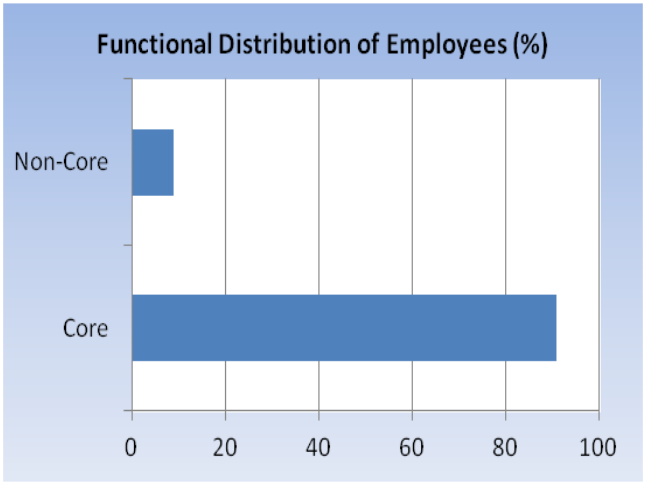
Process Outline: Canvas Shoes



final product is done before dispatch. In finishing operation extra unnecessary parts get cut. The produced goods are thoroughly checked for compliance to customer specification; tensile strength, flexural strength, aging, abrasion resistance is checked. Helpers pack the final product. However, the procedure for shoes production involves the process of calendaring after mixing of the raw material takes place. Stitching of the different parts, adhesive application as well as lace addition too is involved.

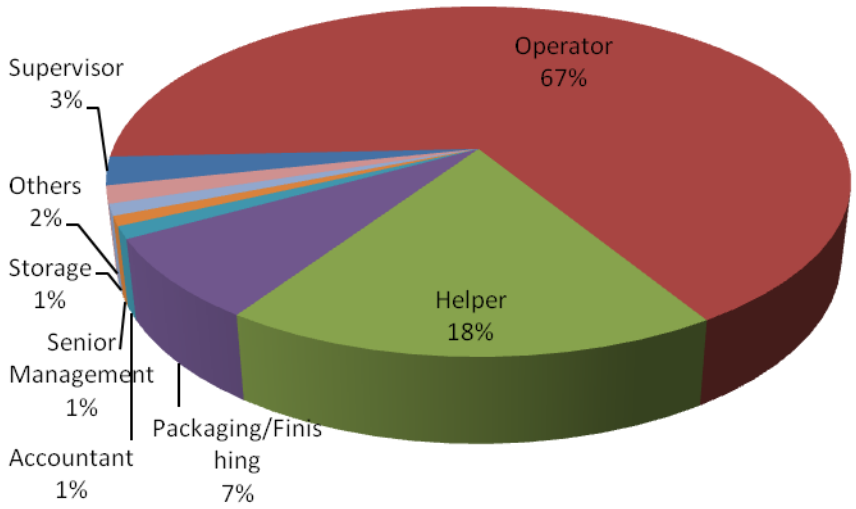
Sample Units	Tiny	Small	Medium	Large	Total
Footwear	-	9	-	-	9

Manpower at a glance



Two of the surveyed firms have 100 percent on roll employees in the surveyed units producing footwear, but all others have greater proportion of off roll employees. Majority of the employees are engaged in the core production activity, only 9 percent of the total employees are taking up the administrative and managerial tasks. There are employees coming to work in the manufacturing units of Rajasthan from the states of Uttar Pradesh and Bihar. In these units covered in the sample, the employees sourcing strategy is majorly common that is through employee's reference. Moreover, all the respondent firms mentioned that they experience very low rate of attrition that is less than 5 percent in their manufacturing units. Except for four respondent firms, others feel that there is a scope for transfer of roles in the activities carried out by the workers in their units; mainly they are trained for more than one job.

Job Role Distribution in Sample Units



Educational Qualifications (% of total employees)

Educational Qualification	Small
Ph.D/Research	-
Engineers	0.5
Graduate	10
Diploma Engineers	0.1
ITI/Vocational Education	0.4
XII/X/School Education	24
Below Xth standard	63
Others (CA, CS, ICWA, MBA etc.)	-

Training

Training department is not in existence for any of the firms surveyed in the footwear segment; however there are two firms which have relationship with the training institutes viz, FDDI and Indian Rubber Institute of Technology. All the respondent firms highlighted that they provide on the job training and no separate department is allocated for training.

Main Roles and Skill Gap

1. **Kneader Operator**

Kneader Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Operate mixing machine properly • Uniform mixing of material obtain so watch on machine operation. • Maintain the machine parameters i.e., temperature & pressure • Cleanliness and maintenance of machine • Co-ordinate with other operators and tem members		• No formal technical training. • Lack basic technical knowledge of properties of various inputs. • Lack of formal education		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Good understanding of the machine at work.
- Knowledge of identifying the chemicals to be added to raw material.
- Putting the chemicals in sequence.
- Basic maintenance of the machine (cleaning after each process)
- Clocking the kneader machine as per the rotation time given by supervisor
- Know the composition and required specification.
- Visual inspection of the compound to understand the condition.
- Avoid contamination of the compound.

Managerial skills:

- Good guiding skills for helpers so that wastage is minimal.

- Attentive towards the work process.
- Ability to take decisions.

Soft Skills:

- Knowledge of metric system like pressure temperature, time, to clock cycle
- Basic reading skills
- Good Communication skill

2. Mixing Mill Operator

Mixing Mill Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Guiding the helpers in unloading the material into the mixing machine. • Add additives and chemical in sequence and manner guided by the supervisor. • Maintain the machine parameters i.e. temperature & pressure • Cleaning the mill after each process. • Checking the safety while working on the machine.		• No formal technical training • Lack skills in machine operations		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Identify the operation of the machine at hand.
- Know the chemical and additives which need to be added.

Managerial skill:

- Good communication skills for guiding helpers.

Soft Skills:

- Basic metric system.

3. Moulding/Press Operator

Moulding/Press Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Operate the machine skillfully. • Checking that the moulds are properly fixed • Maintaining the temperature of the machine which has been set by the supervisor. • Maintain the machine. • Take care of safety while working on the process as per org. guidelines.(as the temperature is very high) • Get the cleaning of molds in timely manner and report any damage to the supervisor.		• No formal technical training. • Lacks basic education		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Good knowledge of machine and its operation.
- Change the moulds with the guidance of the supervisor
- Maintain the appropriate temperature and pressure at all times.

Managerial skill:

- Good communication skills for guiding helpers and coordinating with other operators.

Soft Skills:

- Good knowledge of metric system (time, temperature, pressure)

- Good reading skills

4. Assembling Operator

Assembling Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Assemble the different parts of the footwear skillfully. • Checking that the parts are properly fixed • Follow the guidelines of supervisor to attain the required specification • Maintain proper record of work done and material used • Handle the footwear for the next operation as per the procedure		• No formal technical training. • Lack basic education		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Good knowledge of various parts of footwear and assembling operation.
- Maintain proper record of material used and prepared products
- Send the footwear to the appropriate section/department for next process

Managerial skill:

- Good communication skills for guiding helpers
- Co-ordinate with other operators.
- Good organizational skills

Soft Skills:

- Good knowledge of metric system (time, temperature, pressure)
- Good reading skills

5. Helper

Helper	Skill Gap			
• Shift the material for the different process (i.e. kneading to mixing to press to cutting to slitting to packing to storing) • Clean the shop floor as and when guided by the supervisor. • Loading and unloading the rubber into the mixing mill • Powdering the sheet after the curing. • Packing the sheet/footwear in respective packing material. • Labeling of footwear • Do all work as directed by the supervisor	Tiny	Small	Medium	Large
		• Lacks technical knowledge • No formal training		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Proper finishing and packaging
- Do all the work as directed
- Remove the moulds from the rubber in line with the guidance of the supervisor

Soft Skills:

- Number identification skills on the carton (footwear/chappal size)
- Good reading skills

6. Supervisor

Supervisor	Skill Gap			
• Manage the shop floor activities.	Tiny	Small	Medium	Large

• Responsible for running of unit and production • Planning for production schedule • Understand the end user requirement and design processes to incorporate the customer needs in the final product. • Get involved in quality control		• Lack of formal training • Lack of technical knowledge		

Intensity of Skill Gap: High

Skills Required

Technical Skills:

- Knowledge of the rubber industry
- Knowledge of the current trends in rubber technology

Managerial Skills:

- Should be able to supervise the team and guide them so that quality is maintained
- Ability to schedule work and manage time
- Ability to motivate workers.

Soft Skills

- Effective communication skill

7. Cutting Operator

Cutting Operator	Skill Gap			
• To perform the cutting operation	Tiny	Small	Medium	Large

required at different stages in footwear production. • Operate the cutting tools and machine as per the requirement. • Co-ordinate with the other operators to achieve the desired specifications. • Put the parts at designated location.		• Lack formal training • Lack technical knowledge • Lack basic education		
Skill Intensity: Medium **Skills Required** **Technical Skills:** • Knowledge of cutting tools and machinery operation. • Mathematical and geometrical knowledge **Soft Skills** • Effective communication skill • Effective organizational skills				

8. Director/Proprietor

Director/Proprietor	Skill Gap			
	Tiny	Small	Medium	Large
• To formulate strategies for the business in the present and for the future years • To keep track of the activities within the firm. • Maintaining an ongoing dialogue with the employees of the company • Putting in place adequate operational planning and financial control systems.		• No skill gap manifested		

Skills Required

Technical Skills:

- **Ability to maintain relationship with all the employees**
- **In depth knowledge of the Industry**
- **Knowledge on latest technological trends in the industry**
- **Knowledge on the pricing strategies among competitors.**
- **In depth knowledge of the current govt. policies and business environment.**
- **Ability to take important decisions on daily basis**

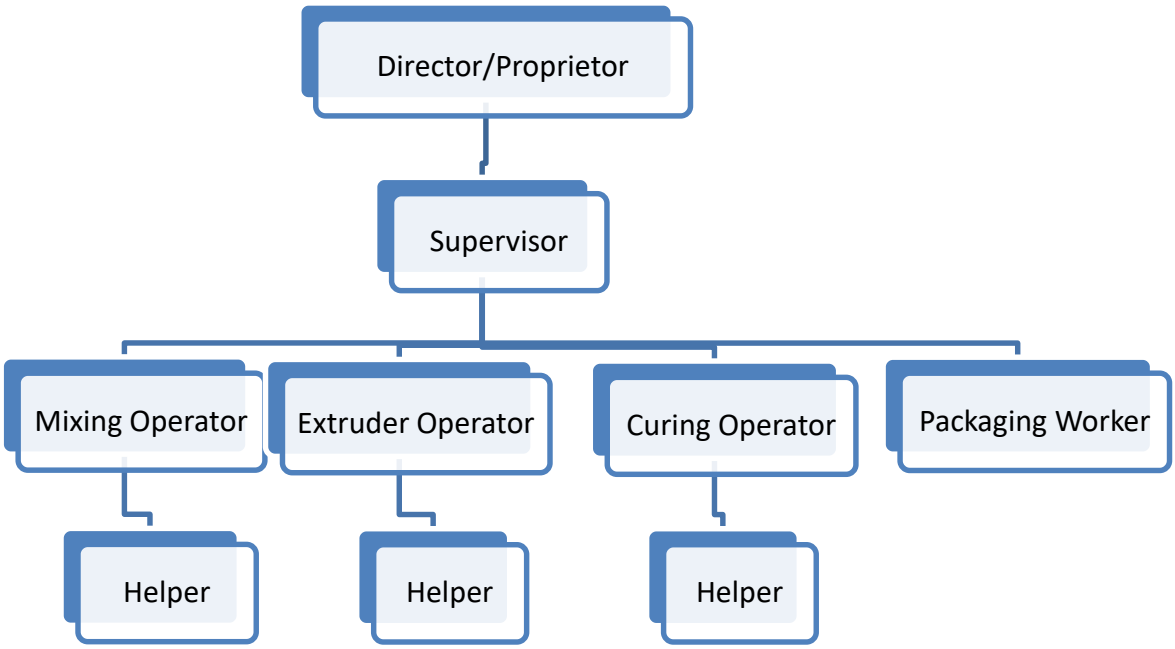
Soft Skills

- **Effective communication skill**
- **Leadership qualities**

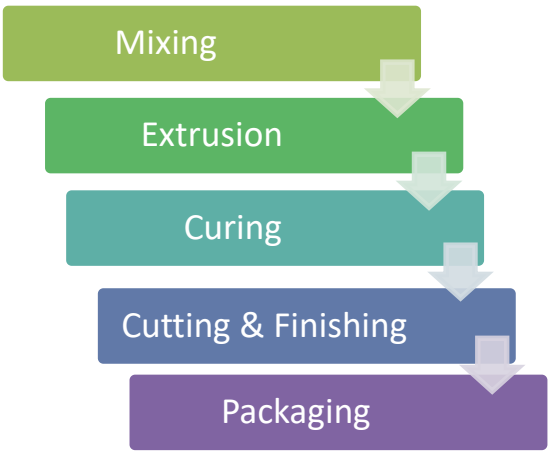
HOSES

All the respondent firms producing hoses mentioned that they do not face high attrition (less than 5 percent) and they recruit their employees from within as well as outside the state. Majorly the hiring from outside states is from Uttar Pradesh and Bihar. Firms mentioned that outside workers are more productive than local recruits. The survey findings reveal that all the firms are running the business for more than 20 years and follow internal references and direct interview as the main strategy for recruitment.

Organization Structure



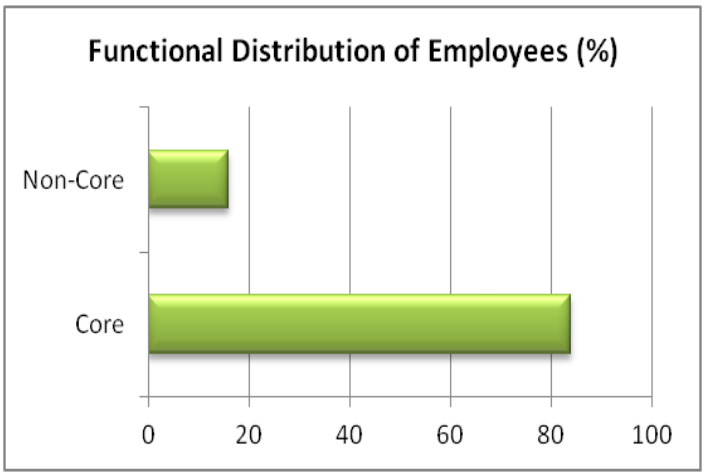
Process Outline:



Compound is obtained by mixing the raw materials in a mixing and milling machine. Extrusion is performed to shape out by placing it through die. Curing takes place to give strength to the pipe in vulcanizing machine. Cutting of the product as per the specification is done and it is given finishing touches. The produced goods are thoroughly checked for compliance to customer specification. The finished products are then packed and made ready to deliver.

Sample Units	Tiny	Small	Medium	Large	Total
Hoses	-	7	-	-	7

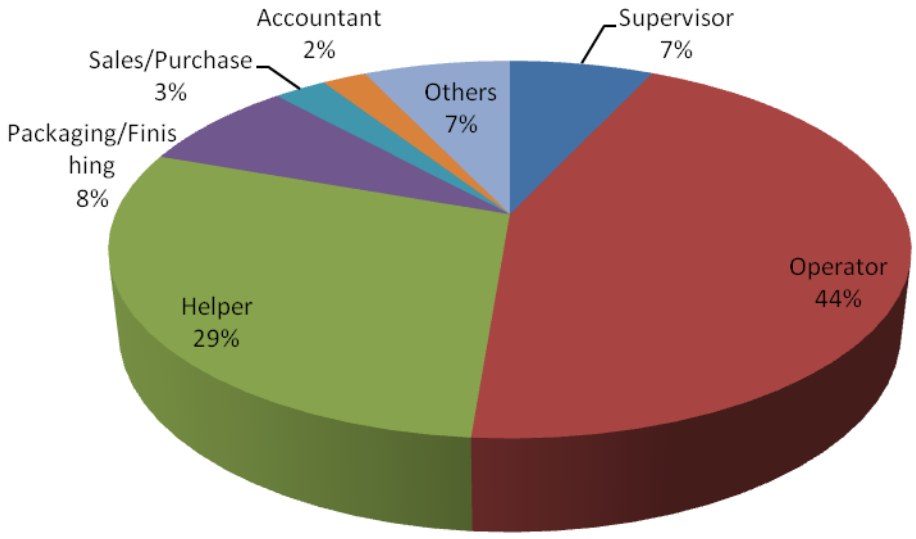
Manpower at a glance



Only for one firm all the employees are recruited on roll whereas majority of the firms have greater number of off roll employees as per the information shared by the firms regarding this aspect of its employee's recruitment. Majority of the employees are engaged in the core production activity, only 15 percent of the total employees are taking up the administrative, accounting and managerial tasks. All the firms mentioned that workers are easily available and there is no shortage of manpower. The transfer of roles is noticed in half of the surveyed firms as the workers handle multiple tasks. Except one firm, all others follow standard operating procedures in this segment of the industry and they revise it as per the requirement.

There is no single employee in the rubber hoses producing firms who have vocational educational qualification. No one in this segment has opted for any specialized education.

Job Role Distribution in Sample Units



Training

Training department is not in existent for any of the surveyed firms producing hoses also there is no relation with any training institute of these firms. All the responding firms highlighted that there is a need to train manpower in all the segments of production. All the firms are providing on the job training to their employees.

Educational Qualifications (% of total employees)

Educational Qualification	Small
Ph.D/Research	0.5
Engineers	-
Graduate	12
Diploma Engineers	0.2
ITI/Vocational Education	-
XII/X/School Education	28
Below Xth standard	58
Others (CA, CS, ICWA, MBA etc.)	1.3

Main Roles and Skill Gap

1. Mixing Operator

Mixing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Check the chemicals • Prepare batches as per instructed. • Maintenance of the machine. • Report to Production In-charge • Guiding the helpers in unloading the matrial into the mixing machine. • Add additives and chemical in sequence and manner guided by the supervisor.		• No formal technical training • Lack basic technical knowledge of properties of various inputs.		

• Switch on the machine and the clock the cycle which has been set by the supervisor. • In case of any issues raise alarm to the supervisor • Maintain the safety aspects as shared by the supervisor • After mixing, get the compound checked		•Lack of knowledge to operate the machine		

<u>Intensity of skill gap: Medium</u>

Skills Required

Technical Skills:

- **Knowledge about the chemicals.**
- **Ask for any help and report to the works in charge.**
- **Operate the machine skillfully.**
- **Attentive towards the work process.**
- **Know the composition and required specification.**
- **Visual inspection of the compound to understand the condition.**
- **Avoid contamination of the compound.**

Managerial skills:

- **Guiding the helpers for routine work**
- **Ability to communicate with the plant in-charge in case of any faults or technical issues**

Soft Skills:

- **Good communication skills**
- **Good listening skills.**
- **A quick learner and clearly understand and implement what the Supervisor /Proprietor say**

2. Extruder Operator

Extruder Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Maintenance of the machine. • Running the extruder • Know the dimensions of the required product. • Setting parameters of the machine. • Undertake visual inspection of the prepared product. • Sending it for further processing. • Precautions to be taken to avoid accidents		• No proper training on the machine • Lack of technical training		

Skill Intensity: Medium

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Should be able to follow the guidelines
- Handling of equipments properly
- General maintenance skills

Managerial skill:

- Good communication skills for guiding helpers.
- Guide the helpers in proper loading and unloading of material

Soft Skills:

- Effective communication skill
- Quick learner
- Basic arithmatic

3. Curing Operator

Curing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Proper Maintenance of the press. • In case of any problems should immediately report to the proprietor/supervisor • Maintain the temperature as guided by the proprietor/supervisor. • Take care of safety issues • Check the product for any defect		• Lack of proper knowledge about rubber • Lack of formal training • Lack of basic education		

Skill Intensity: Medium

Skills Required

Technical Skills:

- Knowledge of setting the parameter
- Knowledge of various controls
- Knowledge of impact of temperature
- Pressure duration of exposure to heat on the final product's properties

Soft Skills:

- Good knowledge of metric system (time, temperature, pressure)
- Good communication skills
- Interpersonal skill

3. Packaging Worker

Packaging Worker	Skill Gap			
	Tiny	Small	Medium	Large
• Proper Maintenance of the				

packaging material and tools. • In case of any problems should immediately report to the proprietor/supervisor • Labelling and storage of product • Take care of safety issues		• Lack of technical training • Lack of basic education		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Thorough knowledge of working with packaging material.
- Knowledge of various tools and proper storage

Soft Skills:

- Good knowledge of metric system
- Good communication skills
- Interpersonal skill

5. Supervisor

Supervisor	Skill Gap			
	Tiny	Small	Medium	Large
• Manage the shop floor activities. • Responsible for running of unit and production • Planning for production schedule • Understand the end user requirement and design processes to incorporate the customer needs in the final product. • Get involved in quality control		• Lack of latest technology used in rubber sector • Lack of formal training		

• Resource Management • Give Technical Instruction – machine & job • Safety issues				

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Knowledge of the rubber industry
- Knowledge of the current trends in rubber technology

Managerial Skills:

- Should be able to supervise the team and guide them so that quality is maintained
- Ability to schedule work and manage time
- Ability to motivate workers.

Soft Skills

- Effective communication skill

6. Helper

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Shift the material from the different process (i.e. mixing to press to cutting to packing to storing) • Clean the shop floor as when guided by the supervisor. • Loading and unloading the rubber into the mixing mill • Do all work as directed by the supervisor		• Lacks technical knowledge • No formal training		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- **Proper loading and unloading**
- **Do all the work as directed**

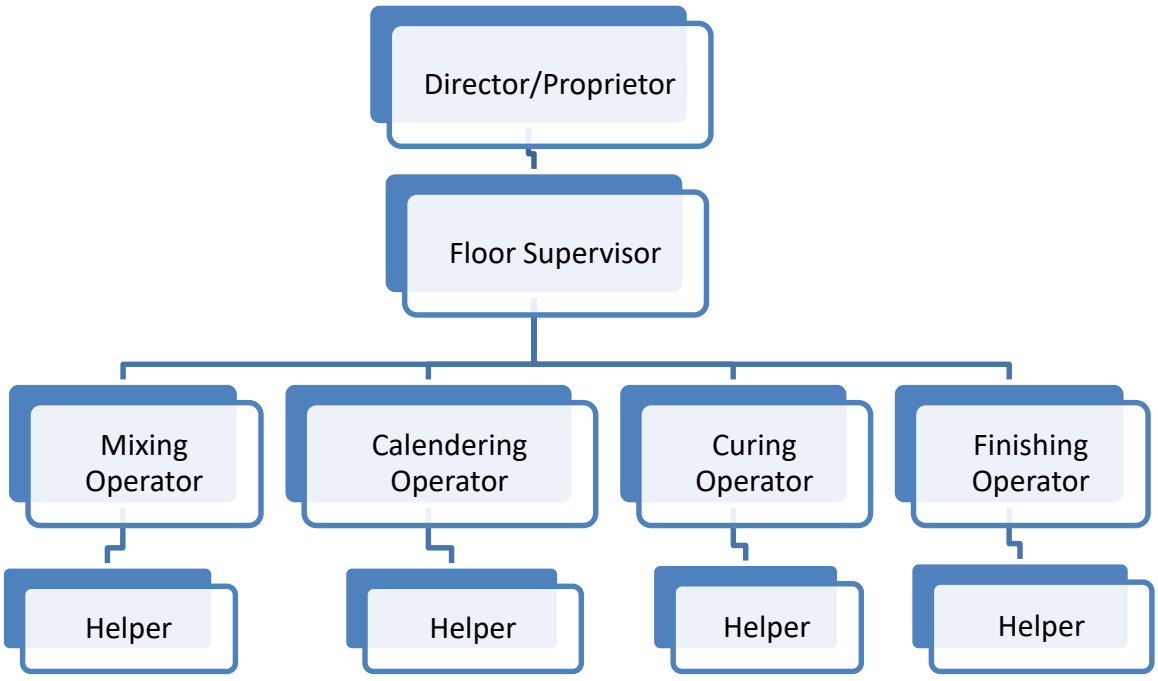
Soft Skills:

- **Basic mathematical skills for product counting, identification of numbers etc.**
- **Good reading skills**

RUBBER BELT

All the respondent firms producing rubber belts (conveyor and V belts) mentioned that they do not face high attrition and they hire their employees on roll as well as off roll. The survey findings reveal that these small scale firms direct interview as the main strategy for recruitment and hire employees from within the state, UP and Bihar. The firms have the plans to expand same line of business in future either moving on to large scale of operation or enter specialized beltings.

Organization Structure



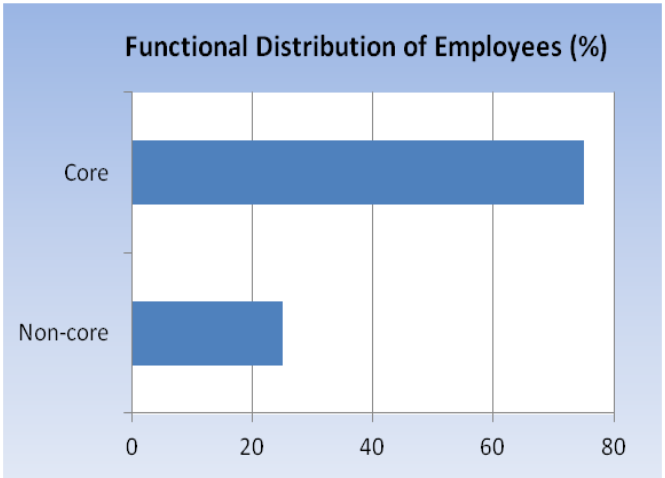
Process Outline:

Compound is obtained by mixing the raw materials in a mixing and milling machine. Rubber strips are made to be put in the hydraulic press. Hydraulic press is used for moulding the rubber strips into belts & conveyers. Hydraulic press requires setting the temperature, pressure and timing for the mould. Curing takes place within the process. Once the belts & conveyer is out of the hydraulic press, it is given finishing touches by cutting of the extra rubber present. The produced goods are thoroughly

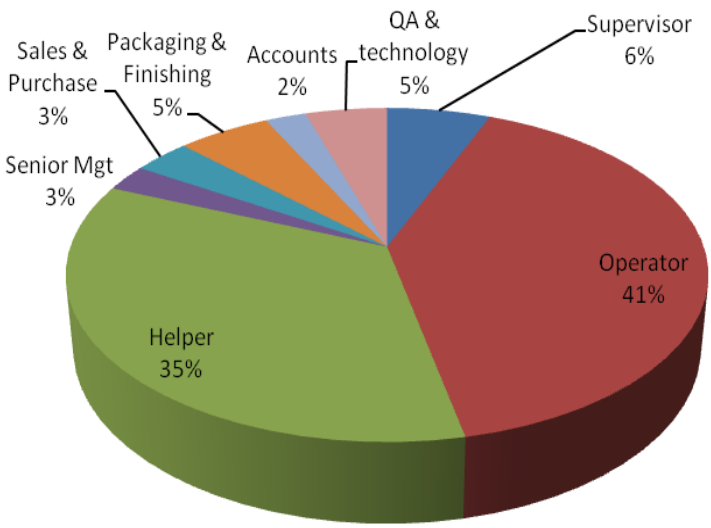
checked for compliance to customer specification. The finished products are then packed and made ready to deliver.

Sample Units	Tiny	Small	Medium	Large	Total
Rubber Belt	-	4	-	-	4

Manpower at a glance



Two-third of the employees are recruited on roll in the select rubber belt producing firms in the state, there are one third of the firms recruiting its employees off roll. Three fourth of the employees are engaged in the core production activity whereas rest of the total employees are taking up the administrative, accounting and managerial tasks. In the units covered in the sample, the information shared about their employee classification has helped in identifying the proportion of different level of employees in this segment. The main job role is for operators in the belt manufacturing units. Basic knowledge about rubber and its manufacturing are found missing in the operators working in the belt manufacturing units. Next popular level of employment is for helpers.



The transfer of roles is reported by half of these respondent firms as the workers handle multiple tasks. However, there is no scope of transfer of roles in rest of the firms. Standard operating procedures are followed by half of the surveyed firms in this segment of the industry and SOPs are revised as per requirement.

Educational Qualifications (% of total employees)

Educational Qualification	Small
Ph.D/Research	0.2
Engineers	3.3
Graduate	11
Diploma Engineers	2.5
ITI/Vocational Education	1
XII/X/School Education	32
Below Xth standard	50
Others (CA, CS, ICWA, MBA etc.)	-

Training

Training department is not in existence for any of the firms surveyed in the rubber belts segment. The responding firms highlighted that there is a need to train mixing and press operator, however they do provide on the job training. Moreover, there is no relation with any training institute of these three firms.

Main Roles and Skill Gap

1. Mixing Operator

Mixing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Check the raw material • Prepare batches as per instructed. • Maintenance of the machine. • Report to Production In-charge • Guiding the helpers in unloading/loading • Add additives and chemical in sequence and manner guided by the supervisor. • Authority to stop the production		• Lack of formal education • Lack of knowledge about rubber		

in case of any quality issues • Maintain the safety aspects as shared by the supervisor • Follow standard operating procedures				

Intensity of skill gap: Medium

Skills Required

Technical Skills:

- Knowledge about the chemicals and rubber.
- Operate the machine skillfully.
- Attentive towards the work process.
- Know the composition and required specification.
- Visual inspection of the compound to understand the condition.
- Avoid contamination of the compound.
- Quality Awareness

Managerial skills:

- Guiding the helpers for routine work
- Ability to communicate with the plant in-charge in case of any faults or technical issues

Soft Skills:

- Good communication skills
- Good listening skills.
- A quick learner and clearly understand and implement what the Supervisor /Proprietor say
- Ask for any help and report to the work-in-charge.

2. Calendaring Operator

Calendaring Operator	Skill Gap			
• Maintenance of the machine.	Tiny	Small	Medium	Large

• Running the calendars • Knowledge of Calendering cushions, cord rubberizing, frame making • Know the dimensions of the rubber sheet. • Setting time & required temperature. • Once calendaring of the sheet is done, visual inspection is done, re-adjusted. • Wrapping it up for further processing. • Precautions to be taken to avoid accidents		• Lack of formal education • Lack of technical training		

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Should be able to follow the standard operating procedures
- Handling of equipments properly
- General maintenance skills

Managerial skill:

- Good communication skills for guiding helpers.
- Guide the helpers in proper loading and unloading of material

Soft Skills:

- Effective communication skill
- Quick learner
- Basic arithmatic

3. Curing Operator

Curing Operator	Skill Gap			
• Operate the curing machine • Set the temperature and heat pressure control • Check proper functioning of machine and maintenance of the press. • Shut down production in case of quality problem and immediately report to the production manager • Take care of safety issues	Tiny	Small	Medium	Large
		• Lack of technical knowledge • Lack of basic education		

Intensity of Skill Gap : Medium

Skills Required

Technical Skills:

- Thorough knowledge of curing process and working of press.
- Maintain the appropriate machine parameters during the process.
- Knowledge of various controls
- Knowledge of impact of temperature
- Pressure duration of exposure to heat on the final product's properties

Soft Skills:

- Good knowledge of metric system (time, temperature, pressure)
- Good communication skills
- Interpersonal skill

4. Supervisor

Supervisor	Skill Gap			
• Manage and control production	Tiny	Small	Medium	Large

activities. • Planning for production schedule • Instructing/guiding operators • Understand the end user requirement and design processes to incorporate the customer needs in the final product. • Get involved in quality control • Resource Management • Give Technical Instruction – machine & job • Safety issues		• Lack of formal training in rubber sector • Lack of technical knowledge		

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

- Knowledge of the rubber industry
- Knowledge of the current trends in rubber technology

Managerial Skills:

- Should be able to supervise the team and guide them so that quality is maintained
- Ability to schedule work and manage time
- Ability to motivate workers.

Soft Skills

- Effective communication skill

6. Helper

Helper	Skill Gap			
• Shift the material for the	Tiny	Small	Medium	Large

different processes • Clean the shop floor as and when guided by the supervisor. • Loading and unloading the material • Finishing and packing the product in respective packing material. • Help in product dispatch • Do all work as directed by the supervisor/operator		• Lack of formal training • Lack of basic education • Lack of technical education • No or very little knowledge about rubber		
Skill Gap Intensity: High **Skills Required** **Technical Skills:** • Proper finishing and packaging • Do all the work as directed • Pay attention towards direction • Consistency in work **Soft Skills:** • Basic mathematical skills for product counting, identification of numbers etc. • Good reading skills • Discipline				

8. Quality Technician

Quality Technician	Skill Gap			
• To check finish product by visual inspection and quality tests and	Tiny	Small	Medium	Large

procedures as per the standards • To perform the various documentation functions. • Identify the process where defects are originating.		•No skill gap manifested	•No skill gap manifested	

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Knowledge of testing procedures
- Knowledge of lab equipment and its handing
- Knowledge lab chemicals and preparations

Soft Skills:

- Good communication skills

HUMAN RESOURCE REQUIREMENT

In the rubber industry, there are people employed mainly in the two main segments i.e. tyre and non-tyre manufacturing. In addition to this, there are a large number of human resources engaged in the repair and maintenance of the tyre and tube which forms an important segment of employment for the rubber industry in the country. Here, we first attempt to estimate the current employment in the rubber industry in the state of Rajasthan which forms the basis of our estimation for the human resource requirement in the coming years.

A1. Employment in Rubber Industry

Around 1.2 lakh people are estimated to be engaged in the rubber industry in the state of Rajasthan. The employment for the following segments have been considered to arrive at the workforce associated with the rubber industry.

a) Tyre and Tube Companies
b) Non-tyre companies
c) Repair and Maintenance
d) Recycle, Reuse and Waste

As the tyre and tube manufacturing firms are mainly operating in the organized segment, the employment in these firms has been estimated based on the industry feedback. The employment for the firms engaged in the non-tyre segment has been arrived on the basis of data collected in the survey conducted for the rubber industry by the RSDC. However, the repair and maintenance segment employment is estimated considering the various parameters such as road network in the country, number of villages and number of petrol pumps. An emerging segment of recycle, reuse and waste accounts for an estimated 3 percent of the total employment in the industry in the three segments discussed above.

A2. Future Requirements

Human resource requirement in any industry in coming years depends on the expansion of existing units, setting up of new units and development in technology in use. In addition, to this the overall growth of the state economy, manufacturing sector and social development are important factors facilitating growth in any industry and thus the employment. An estimation based on responses collected in the sample survey regarding their expansion plans, automation; recently set up major tyre plants and expansion in coming year;, and other factors such as GSDP, Manufacturing sector growth, capital investment and HDI, has been attempted to highlight the human resource requirement in the rubber industry in the state.

A forecast for the human resource requirement in next five years is presented below to indicate the future trend in the rubber industry in the largest state of the country, i.e. Rajasthan.

Table6.1: Five Year Forecast	
Category	**Incremental Human Resource Requirement**
1. Auto tyres & tubes*	10845
2. Camel back	706
3. Footwear	935
4. Belts and hoses	615
5. Latex foam	247
6. Dipped goods	359
7. Others@	963
Total	**14670**

Human Resource Requirement in the tyre segment is estimated based on the recently started large tyre plants in the state and on-going projects in this segment. Moreover, the growth in the state domestic product and manufacturing segment in the state, rubber consumption, positioning of human development index and capital investment in the last five years is considered to arrive at the estimated requirement for the human resources in the various segments. The estimation for the category of Auto tyre and tubes includes requirement in the Repair and Maintenance segment as well as Recycle, Re-use and Waste segment.

The incremental human resource requirement for almost 14,670 workers in the rubber industry in the state is based on the trends witnessed in the past, the current industry scenario and survey responses received from the respondent firms. The estimations provide a direction of change, however, in an ever changing environment in which the production takes place the exact requirement may vary as the time unfolds.

It is estimated that in the coming five years, we may witness an overall 22 percent increase in the employment in the rubber industry in the state.

Taking a note of the job role requirement in the manufacturing units, the survey feedback underlines the main requirement of skilled operators in coming years. Moreover, the fact that the firms are looking towards the modernization and automation, there will be greater demand for operators handling automatic machines. Table 6.2 provides a direction for the industry requirement under the major job category in the state. At the operator level, the highest demand would be emerging for mixing operators. Skilled operators would find greater opportunities knocking at their door in the manufacturing segment.

Table 6.2: Job Role wise Requirement	
Job Role	**% of human resource requirement**
Supervisor	4
Manager	5
Operator	*50*
• *Mixing*	*16*
• *Curing*	*14*
• *Moulding*	*9*
• *Cutting*	*6*
• *Extruder*	*5*
Helper	25
Packaging/Dispatch	6
QC	5
Office/Marketing	5