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RSDC
RUBBER SKILL DEVELOPMENT COUNCIL

SKILL GAP ANALYSIS

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Chapter Scheme

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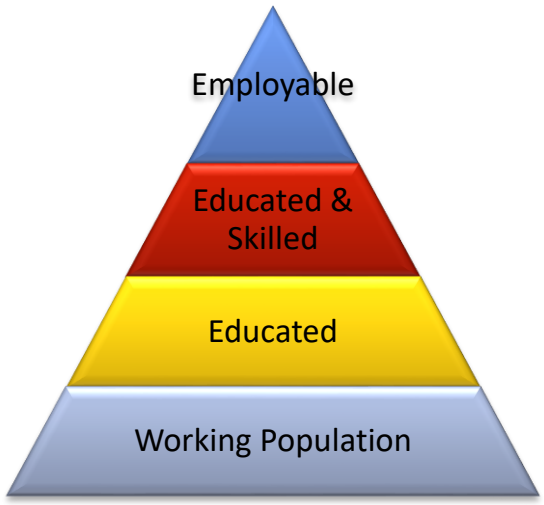
INTRODUCTION

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.

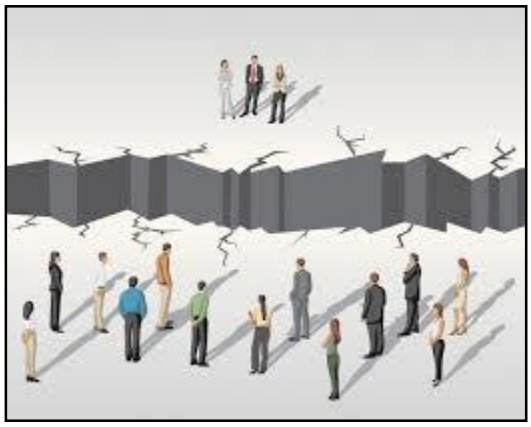
Tailor-made, need-based programmes would be initiated for specific age groups which can be like language and communication skills, life and positive thinking skills, personality development skills, management skills, behavioural skills, including job and employability skills. The course methodology of '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:

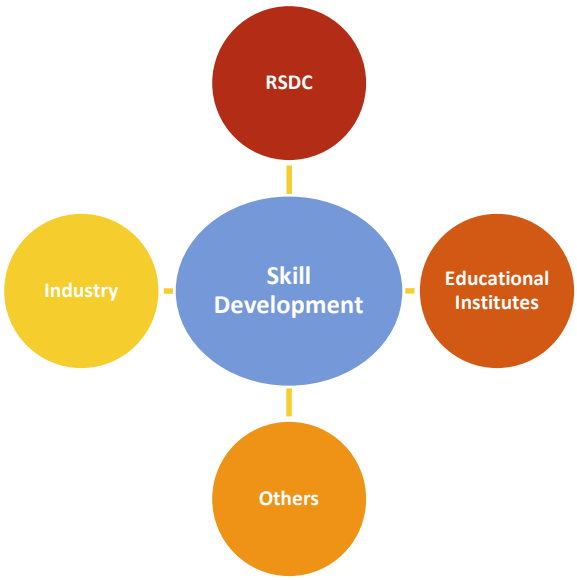
- Helps to define the skills required in the industry at present and in future
- Make employees aware about the critical skill they will need to develop/learn
- Helps in recruitment effort when current employee do not possess the required skills for the specific job role

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/unorganised 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 organisations 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 central state of India, let's have a look at the trends in rubber industry in the state in focus, i.e. Madhya Pradesh 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. Madhya Pradesh 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.

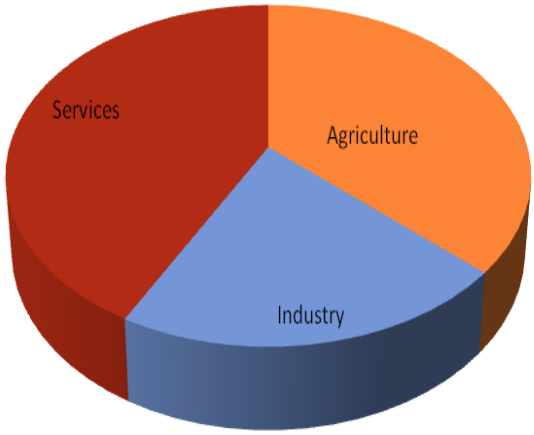
A1.State Economy

Located in the central India, the state of Madhya Pradesh with over 72 million inhabitants is the fifth largest state in the country by population. However, the population of Madhya Pradesh 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 230 which is much less than the national average. India's second largest state is primarily an agricultural economy. Majority of the population resides in villages, whose main occupation is agriculture. Industrial development is mainly concentrated in select districts such as Indore, Bhopal, Gwalior and Jabalpur.

Fig 2.1: Heart of the Country: Madhya Pradesh

The state is bound on the north by Uttar Pradesh, the east by Chhattisgarh, the south by Maharashtra and the west by Gujarat and Rajasthan. The state has a population growth rate of about 20 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 about 70% which is very close to the national average but it is something 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 930 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 remained very low during 1999-2008. However, the state economy has witnessed an improvement in the last few years. It is among the fastest growing states in the country. According to the latest estimates, the economy of Madhya Pradesh has registered double digit growth (12.21 percent) in the year 2016-17. The primary, secondary and tertiary sector contribute 34 percent, 21 percent and 39 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 27 percent to 21 percent) in the last decade. The agriculture sector employed 62% of the state's population, followed by the services (33%) and manufacturing (5%) sectors.

Table 2.1: State of Growth

Year	GSDP* (at constant prices)	Growth Rate (%)
2011-12	315561	..
2012-13	351461	11.38
2013-14	364197	3.62
2014-15	383994	5.44
2015-16	414607	7.97
2016-17	465212	12.21

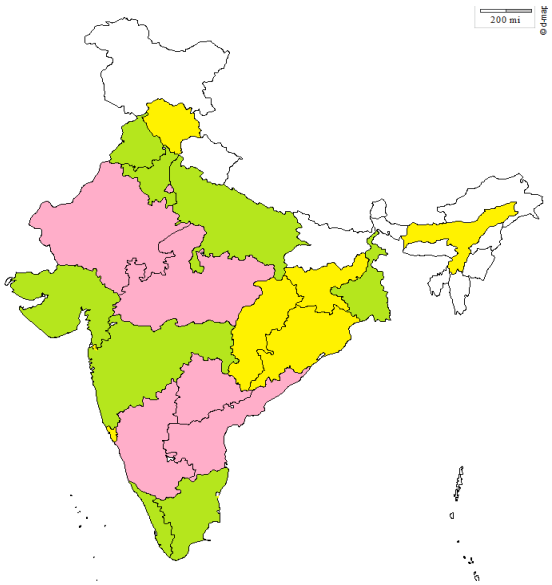
Source: CSO
*GSDP in Rs. crore at 2011-12 prices

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. Madhya Pradesh 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: Madhya Pradesh

In the land locked state of the country, the total registered rubber manufacturing firms are very less (less than 100) 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.

Table 2.3: Manufacturers Status

Year	No. of licensed manufacturers		
	MP	Kerala	India
2011-12	61	760	4386
2012-13	58	724	4334
2013-14	59	724	4350
2014-15	72	734	4307
2015-16	66	744	4363

Source: Rubber Board

Indore is the major centre of rubber product manufacturing in the state of Madhya Pradesh. There are many other districts as well where different types of rubber products are manufactured, however the number of units is not very large. Tyre, tube and flap as well as tread rubber products are the leading segment 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 mainly in the following districts in the state:

a)Indore
b) Bhopal
c) Gwalior
d) Ratlam
e) Ujjain
f) Betul
g) Dhar
h) Chhindwara
i) Raisen
j) Katni
k) Satna
l) Sidhi
m) Singrauli

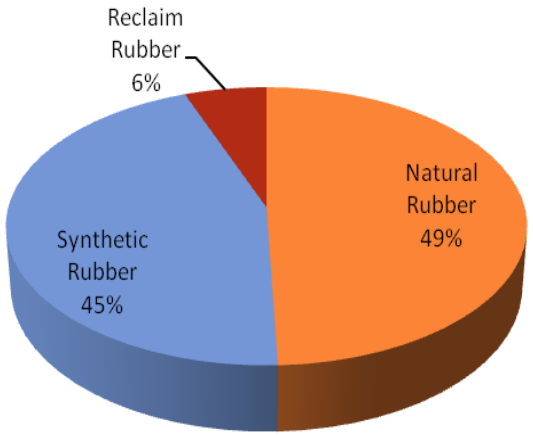
A4.Rubber Consumption in Madhya Pradesh

On an average, the annual total rubber consumption in the state remained at 68,500 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 66,310 tonnes of rubber in the year 2014-15 comprised of 32,750 tonnes of natural rubber; 29,710

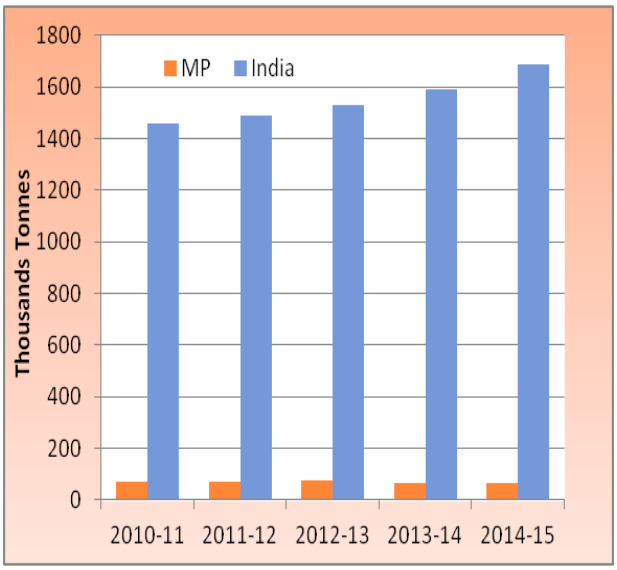
tonnes of synthetic rubber and 3,850 tonnes of reclaimed rubber. Tamil Nadu, Kerala, Maharashtra, Gujarat and Andhra Pradesh are the top five rubber consuming states in the country. In the year 2014-15, Madhya Pradesh stood at the ninth position in the list of rubber consuming state in India.

Fig 2.4: Rubber Product Manufacturing Units in MP

*Rubber Manufacturing Districts highlighted in Blue



Source: Rubber Board



Source: Rubber Board

The total consumption of rubber in the year 2014-15 for the central state stood at 3.9 percent of the total rubber consumption in India. For the state of Madhya Pradesh, natural and synthetic rubber constituted 3.2 percent and 5.5 percent of the total national consumption in the respective segment while share of reclaimed rubber consumption for the state constituted 3 percent of the total reclaimed rubber consumption for India.

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 24 units has been conducted. The next chapter presents the details, analysis and findings of the skill gap study in the state.

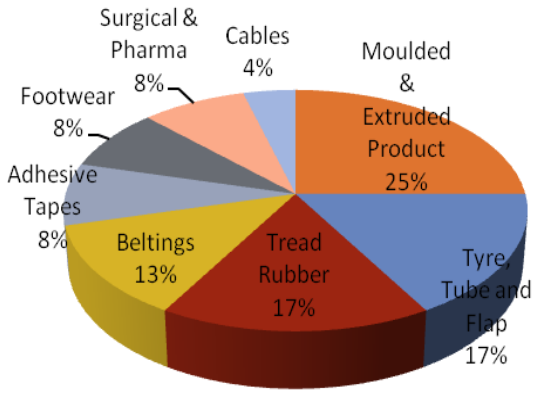
SURVEY INSIGHTS

This chapter provides an insight into the status of human resource employed in the rubber industry in the state of Madhya Pradesh. 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 24 rubber product manufacturing firms involved in the production of adhesive tapes, belts, cable, footwear, tread rubber, pharma products, sports goods, tyre, tube and flap, moulded and extruded rubber products. The firms belonging to the following cities provided their inputs for undertaking the skill gap analysis in the state:

- Indore
- Katni
- Pithampur
- Satna
- Sausar
- Waidhan

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 Madhya Pradesh.

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.:

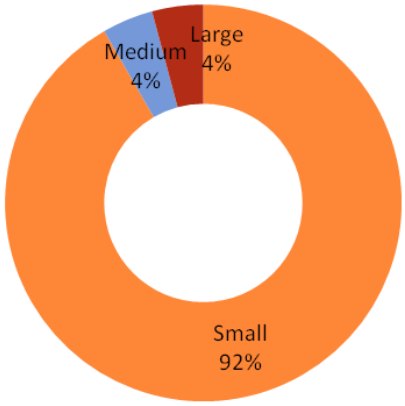
a) Current Status
b) Issues/Concerns
c) Possible Actions

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 is 92 percent small scale, 4 percent medium scale and 4 percent large scale firms according to their total investment in the business. However, the total turnover varies as compared to the total investment of the firms.

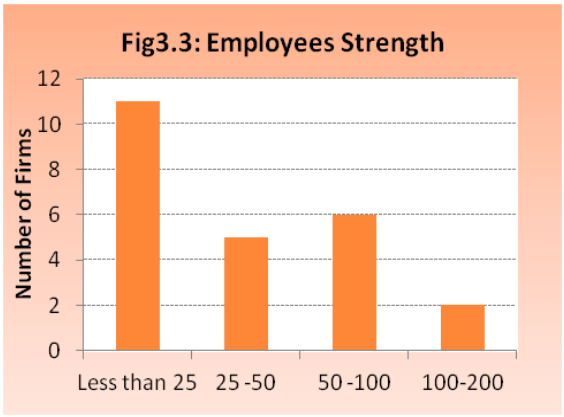
Fig 3.2: Investment



The turnover of the surveyed small scale firms ranges between less than a crore to 100 crores. However, each of the entrepreneurs surveyed in the state are handling manufacturing of rubber products only for one production unit.

Except for the footwear and tube manufacturers, majority of the firms do not envision any major change in the production in their respective segments of rubber product manufacturing. The change in footwear section is related to shifting to poly urathine footwear manufacturing whereas for tubes, it is in favour of butyle rubber tubes production.

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. The employment pattern reveals that except for two firms, all the firms investing upto 5 crores (small scale) employ less than 100 persons. It has been noticed that fifty percent of the small scale firms have less than 25 employees. Medium and large scale firms employ relatively larger number of employees ranging from 50 to 100. A small 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 eighty years. There has been a clear tilt towards the small scale firms in the industry in the state over the years. 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 Madhya Pradesh and majority of them during 1975-2000.

Table 3.1: Periodic Table

Year of Establishment	Number of Firms		
Respondent Firms	Small	Medium	Large
1925-1950	1		
1950-1975	1		1
1975-2000	14		
2000-2015	4	1	
NR	2		

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

A2. Recruitment Strategy

Majorly, the firms engaged in rubber industry are interested in hiring 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 Madhya Pradesh depicts that 96 percent of the surveyed firms have hired all the employees on their roll and only one firm has 25 percent off roll employees.

Table 3.2: Basis of Employment

Percentage of on roll employees	Surveyed Firms (%)
0-25	4
25-50	-
50-100	-
100	96

No single firm has all employees hired on off roll basis. The firm which has off roll employees is engaged in manufacturing of moulded products, auto parts and transformer parts do not indicate any correlation with the size of the production and investment by them.

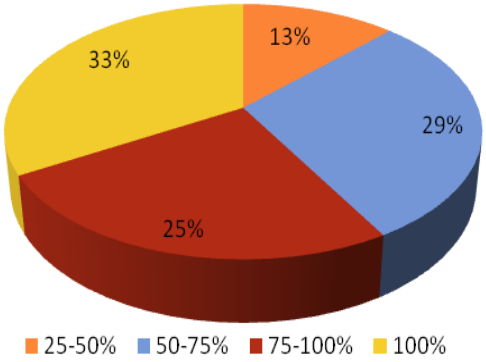
The most effective method of employing workers in the industry is through internal references and direct interview for almost all of the surveyed firms. However, there is no single surveyed firm which reported that they are using the consultancy, placement agency and their HR department to get the relevant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

A2.1 Employees Recruitment

Among the total firms surveyed in the state, it has been noticed that 33 percent of them

have recruited all the employees from Madhya Pradesh only. These are mainly moulded and extruded products manufacturing firms. There are employees coming from other states to work in rubber product manufacturing firms for two-third of the surveyed firms, however the percentage of employees coming from outside varies for different segments of the industry. The employment trend depicts that majority of the respondent firms preferred recruiting the employees from outside have their origin from the state of UP, Chhattisgarh, Jharkhand and Bihar. Maharashtra and Delhi do contribute to the workforce engaged in the surveyed rubber industries in Madhya Pradesh though in a very small proportion. Importantly, there is no organization which has recruited all the workers from outside the state.

Fig 3.4: Employment Pattern: Employees from MP



Easy availability and efficiency are the main reasons listed by the firms hiring the people mainly from the neighbouring states. However, some of them have not mentioned any specific reason for hiring from outside Madhya Pradesh.

The main job positions for outside people are for operator and helper level while half of the respondent firms have not specified any specific job role for them. Majority of the firms have clearly mentioned that outside people are easily available and show less absenteeism that means they are more regular.

A2.2 Attrition Trend

A noticeable trend related to the employment in the rubber products manufacturing unit is that the employees remain associated with the organizations for longer periods irrespective of the total number of people employed as a low level of attrition has been reported by 95 percent of the firms. Such trends are similar for small, medium and large scale firms. Also, the firms established in the 21st century and that operating for more than 20-25 years, employee's attrition has remained low.

Table 3.3: Attrition Rate

0- 10 %	•92%
More than 10%	•8%

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

Skilled manpower is more valuable as compared to their unskilled counterparts and therefore it becomes important for firms to retain the skilled workers with them. However, 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 half of the firms do not have any retention strategy. For rest of the firms, it is the monetary aspect related to pay, bonus and increment as well as good working conditions which play an important role in encouraging people to remain associated with them for a longer period.

Table 3.4:Retaining Employees

Retention Strategy	Firms Response (%)
No retention Strategy	50
Good pay, increment, bonus and facilities	46
Basic Employees facilities	4

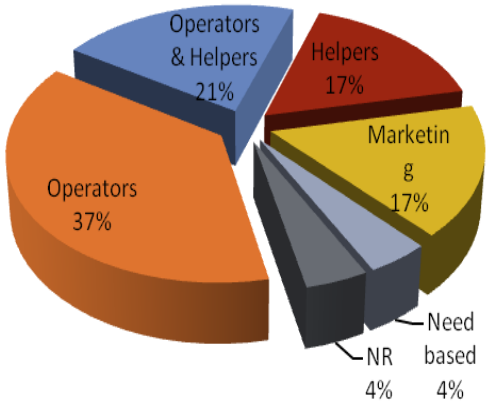
No firm has given importance to long term career growth plan as their retention strategy.

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 operator level. Next level for main recruitment is for helpers. It is important to note that nearly one sixth of the respondent firms mentioned the there is a requirement for people for undertaking marketing role. However, it is interesting to note that no firm has highlighted any requirement for supervisory role and non-core activities specific to quality assurance.

Fig 3.5: Key Job Role Requirement



In Madhya Pradesh , finding requisite number of people for carrying out the rubber products manufacturing by the firms is a major concern for 83 percent of the respondent firms. However, the shortage of skilled manpower has been identified as a common problem by those firms. There are very few firms which do not face difficulty in hiring operators and helpers.

It is interesting to note that neither a single firm has mentioned about the supervisor's role for recruitment nor they face any problem in hiring people for supervisory role. Based on the responses of the firms, it has been pointed out that people remain

associated for the firms for longer duration and thus, it is believed that the requirement for supervisory role does not emerge.

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 85 percent of the firms surveyed are hiring 80 percent or more of their total employees in the 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	34
80 to 90 %	50
70 to 80 %	8
60 to 70 %	8

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
- Quality Assurance
- Sales
- Office/Management Executives
- Accounts

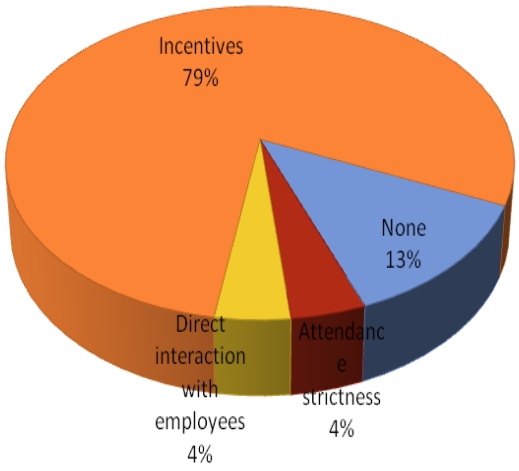
An analysis of the employment pattern reflect that for more than half of the surveyed firms operators and helpers constitute two-third or more of their total employees. However, for supervisory role 95 percent of the firms have recruited less than 15 percent of their total work force. Interestingly close to fifty percent of the total respondents have no one recruited for quality assurance. The share of senior management for majority of the firms remains less than 20 percent. It should be noted that the organizations involved in retread work have personnel separately recruited for Utility and Maintenance and Research and Development. One third of the surveyed firms have people recruited for accounts work whereas for others there is no one working separately at the accountant's designation.

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 are the top most driver of productivity. Monetary phenomenon guides the performance of the workers to a great extent. However, few firms have not been able to identify

any reason that drives the productivity of the employees.

Fig 3.7: Drivers of Productivity



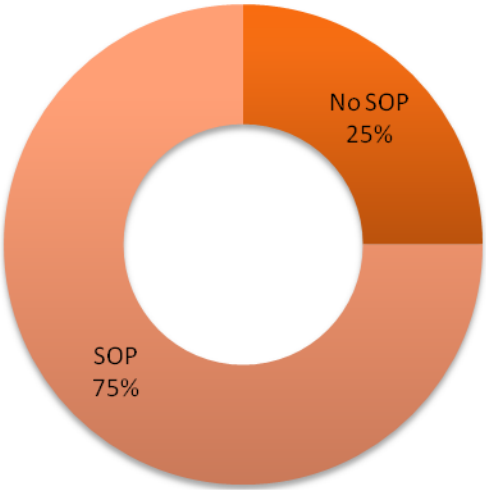
One of the surveyed firms reported strictness with respect to the attendance as the factor affecting the productivity. Considering these responses, it should be noted that incentives can be provided easily by the employer when the worker performs a task more efficiently over a period of time. This could 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 three fourth of the respondent firms have the SOPs at their workplace which is a very positive 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. Only one fourth respondent firms do not have SOPs. Nevertheless, these firms have 80-90% of employees who do not have any vocational training or higher education (graduation).

It follows from such observations that it is required for the employees to be educated to a particular level to follow the standard procedures.

Fig 3.6 : Standard Operating Procedures



Majority of the organizations surveyed do have Standard Operating Procedures at their units. Processes are carried out based on standard instructions and they revise it at different time intervals. For firms following SOP, 50 percent of them revise it as per the requirement (product or process modification/technology upgradation) and 11 percent on regular basis. However, no revision has taken place for some firms, reason being the same product and process followed.

B. ISSUES AND CONCERNS

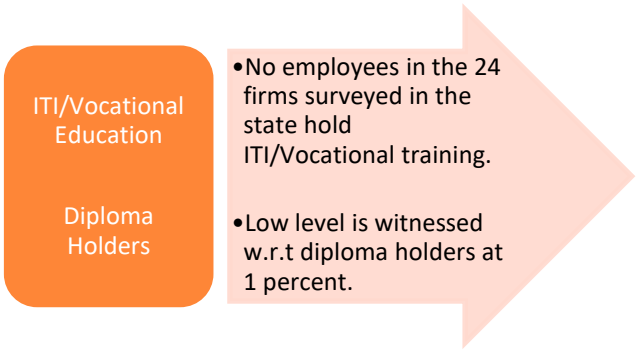
B1. Educational Front

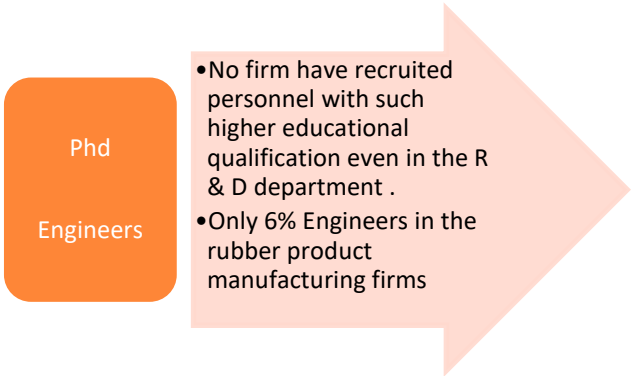
It is assumed that the skills do have a strong correlation with the educational background of the workers. Considering this fact, the section highlights in detail the present scenario of the educational status of the workers employed in the rubber industry in the state of Madhya Pradesh. Only 16 percent of the total surveyed firms have all the employees who are metric pass and hold higher educational qualification. It is interesting to note that fifty percent of the employees working in the rubber industry have completed their school education. This situation for the state is far better than the condition in Gujarat where majority of the workforce employed in the industry are not even metric pass. In Madhya Pradesh, almost three fourth of the total respondent firms have 50 percent or less employees who are not even metric pass.

Table3.6: Minimum Education

Percentage of employees below 10th standard	Surveyed Firms (%)
Less than 40 percent	63
40-70 percent	17
70-100 percent	4
None	16

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 no firm has recruited employees who are ITI/vocational. The presence of Diploma holders in the rubber manufacturing units is negligible, not even accounting for 2 percent of the total number of employees. Merely 6 percent of the total number of employees working in the rubber products manufacturing units surveyed are Engineers. Also, the firms which hire qualified personnel in the research department is only restricted to three firms and they are not PhD holders, but Engineers.





Graduates working in the rubber manufacturing units are mainly associated with the accounts, marketing, quality assurance and management department. On an average there are 15 percent graduates working in each firm.

B2. Training

Out of the 24 firms, no firm has a separate training department for their employees. Neither had they appointed a trainer nor do they arrange any expert visit to their workplace. In all, all 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, medium and large scale firms. This clearly indicates less interest shown by the organization in allocating separate resource for training the employees. However, 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

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 medium or large organizations. Here, the attitude on the part of the organizations too does not reflect an encouraging trend towards resolving the issue of technical skills.

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.

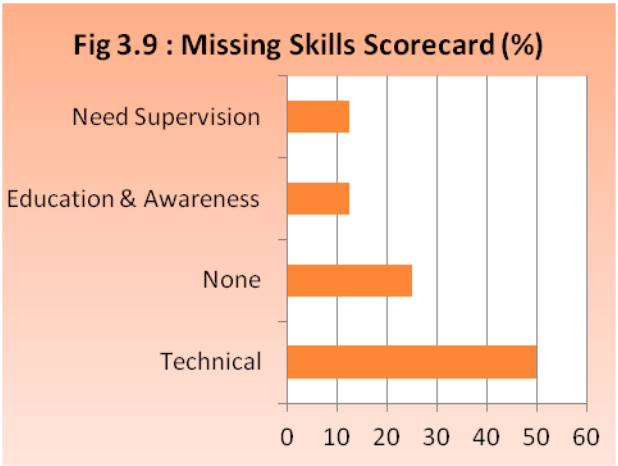
B2.3 Training Institutes

Regarding the association of rubber products manufacturing firms of different segments with the training institute, the survey results present a significant observation that 100 percent of the firms have no direct relation with the training institutes. No firm have any association with ITI Colleges and engineering colleges even for recruiting people for electrical, mechanical & maintenance department.

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 technical skills in this industry badly whether it is a small, medium or a large organization. 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 another area of concern.

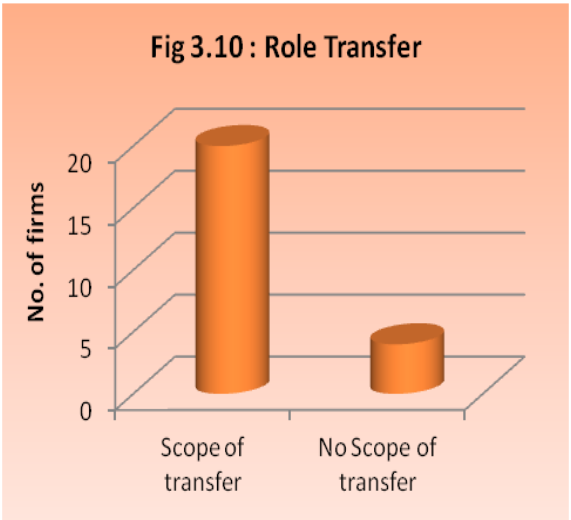


B3.1: Regional/State level Variation in Skill Gap

Around 75 percent of the surveyed firms have not responded to provide any indication regarding the regional/state level variations in the skill gap that they witness. However, rest of the firms hold the view that there is no skill gap due to availability of trained workforce. Skill gap can be eliminated by providing training.

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 more than three fourth of the respondents admits that there exist a scope of transferring role among employees. 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, those who have denied the existence of such phenomenon in their factory premises belongs to small as well as medium scale units of the industry in the state. In other words, the person specific role is not

related to the size of the organization as reflected by the 17 percent respondents.

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 majority 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.

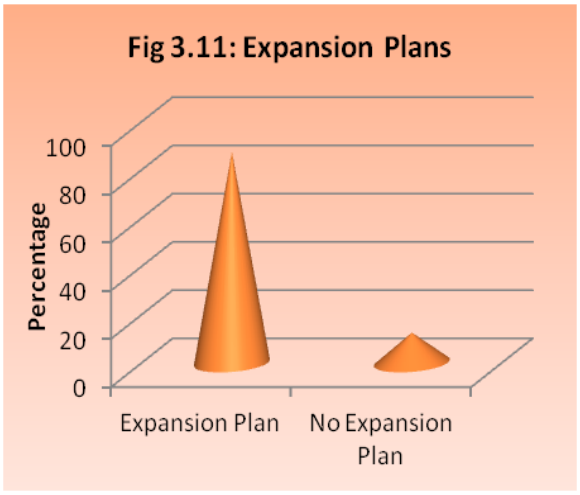
B4.1 Skill Gap or Saving on Resources

It has been reiterated by majority 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

There are very few firms in the industry in the state which do not have any future expansion plans. The entrepreneurs are concerned about their growth in the market. Most of the firms engaged in rubber product manufacturing in Madhya Pradesh reported that they have the future expansion plans regarding their manufacturing activities. Those firms are either looking forward to expand same line of business, enter a new extending product line or upgrade the technology.



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

Technical education is one area where most of the respondents feel that the educational level skill gap would emerge. 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. Diploma, ITI and engineering would be the most sought after courses for the various job roles associated with the rubber product manufacturing in coming five years. Such outlook for the industry is held by the entrepreneurs running small as well as medium scale units.

B7.Skills vs Performance Review

Performance of any employee depends on the ability to perform the work assigned efficiently, effectively and in timely manner.

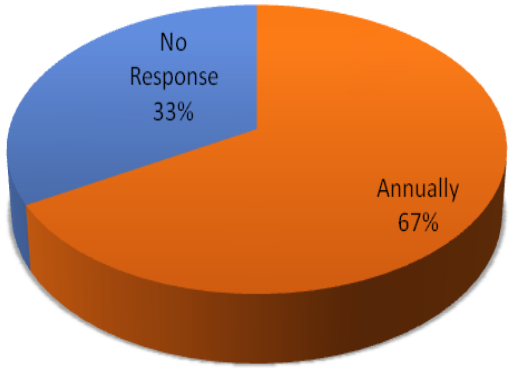
Table 3.7: Workers Output Measurement

Parameter	Firms (%)
Quantity produced	50
Machine Capacity	17
Daily Report	13
Quality	4
Batch Time and Speed	4
None	13

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.

Some of the firms have not responded to the way they measure the output of their workers whereas those who have shared their method regarding the output measurement disclosed that it is mainly by the way of quantity produced on daily basis. Only 4 percent of the firms surveyed mentioned the inclusion of quality aspect whereas for 13 percent of the respondent firms it the output produced by the workers vis-à-vis machine capacity which forms the main component of output measurement by them.

Fig 3.12: Performance Review



One third of the surveyed firms have not shared their process or method of reviewing their workers performance. These firms are mainly involved in the tread rubber products and footwear manufacturing. However, those who have discussed it mainly mentioned that they review the workers performance on annual basis.

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 central state of Madhya Pradesh, 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. Firms have expressed their interest to attend the training programme organized in their area as well as welcome the on the floor training at their premises. However, majority of the firms did not share any role for educational institutes/government/ any other stakeholder and have not shown any interest in their participation in skill development for rubber sector. Few firms have indicated that the council should facilitate setting up of training institute and keep a check on ITI.

SKILL GAP ANALYSIS

Before we move on to the skill gap analysis for the rubber industry in the state of Madhya Pradesh 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 technical skills in this industry badly whether it is a small, medium or a large organization. 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 another area of concern.

Table4.1: Technical Skill Gap: Product Category Wise

Category	Firm's response (%)
Camel back	8
Footwear	8
Belts and hoses	17
Tyre, Tube and Flaps	17
Dipped goods	8
Others	42

B) Skill Gap: Based on Major Classification

As reported by the firms, there are distinct skill gaps prevalent at different levels. However, for some levels, there is no skill gap. Broadly, here we will list down the main skill gap observed at helper, operator, supervisor, quality control and management level. Following the organizational hierarchy, let's begin from the bottom of the pyramid.

1. Helper

Entrepreneurs feel that the helpers are careless 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 avoid work and always require supervision. Standard operating procedures are not followed 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 Madhya Pradesh. Inability to take independent decisions as well as lack of product knowledge 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 good communication and presentation skill.

3. Supervisor

Majority of the firms do not find any skill gap in the performance of supervisory role. 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.

4. Quality Control

Experts and experienced personnel have been hired by the rubber industry for quality checking of the manufactured products. There is no skill gap reported by the majority of the respondent firms for the people engaged in performing this job role.

5. Management

For the people involved in managerial tasks associated with production, storage, maintenance and factory operations, no major skill gap has been identified based on the survey responses.

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: Madhya Pradesh

Segment	Job Role	Skill Gap	Intensity
Tyre, Tube and Flap	Mixing Operator	• Unskilled • On the job training is given • Lack of chemical knowledge • Lack of product Knowledge	Medium
	Extruder Operator	• Unskilled • On the job training is given • Handling machine issues	Medium
	Splicing Operator	• Unskilled • On the job training is given	Medium
	Curing Operator	• Unskilled • On the job training is given • Product Knowledge • Machine knowledge	Medium
	Testing Operator	• Lack of product knowledge • Improper joint handling	Medium
	Helper	• Avoid work • Do not follow SOPs • No idea about product manufacturing	Medium
	Quality Check	No skill gap	Low
	Supervisor	Avoidance of mistakes	Low
Tread Rubber	Kneader Operator	• Always require supervision • Cannot take decision on their own	Low
	Helper	• Education • Always require supervision • Cannot take decision on their own	Low to Medium
	Factory Incharge	No skill gap	Low
	Mixing Mill Operator	• Always require supervision • Cannot take decision on their own	Low to Medium

	Extruder Operator	• Always require supervision • Cannot take decision on their own	Low to Medium
	Calendering Operator	• Always require supervision • Cannot take decision on their own	Low to Medium
	Press Operator	• Always require supervision • Cannot take decision on their own	Low to Medium
	Maintenance Dept	None	Low
	Research and Development	None	Low
Adhesive Tapes	Production Manager	No skill gap	Low
	Helpers	• Lack educational qualification • Poor machine work • Careless in work	Medium
	Mixing Mill operator	Lack operational skills	Medium
	Coating Machine Operator	Lack maintenance skills	Medium
	Finishing Operator	Lack presentation skill	Medium
	Quality Check	No skill gap	Low
	Supervisor	No skill gap	Low
Moulded & Extruded Products	Mixing Mill Operator	Lack good communication skill	Low
	Extruder Operator	Need supervision	Low
	Moulding Operator	Need supervision	Low
	Curing Operator	No skill gap	Low
	Finishing Operator	No skill gap	Low
	Helper	• Unskilled • Do work what is told and explained • Less Educated • Do not understand English language	Low
	Quality Check	Supervision required	Low
	Production Manager	None	Low

	Store Manager	None	Low
	Marketing Executive	None	Low
	Procurement Executive	None	Low
	Maintenance	None	Low
	Dispatch	None	Low
Footwear	Mixing Operator	Less educated	Low
	Cutting Operator	Less educated	Low
	Moulding Operator	Less educated	Low
	Press Operator	Less educated	Low
	Quality Check	Expert	Low
	Supervisor	No skill gap	Low
Surgical & pharma Products	Mixing Operator	Carelessness	Low
	Helper	• Less Educated • Carelessness	Low
	Packing Operator	Improper packing	Low
	Moulding Operator	Need supervision from time to time	Low
	Curing Operator	Need supervision	Low
	Extruder Operator	Need supervision	Low
	Buffing Operator	• Cannot work independently • Need supervision from time to time	Low
	Factory Manager	No skill gap	Low
	Supervisor	No skill gap	Low
	Maintenance Operator	No skill gap	Low
Note: No skill gap reported by the firms producing belts and cables in the state for any of the job role.			

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 in the quality control department across the rubber product manufacturing segments have not shown any intense skill gaps, therefore the job roles falling under this category may not require any immediate action.

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 4.3 : 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 any of the roles across the different segments. Moreover, two segments viz beltings and cables have not identified any skill gap for the specific roles.

The skill gap intensity for operator's role for various activities has been rated low, medium to low and medium by the respondent firms. However, there is only one supervisory role mentioned by the organization at the senior level but not specific to different job roles. Nevertheless, the supervisor's role assumes very low intensity for skill gap.

An analysis of skill gap intensity indicates that the firms have not rated high skill gap intensity for any role. Most of the operators are facing low to medium level of skill gap which can be corrected by technical training. Interestingly, firms reported that helpers which form an important part of the industry mainly lack skills in performing their tasks carefully, not on their routine jobs of housekeeping, loading/unloading, movement of material etc.

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 in Madhya Pradesh. The firms believe that in the coming five years, the major educational skill gap would emerge of account of finding employees with Diploma, ITI and engineering 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. 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

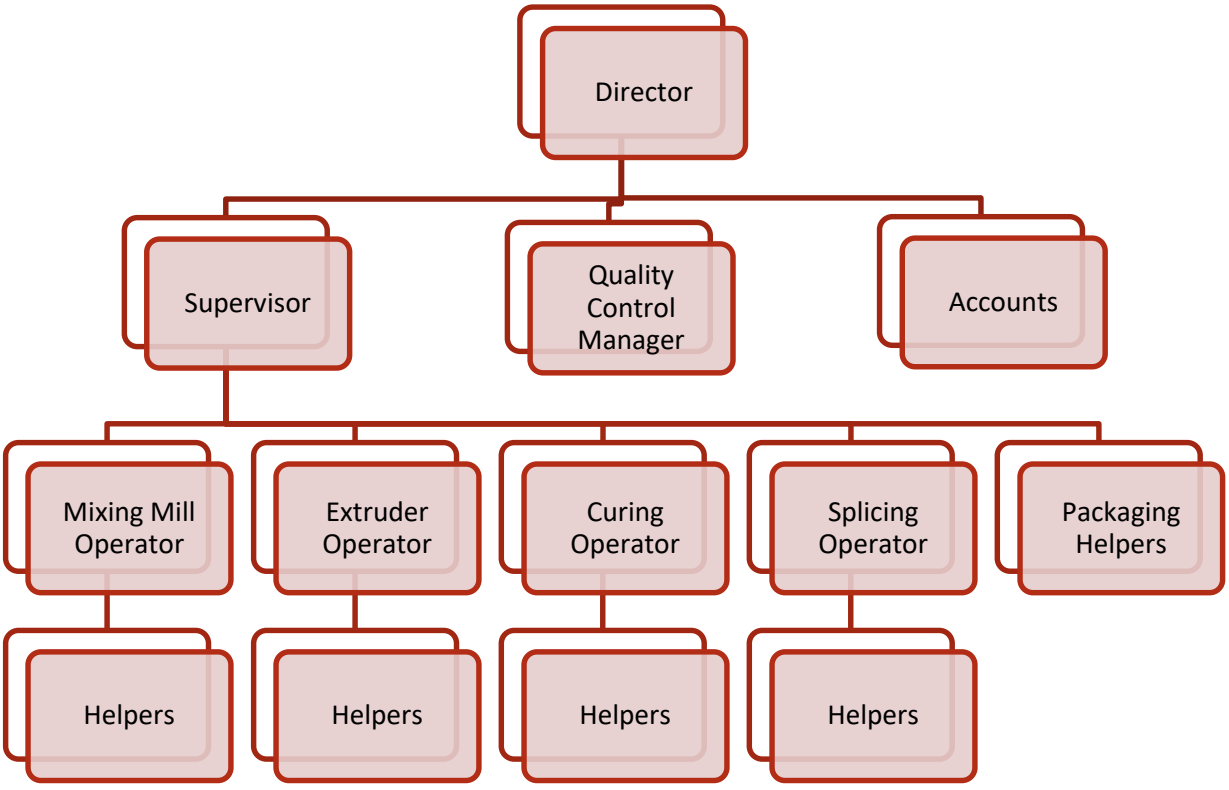
Job Role	Low	Low to Medium	Medium	Medium to High	High
Supervisor					
Factory Manager					
Store Manager					
Mixing Operator					
Kneader Operator					
Curing Operator					
Calendaring Operator					
Moulding Operator					
Extruder Operator					
Coating Machine Operator					
Cutting Operator					
Buffing Operator					
Press Operator					
Splicing Operator					
Testing Operator					
Packing Operator					
Finishing Operator					
Maintenance Operator					
Helper					
Quality Control					
Procurement Executive					
Marketing Executive					
Dispatch Worker					
Research & Development					

SEGMENTS AT A GLANCE

TYRE, TUBE AND FLAP

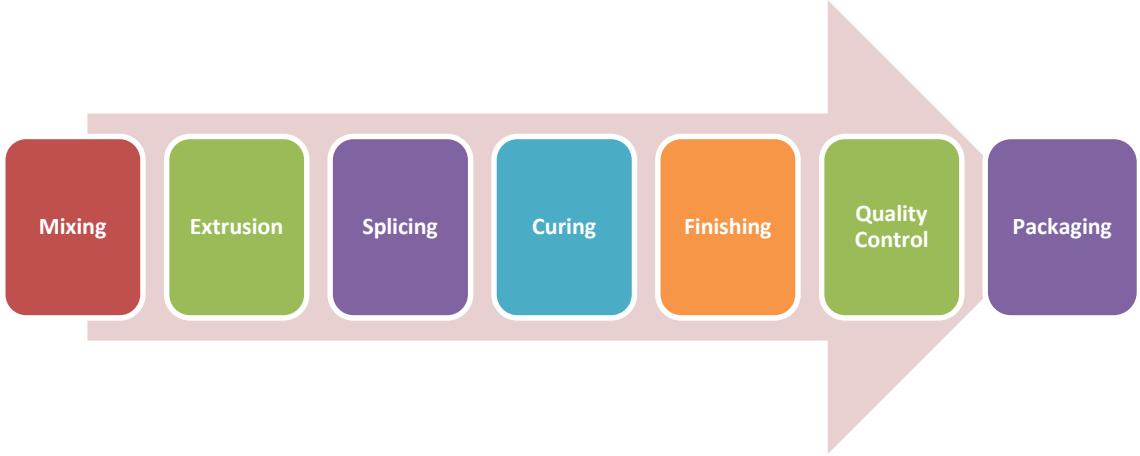
All the respondent firms producing automobile/bicycle tubes mentioned that they skilled manpower required for their manufacturing process is hard to get. The survey findings reveal that there is no single surveyed firm which has tried to contact any training institute for their requirement of supervisor, operators and helpers in the production. The employees for small scale units producing automobile/bicycle tubes are from Madhya Pradesh as well as outside the state. Uttar Pradesh and Bihar are the two states from where majority of hiring takes place for outsiders.

Organization Structure



Process Outline:

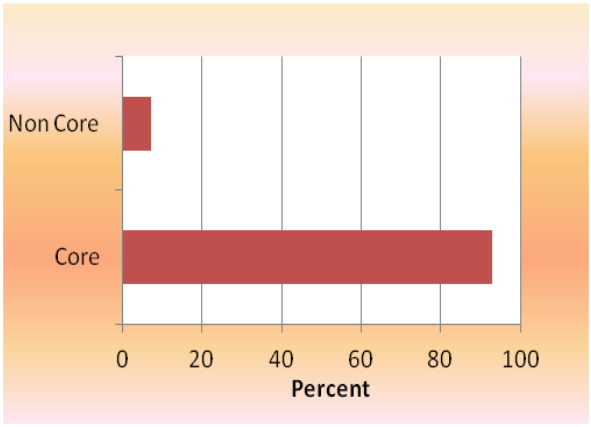
For tube preparation, the mixing of compound is executed as per the required specification and then the extrusion process takes place. Splicing of the tubes is carried out by the operators as per the SOPs. With the completion of curing process, the product gets ready for the inspection and finishing. Product is checked thoroughly and finally packaging is done.



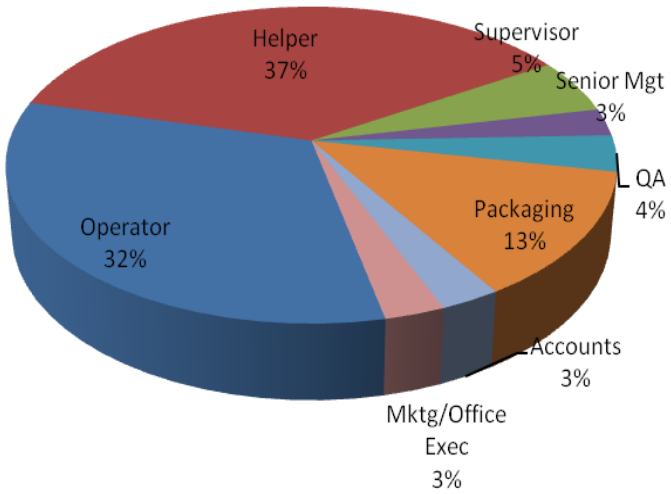
Sample Units	Tiny	Small	Medium	Large	Total
Tubes	-	4	-	-	4

Manpower at a glance

All the employees are recruited on roll in the tube producing firms in the central state of the country. The major strategy for recruitment is through direct interview. Majority of the employees are engaged in the core production activity, only 7 percent of the total employees are taking up the administrative, accounting and managerial tasks. On an average, attrition rate is 10 percent in the surveyed firms producing tubes.



The main job requirement is for helper and operator level in tube manufacturing. In the units covered in the sample, it has been pointed out that the entrepreneurs do not see any great change in future in the product segment. The firms admit that their requirement for employees in the future course of production would be need based. The main requirement is for skilled operators. Technical skill is the main skill gap for which concerns are raised by majority of the surveyed firms.



Job Role Distribution in Sample Units

Educational Qualifications (% of total employees)

Educational Qualification	Small
Ph.D/Research	-
Engineers	3
Graduate	12
Diploma Engineers	-
ITI/Vocational Education	-
XII/X/School Education	50
Below Xth standard	35
Others (CA, CS, ICWA, MBA etc.)	-

Majority of the operators and supervisors are school pass outs whereas helpers are not educated even up to tenth standard. The owner, account and quality control manager are mainly graduates.

Training

Training department is not in existence for any of the firms surveyed in the tube segment. There are no relations of the firms with any of the training institutes in the state. The owner himself/superviser provide training in the firm. However, firms put forth their views that operators need to be trained for machine operations and helpers for product handling.

Main Roles and Skill Gap

1. **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. • Switch on the machine and the		• No formal training • Not efficient in handling the machine		

clock the cycle which has been set by the manager/supervisor. • Maintain the machine parameters i.e, temperature & pressure • Maintaining quality of output and cleanliness of the machine • Checking the safety while working on the machine. • Routine maintenance		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.
- Decision taker

Soft Skills:

- Basic metric system
- Co-ordination with other team members

2. **Extruder Operator**

Extruder Operator	Skill Gap			
• Operate the extruder machine	Tiny	Small	Medium	Large

skillfully. • Checking that the safety aspects are followed • Maintaining settings 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)		• No formal technical training. • Lack of interest		
Skill Gap Intensity: Medium **Skills Required** **Technical Skills:** • Good knowledge of machine and its operation. **Managerial skill:** • Good communication skills for guiding helpers and coordinating with other operators. • Motivate team members **Soft Skills:** • Good knowledge of metric system (time, temperature, pressure) • Good reading skills				

3. **Splicing Operator**

Splicing Operator	Skill Gap			
• Work for jointing the tube(hot	Tiny	Small	Medium	Large

joint & cold joint) of cycle and rickshaw • Operating the splicer machine for jointing the tube of automobile • Guide the helper		• Lack of formal training		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Good knowledge of machine and its operation.
- Knowledge of hot joint and cold joint in cycle tube case
- Knowledge to operate the splicer machine
- Maintenance skill

Managerial skill:

- Motivate team members Ability to get work done by the helpers
- Ability to take decisions
- Motivate peers and subordinates
- Team spirit

Soft Skills:

- Good knowledge of metric system (time, temperature, pressure)
- Good reading skills
- Interpersonal skills
- Ability to communicate with superior to clear doubts

4. **Curing Operator**

Curing Operator	Skill Gap			
• Curing the tube by putting the	Tiny	Small	Medium	Large

mandrel in vulcanization Pan • Curing of green tube have done as per the given specification • Proper cleaning and maintenance and cleaning of vulcanizer • Guide the helper • Properly maintain the machine, and report any issues to the Supervisor/Proprietor • Work for the proper upkeep of the machine		• No formal technical training • Lack of specialization & experience to perform operation		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Proper curing of tubes
- Should be able to follow the guidelines
- Ability to manage waste

Managerial skill:

- Good communication skills for guiding helpers.
- Guide the helpers

Soft Skills:

- Effective communication skill
- Quick learner
- Basic arithmatic

5. **Helper (Machine Operations, Finishing, Packaging)**

Helper	Skill Gap			
• Shift the material for the different processes (i.e. for	Tiny	Small	Medium	Large

mixing, press, cutting, packing, storing etc) • Clean the shop floor as when guided by the supervisor. • Loading and unloading the rubber into the mixing mill • Packing the product in respective packing material. • Do all work as directed by the supervisor/operator		• Do not follow SOPs • No formal training • Lack of product knowledge • Avoidance of work		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Proper finishing and packaging
- Do all the work as directed
- Consistency in work

Soft Skills:

- Basic numeric aptitude
- Good reading skills
- Good listening skill

6. 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		• Avoidance of mistakes		

product. • Monitoring the work of helpers and operators • Checking that standard operating procedure is followed.				

Intensity of Skill Gap: Low

Skills Required

Technical Skills:

- Knowledge of the rubber industry
- Knowledge of production process.
- Ability to measure dimensions using industrial measuring instruments.
- Ability to supervise plant operation
- 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.
- Ability to manage manpower on plant level.
- Leadership qualities

Soft Skills

- Effective communication and co-ordination skill

7. 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 • Responsible for assuring quality • Responsible for rejection • Identify the process where defects are originating. • Perform lab operations		• No skill gap		

Skill Gap intensity: Low

Skills Required

Technical Skills:

- Knowledge of testing procedures
- Knowledge of lab equipment (Rheo meter, Tensile Tester etc) and its handing
- Knowledge lab chemicals and preparations
- Product Knowledge

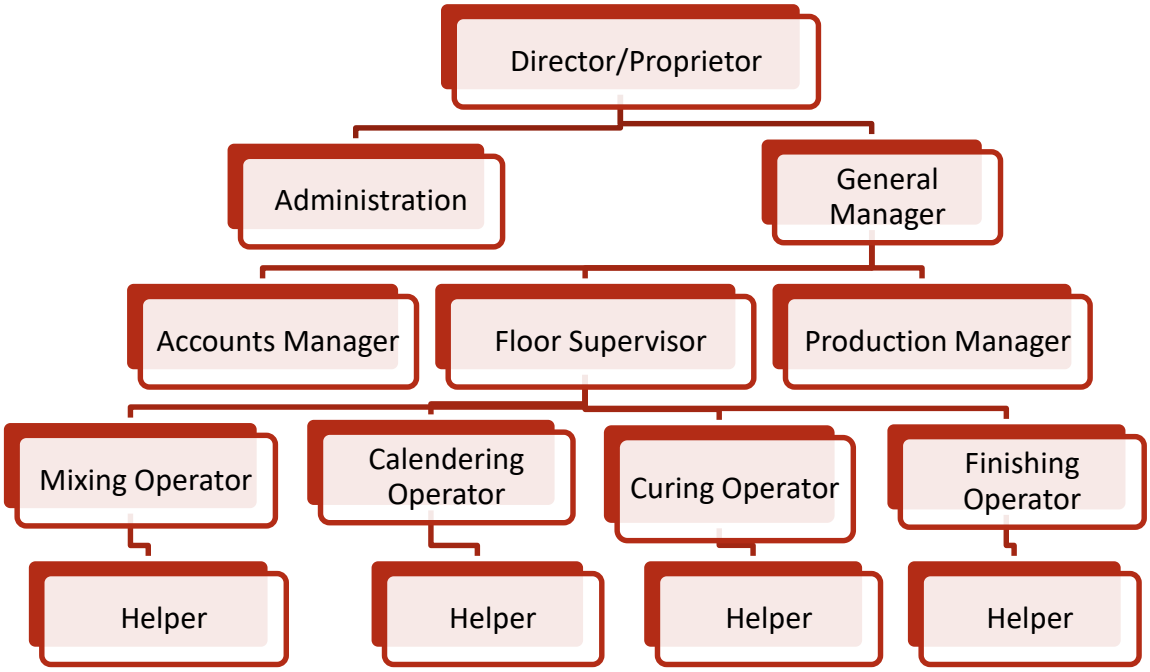
Soft Skills:

- Good communication skills
- Proper feedback to the concerned person

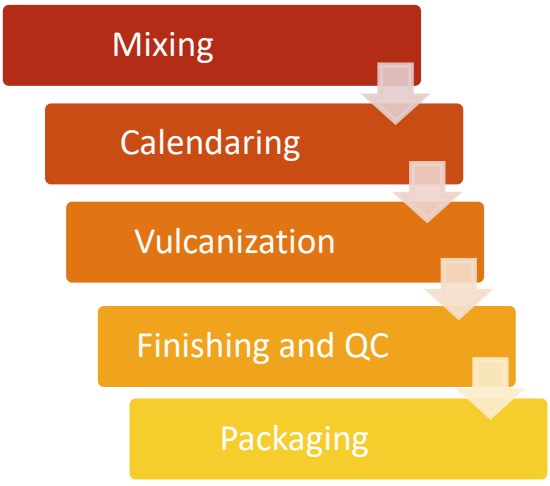
RUBBER BELT

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

Organization Structure



Process Outline:

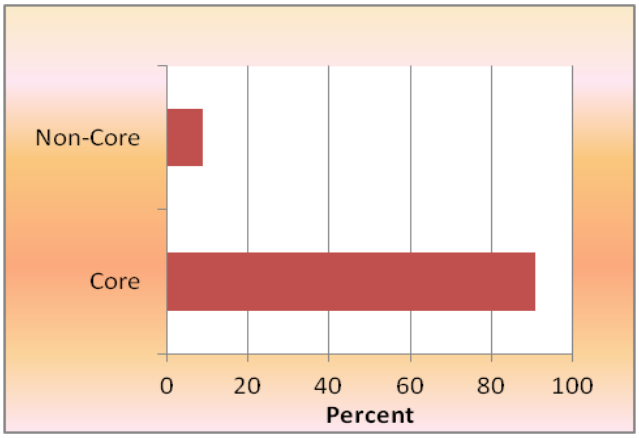


Compound is obtained by mixing the raw materials in a mixing and milling machine. Rubber strips are made to be put in the hydraulic press. Hydraulic press is used for moulding the rubber strips into belts & conveyers. Hydraulic press requires setting the temperature, pressure and timing for the mould. 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.

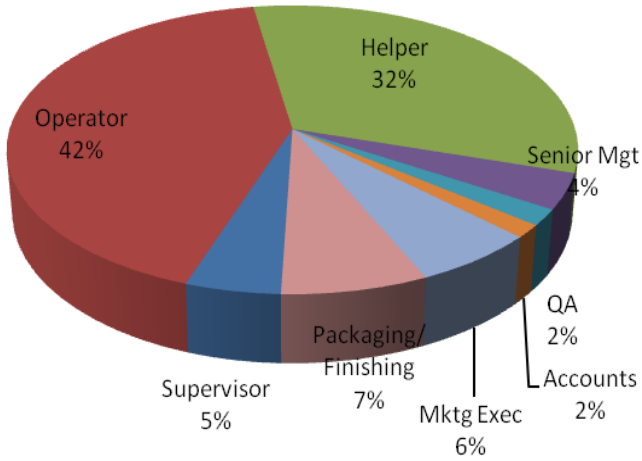
The finished products are then packed and made ready to deliver.

Sample Units	Tiny	Small	Medium	Large	Total
Rubber Belt	-	2	1	-	3

Manpower at a glance



All the employees are recruited on roll in the select rubber belt producing firms in the state, there is no firm recruiting its employees off roll. Majority of the employees are engaged in the core production activity, only 9 percent 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. Technical skills are found missing in the operators working in the belt manufacturing units.



The transfer of roles is frequently noticed in these firms as the workers handle multiple tasks. Standard operating procedures are followed by all firms in this segment of the industry and SOPs are revised as per requirement.

Educational Qualifications (% of total employees)

Educational Qualification	Small	Medium
Ph.D/Research	-	-
Engineers	-	5
Graduate	5	10
Diploma Engineers	-	15
ITI/Vocational Education	-	-
XII/X/School Education	80	40
Below Xth standard	14	30
Others (CA, CS, ICWA, MBA etc.)	1	-

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.		• No skill gap	• No skill gap	

• Authority to stop the production in case of any quality issues • Maintain the safety aspects as shared by the supervisor • After mixing, get the compound checked by lab assistant • Follow standard operating procedures				

Intensity of skill gap: Low

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. • 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	Tiny	Small	Medium	Large
		•No skill gap	•No skill gap	

<u>Intensity of Skill Gap: Low</u>

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
		• No skill gap	• No skill gap	

Intensity of Skill Gap : Low

Skills Required

Technical Skills:

- Thorough knowledge of curing process and working of press.
- Maintain the appropriate temperature and pressure at all times.
- 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. Production Manager

Production Manager	Skill Gap			
• Manage and control production	Tiny	Small	Medium	Large

activities. • Planning for production schedule • Instructing/guiding operators and supervisor • 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		• No skill gap	• No skill gap	

Intensity of Skill Gap: Low

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

5. Accountant

Accountant	Skill Gap

• To perform the various documentation functions. • To assist the marketing, purchase, HR and accounts function as and when required. • To communicate with the external parties.	Tiny	Small	Medium	Large
		• No skill gap manifested	• No skill gap manifested	

Skill Gap intensity: Low

Skills Required

Technical Skills:

- Knowledge of various documents and their importance.
- Mathematical and accounting Skills.
- Ability to communicate in English language
- Good IQ level.
- Ability to communicate and negotiate with the external parties.
- Knowledge of computers

Soft Skills

- Effective communication skill

6. Helper

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Shift the material for the 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		• No skill gap	• No skill gap	

material. • Do all work as directed by the supervisor/operator				

Skill Gap Intensity: Low

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

7. Marketing Manager

Marketing Manager	Skill Gap			
	Tiny	Small	Medium	Large
• To perform the various documentation functions. • To assist the marketing, purchase, HR and accounts function as and when required. • To communicate with the external parties. • Promote the product through various channels		• No skill gap manifested	• No skill gap manifested	

Skill Gap intensity: Low

Skills Required

Technical Skills:

- **Knowledge of various documents and their importance.**
- **Marketing Skills.**
- **Ability to communicate in local and English language**
- **Good IQ level.**
- **Ability to communicate and negotiate with the external parties.**

Soft Skills

- **Effective communication skill**

8. Quality Technician

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

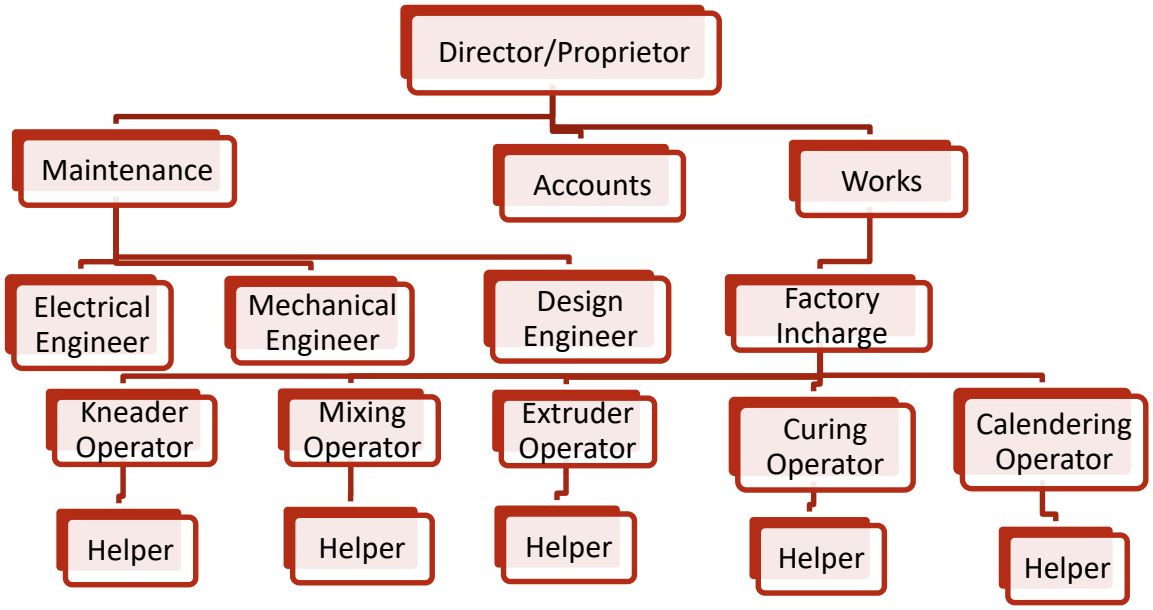
Soft Skills:

- **Good communication skills**

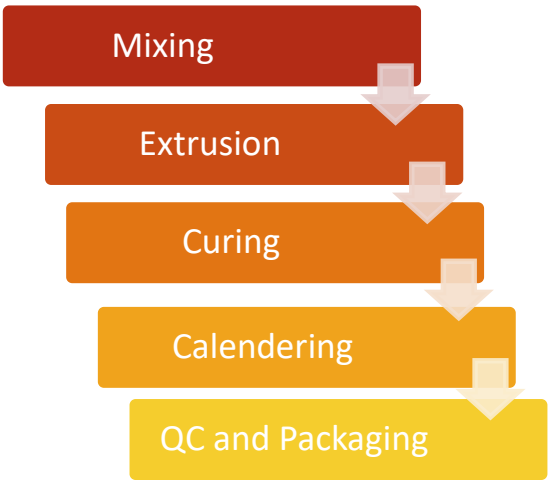
TREAD RUBBER

In the last thirty years, a clear trend of employees performing multiple roles in the manufacturing rubber products has been observed by all the responding firms. The entrepreneurs accept that there is ample scope of transfer of roles for employees in their units. Majority of recruitment takes place for operators and helpers job role. Firms involved in tread rubber and retreading in the state hire a large proportion of their workforce from outside, mainly operators from UP, Jharkhand and Chhattisgarh.

Organization Structure

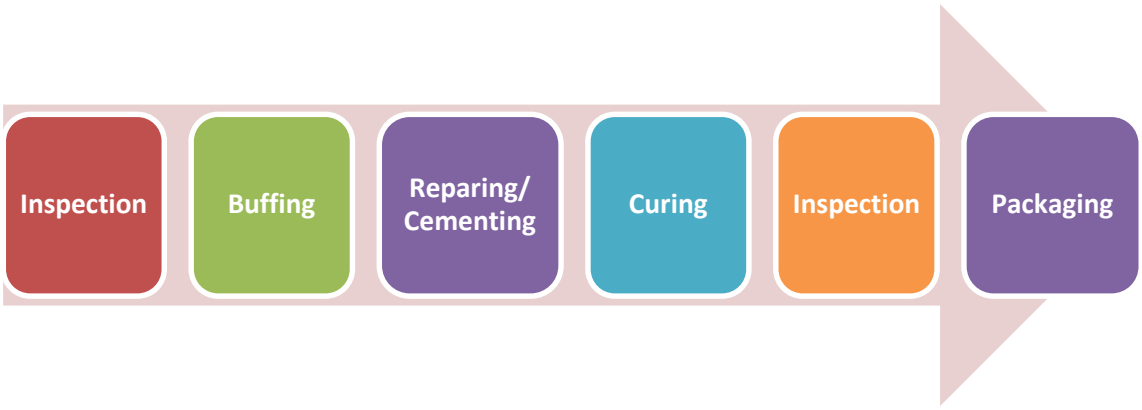


Process Outline:



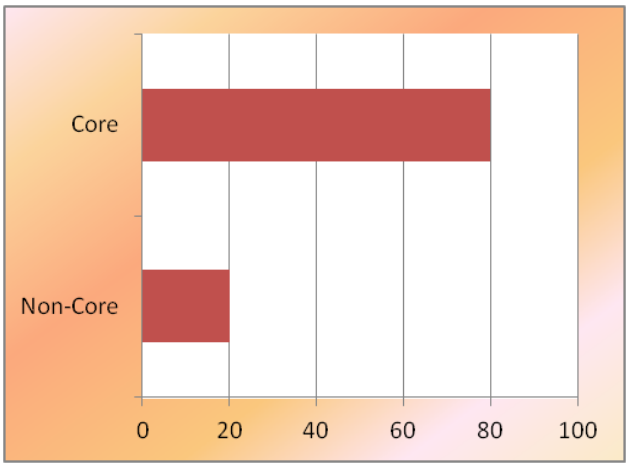
The manufacturing of tread rubber products involves the use of kneader as well as mixing machine. At first, raw material is put into the kneader machine. Cold mix is obtained by mixing in machine. Material is passed to extruder and the specific product is put in the press. After that, calendering process is carried out. The produced goods are thoroughly checked for compliance to customer specification. The finished products are then packed and made ready to deliver. In case of retreading, the product is inspected carefully then sent for buffing.

Retreading is carried out either through cold or hot process. Curing is undertaken and the product is then sent for final inspection.



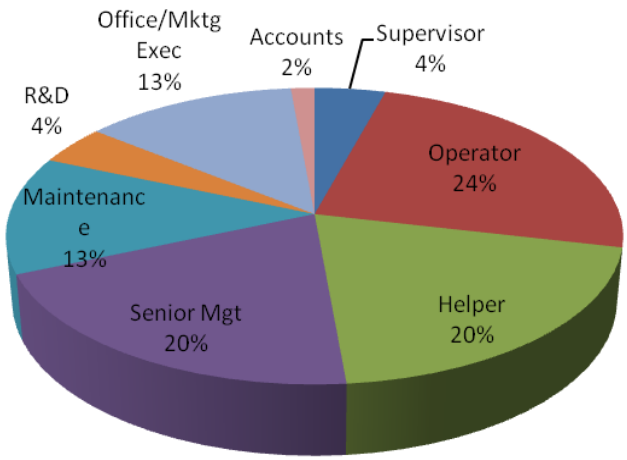
Sample Units	Tiny	Small	Medium	Large	Total
Tread Rubber and Retreading	-	4	-	-	4

Manpower at a glance



On an average, the number of employees in the select units is not more than 20, as all the responding firms are small scale manufacturing units. All the employees are recruited on roll in the select firms involved in manufacturing of tread products and retreading in the state, there is no firm recruiting its employees off roll. Majority of the employees are engaged in the core production activity, whereas one fifth of the total employees are taking up the administrative, accounting and managerial tasks. The employees are recruited mainly through direct interview. The attrition rate is not high in these units and they primarily follow the retention strategy of paying bonus and annual salary increment. Seventy five percent of the surveyed firms easily find the employees required by them and do not face any shortage. However, the transfer of roles is frequently noticed in these firms as the workers handle multiple tasks. Training is provided to the workers in the unit only, neither there is any separate training department nor there do any recruitment from training institute.

In the units covered in the sample, the information shared about their employees classification has helped in identifying the proportion of different level of employees in this segment. The main job role is for operators in the tread products and retreading units. Standard operating procedures are followed by all firms in this segment of the industry and SOPs are revised as per requirement.



Regarding the educational qualification of the employees in different categories, office staff holds degree of graduation whereas the helpers have mainly completed secondary/senior secondary. Surprisingly, most of the operators have completed B.tech. However, there are personnel undertaking the task of research and development but their educational qualifications are not higher than graduation.

Educational Qualifications (% of total employees)

Educational Qualification	Small
Ph.D/Research	-
Engineers	28
Graduate	27
Diploma Engineers	-
ITI/Vocational Education	-
XII/X/School Education	28
Below Xth standard	17
Others (CA, CS, ICWA, MBA etc.)	-

Training

Training department is not in existence for any of the firms surveyed in the referred segment. The responding firms highlighted that there is a need to train employees, but they do provide on the job training after hiring them. Moreover, there is no relation with any training institute of these firms operating in the central state of the country.

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 in case of any quality issues • Maintain the safety aspects as shared by the supervisor • After mixing, get the compound checked by lab assistant • Follow standard operating procedures		• Always require supervision • Cannot take decision on their own		

Intensity of skill gap: Low to 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			
	Tiny	Small	Medium	Large
• Maintenance of the machine. • 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		• Cannot take decisions independently • Always require supervision		

Intensity of Skill Gap: Low to 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. Press Operator

Press Operator	Skill Gap			
	Tiny	Small	Medium	Large
• 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		• Always require supervision • Cannot take decisions on their own		

Intensity of Skill Gap : Low to Medium

Skills Required

Technical Skills:

- **Thorough knowledge of curing process and working of press.**

- Maintain the appropriate temperature and pressure at all times.
- 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. Factory Incharge

Production Manager	Skill Gap			
	Tiny	Small	Medium	Large
• Manage and control production activities. • Planning for production schedule • Instructing/guiding operators and supervisor • 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		• No skill gap		

Intensity of Skill Gap: Low

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

5. Maintenance

Maintenance	Skill Gap			
	Tiny	Small	Medium	Large
• Finding defect/problems in machines documentation functions. • Repairing the machine or finding the alternative • Setting machine load capacity. • Training operators for right use of machine		• No skill gap		

Skill Gap intensity: Low

Skills Required

Technical Skills:

- Mechanical Engineer/Electrical Engineer/Design Engineer
- Domain knowledge and specialization
- Ability to communicate in English and local language
- Good IQ level.

Soft Skills

- Effective communication skill

- Good observation skill

6. Helper

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Shift the material for the 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. • Do all work as directed by the supervisor/operator		• Education • Always require supervision • Cannot take decision on their own		

Skill Gap Intensity: Medium

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

7. Research and Development

Research and Development	

• To work for the development of new production line • Modification in current value chain • Rubber modification (use of rubber) • To perform the various documentation functions. • Identify the process where defects are originating.	Skill Gap			
	Tiny	Small	Medium	Large
		• No skill gap		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Expert in production process
- Expert in the field of rubber
- Knowledge of lab functions and testing procedures

Managerial Skills:

- Proper documentation
- Maintaining confidentiality as per the requiremnet

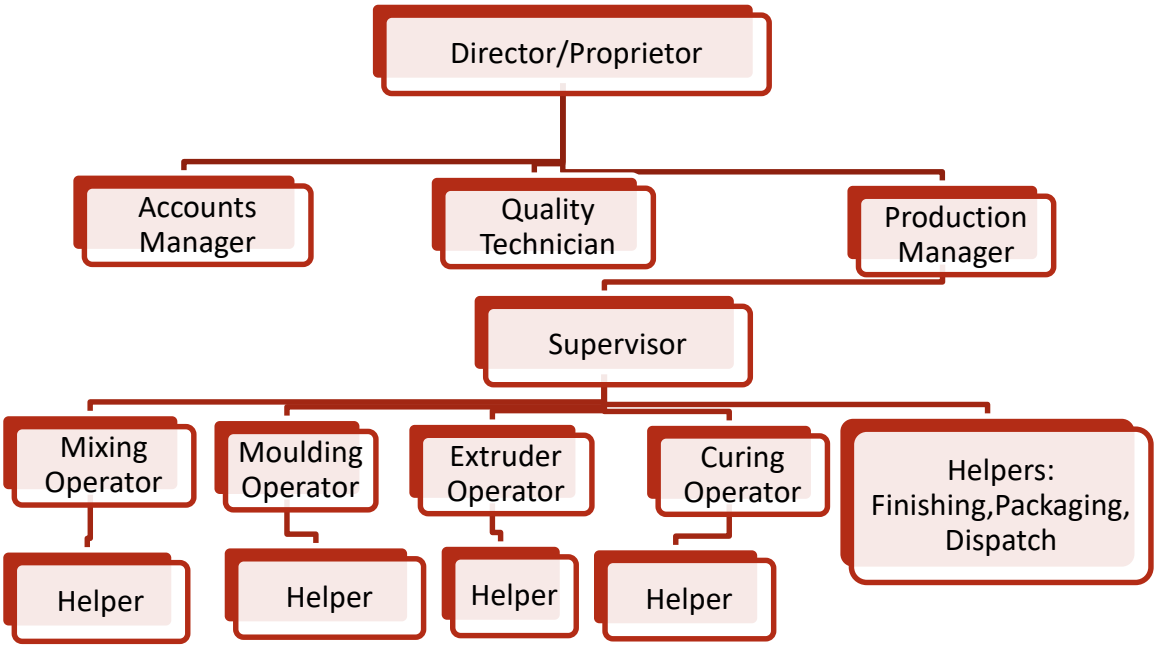
Soft Skills:

- Good communication skills
- Good analytical skills

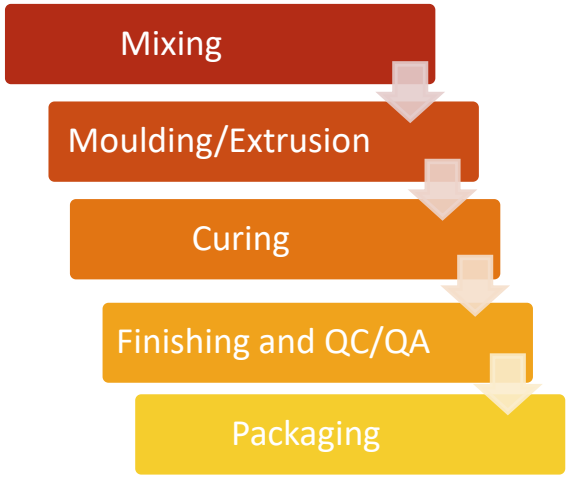
MOULDED & EXTRUDED PRODUCTS

Majority of the respondent firms producing moulded and extruded products mentioned that they recruit only local people for their manufacturing process. Only one firm is employing outside people in this segment (10 percent of their total employees) and those employees are coming from the different locations. The survey findings reveal that the firms are looking forward to expand in the same line of operations and the requirement for additional human resource would depend on the scale of business expansion.

Organization Structure



Process Outline:

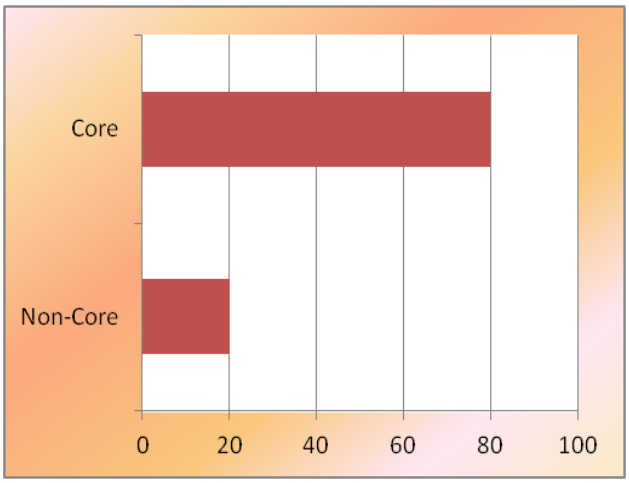


Compound is obtained by mixing the raw materials in a mixing machine. The mixing takes place as per the required specification and then the sheet/strip is prepared. Then the desired shape product is put in the moulding machine and then curing takes place. Finishing of the product is carried out. The produced goods are thoroughly checked for compliance to customer specification. The finished products are then packed and made ready to deliver.

Similar process is followed for extruded product. Compound is obtained by mixing the raw materials in a mixing machine. The mixing takes place as per the required specification then the process of extrusion is carried out. Curing takes place as per the specified procedure. Finishing of the product is carried out. 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 & Extruded Products	-	6	-	-	6

Manpower at a glance



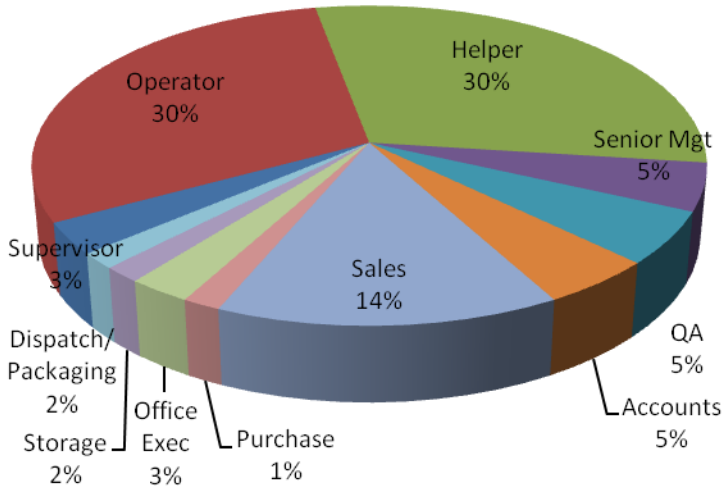
The employees are recruited on roll as well as off roll in the rubber moulded and extruded goods producing firms in the state. Firms hiring 100 percent on roll employees have small scale of production, a common trend observed in other segments of rubber manufacturing as well in the state. The major strategy 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. All the units covered in the survey under this segment feel that there is a scope for transfer of roles in the activities carried out by the workers in their units as they perform multiple tasks.

Half of the surveyed firms have clearly mentioned that they easily find the requisite number of employees required to carry out the production whereas others have highlighted that there is a shortage of skilled manpower especially operators. Also, the employees lack skills with respect to technical knowledge and quality awareness as per the respondent firms in moulded and extruded goods producing units.

As per the classification of employees, the segment indicates mainly the requirement of operators and helpers followed by sales personnel. 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 only one supervisor s/production manager handling the manufacturing of the product in the unit. Specific role for accountants

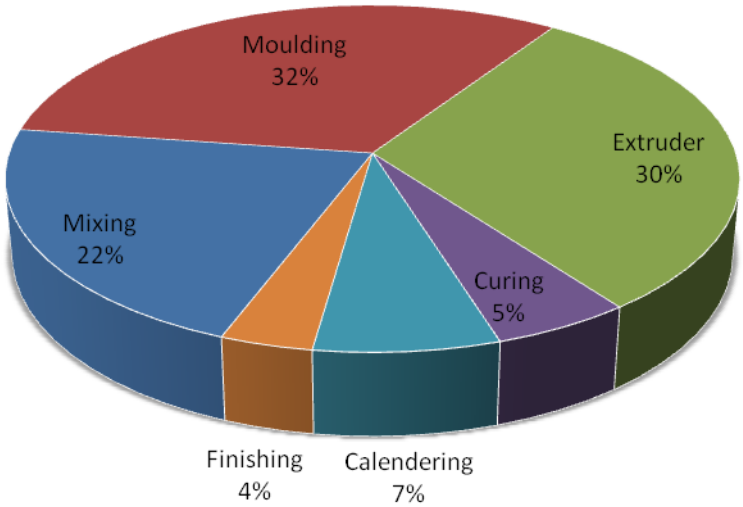
imply that accounts are handled by qualified individuals not by proprietors themselves given the small scale of operations.

Job Role Distribution in Sample Units



An analysis of operator level employment reflects that there is mainly the requirement for mixing and moulding followed by extrusion operation. The requirement for extrusion emerges as some of the firms involved in the production of moulded products also produces extruded product.

Operator Level Employment Pattern



With regard to the educational qualification of the workers employed in the firms producing extruded and 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	-
Engineers	7
Graduate	18
Diploma Engineers	-
ITI/Vocational Education	-
XII/X/School Education	41
Below Xth standard	29
Others (CA, CS, ICWA, MBA etc.)	5

Training

Four firms have training department, two large scale and two small scale firms while 19 firms surveyed in the moulded goods segment in the state do not have any separate training department. Nearly one third firms highlighted that they mainly provide on the job training. However, 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		• Communication Skill gap		

temperature of the machine so that mixing occurs properly • Maintain the machine as per the guidelines of the management. • Check that the preparations are 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: Low

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. Moulding Operator

Moulding Operator	Skill Gap			
• Operate the machine properly. • Proper use of die • Application of different die fo r different products • Maintenance of moulding machine production manager/supervisor • Follow the guidelines given by • Report to the in-charge/supervisor in case of trouble	Tiny	Small	Medium	Large
		• Need supervision from time to time		

Skill Gap Intensity: Low

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. Extruder Operator

Extruder Operator	Skill Gap

• Proper operation of the machine • Maintenance of the machine. • Controlling machinery operation when work is in process. • Keeping track of produced product.	Tiny	Small	Medium	Large
		• Need supervision		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Thorough knowledge of process and working of extruder.
- Maintenance of machine.
- Knowledge of product

Managerial skill:

- Good communication skills.

Soft Skills:

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

4. Curing Operator

Curing Operator	Skill Gap			
• Maintenance of the machine. • Control of temperature when the product is inside it. • Keeping track of curing time for each product.	Tiny	Small	Medium	Large
		• No skill gap		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Thorough knowledge of curing process and press and it's working.

- Maintain the appropriate temperature and pressure at all times.
- Knowledge of product

Managerial skill:

- Good communication skills.

Soft Skills:

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

5. Quality Technician

Quality Technician	Skill Gap			
• To check the quality of the product by visual inspection and quality tests and procedures as per the standards • Changing and implementing changes for mixtures whenever necessary • Lab machine operations • Reporting to the Director/concerned person if quality is not upto mark • Check with operators for quality issues • Quality Assurance	Tiny	Small	Medium	Large
		• No skill gap		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

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

- Product knowledge

Soft Skills:

- Good communication skills

6. Supervisor

Supervisor	Skill Gap			
	Tiny	Small	Medium	Large
• Manage the shop floor activities. • 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		• No skill gap		

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

7. Production Manager

Production Manger	Skill Gap			
	Tiny	Small	Medium	Large
• Supervision of production unit • Responsible for running of unit and production • Keeping people at right places • 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 • Responsible for any delay and default		• No skill gap		

Intensity of Skill Gap: Low

Skills Required

Technical Skills:

- Knowledge of the rubber and rubber industry
- Knowledge of product and value chain of product
- 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 and handle workers.**

Soft Skills

- **Effective communication skill**
- **Coordination skill**

8. 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 • Perform only the work what is told and explained, no initiative taken on his own		

Skill Gap Intensity: Low

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

9. Marketing Executive

Marketing Executive	Skill Gap			
	Tiny	Small	Medium	Large
• Bringing the wide range of customers • Maintaining relation with business partners and customers • Finding new opportunities • Planning for future		•No skill gap		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Knowledge of product produced
- Influencing power

Soft Skills:

- Effective communication skill
- Managing complaints

10. Procurement Executive

Procurement Executive	Skill Gap			
	Tiny	Small	Medium	Large
• Procurement of raw material				

and other items required in production • Maintaining relation with suppliers • Procuring material at competitive price • Managing procurement in timely manner • Checking for the proper storage of procured material		• No skill gap		

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Knowledge of material procured
- Bargaining power
- Rubber market knowledge

Soft Skills:

- Effective communication skill
- Managing complaints

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 Madhya Pradesh which forms the basis of our estimation for the human resource requirement in the coming years.

A1. Employment in Rubber Industry

Around 1.17 lakh people are estimated to be engaged in the rubber industry in the state of Madhya Pradesh. 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 heart of the country, i.e. Madhya Pradesh.

Table6.1: Five Year Forecast	
Category	**Incremental Human Resource Requirement**
1. Auto tyres & tubes*	18730
2. Camel back	1220
3. Footwear	1615
4. Belts and hoses	1062
5. Latex foam	427
6. Dipped goods	619
7. Others@	1664
Total	**25336**

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 25,000 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	3
Manager	4
Operator	*47*
• *Mixing*	*14*
• *Curing*	*10*
• *Moulding*	*10*
• *Cutting*	*4*
• *Extruder*	*9*
Helper	23
Packaging/Dispatch	10
QC	6
Office/Marketing	7