RSDC
RUBBER SKILL DEVELOPMENT COUNCIL

SKILL GAP ANALYSIS

HARYANA

Chapter Scheme

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INTRODUCTION

"Learn to Earn" – it could be an apt saying for highlighting the importance of economic strength derived through skill development. One should remember that skills and knowledge are the driving forces of economic and social development for any country/state/region. Individuals with higher and better levels of skills adjust more effectively to the challenges and opportunities in the world of work. Potentially, the target group for skill development comprises all those in the labour force, including those entering the labour market for the first time, those employed in the organized sector and those working in the unorganized sector. Any industry contributing to the economy through its products or services demands people to fit in the job roles specific to their industry. However, the present educational system does not focus on industry specific requirements therefore we witness skill gaps with respect to different industry requirements.

Major challenge of skill development initiatives in a given industry is to address the needs of new entrants by providing skills in order to make them employable and help them secure decent work as well as to make the already employed workforce in that industry more efficient. Skill development for persons working in the industrial sector creates greater awareness towards environmental, safety and health concerns.

A collective, not an individualistic effort, is the need of the hour where all the stakeholders in the manufacturing sector should take part in skill development to enhance productivity, competitiveness and employability. As stated in the *National Policy on Skill Development*, the task of skill development has many challenges which include:-

a) Increasing capacity and capability of existing system to ensure equitable access to all.

b) Promoting lifelong learning, maintaining quality and relevance, according to changing requirement particularly of emerging knowledge economy.

c) Creating effective convergence between school education, various skill development efforts of government and between government and Private Sector initiative.

d) Capacity building of institutions for planning, quality assurance and involvement of stake holders.

e) Creating institutional mechanism for research development quality assurance, examinations and certification, affiliations and accreditation.

f) Increasing participation of stakeholders, mobilizing adequate investment for financing skill development, attaining sustainability by strengthening physical and intellectual resources.

In the current scenario, most of the skill learning in the industry happens through unstructured, on-the job training. The large organizations or organized companies mainly hire matriculates, ITIs & Diploma holders and give them structured on the job training. The MSME and unorganized segment of manufacturing sector hire even uneducated workers and supervise them to learn skill which is totally unstructured. The new apprentice is taken as a helper and learns various aspects of the job with time, under the guidance of his seniors. As such, there has not been much improvement and development in skill levels in the industry. The phenomenon of unskilled hiring is similar at the macro level for various industries but skill requirement is unique for each industry.

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 northern state of Haryana in India, let us have a look at the development with respect to production, consumption and trade for the main component of the rubber manufacturing industry.

Rubber in Focus

In the year 2013, India occupied the position of the fifth largest producer and second largest consumer of rubber in the world. Global ranking of countries in terms of Natural Rubber (NR) supply changed during 2013. Vietnam and China moved up to occupy the third and fourth positions respectively pushing down India to the fifth and Malaysia to the sixth positions.

Table 1.1: Production of Natural Rubber in Major Producing Countries (000 tonnes)

Country	2013	2012
Thailand	4170	3778
Indonesia	3180	3040

Vietnam	949	864
China	856	802
India	849	919
Malaysia	826	923
World	***12041***	***11603***

Source: Rubber Statistical News, May 2014

Adverse weather and fall in prices affected the production of natural rubber (NR) in India during the year ended March 2014. The production fell during the year by 7.6 per cent to 844,000 tonnes from 913,700 tonnes produced a year ago. This was largely due to the severe summer that prevailed in the State of Kerala during April and May 2013, interruption to tapping caused by unusually continuous south-west monsoon during June and July 2013 and loss in yield due to leaf diseases. Moreover, low rubber prices and high wages have compelled smallholders to reduce application of inputs and adoption of recommended farm-management practices. During 2014-15, the country is anticipated to produce 950,000 tonnes of NR up 12.6 per cent on year.

Continuing economic slowdown and the resultant low pace in automobile industry affected domestic consumption of NR during 2013-14. The consumption grew only by 0.9% to 981,520 tonnes during 2013-14 from 972,705 tonnes in the previous year. While the consumption grew in the auto-tyre manufacturing sector at 2.7 per cent rate, it fell 2.4 per cent in general-rubber goods sector. **Of the total quantity of NR consumed in the country during 2013-14, auto-tyre sector accounted for 66.5 percent and the balance 33.5% was absorbed in the general rubber goods sector.** During 2014-15, the consumption of NR in the country is anticipated to rise 2.9 per cent to 1.01 million tonnes.

Table 1.2: Consumption of Natural Rubber in Major Consuming Countries (000 tonnes)

Country	**2013**	**2012**
China	4150	3857
India	962	988
USA	913	950
Japan	712	728
Thailand	520	505
Indonesia	603	548
Malaysia	434	441
World	***11397***	***11079***

Source: Rubber Statistical News, May 2014

The extent/proportion of rubber consumption in the different segments has a correlation with the employment requirement. Not only the industry that is using the natural and synthetic rubber demand skilled labourer but the reclaim rubber sector do presents the greater job opportunities with the production crossing 1.24 lakh tonnes in 2013-14.

The country produced 112,886 tonnes of synthetic rubber (SR) during 2013-14, up 3.9 per cent on year. The consumption of SR in the country rose by 8.9 per cent to 483,575 tonnes during the year under review. The consumption grew faster at 11.5 per cent rate in the general rubber goods sector as against 7.9 per cent growth attained in the auto-tyre manufacturing sector.

Table 1.3: Rubber Balance at a Glance

2013-14	Production	Consumption
Natural Rubber	**844000**	**981520**
Ribbed Smoked Sheet	622540	560230
Solid Black Rubber	106815	322250
Latex Concentrates	68075	77515
Others	46570	21525
Synthetic Rubber	**112886**	**483575**
Styrene Butadiene	22105	220950
Poly Butadiene	80685	158260
Others	10096	104365
Reclaimed Rubber	**124325**	**123725**

Source: Rubber Statistical News

The relative shares of NR and SR in the total volume of NR and SR consumed in the country continued to tilt in the favour of SR during 2013-14. As a result, the relative NR share fell by 1.7 percentage point from 68.7 per cent in 2012-13 to 67.0 per cent in 2013-14. The declining NR share may be traced against the increasing dominance of passenger car tyres in the country's total production of auto-tyres.

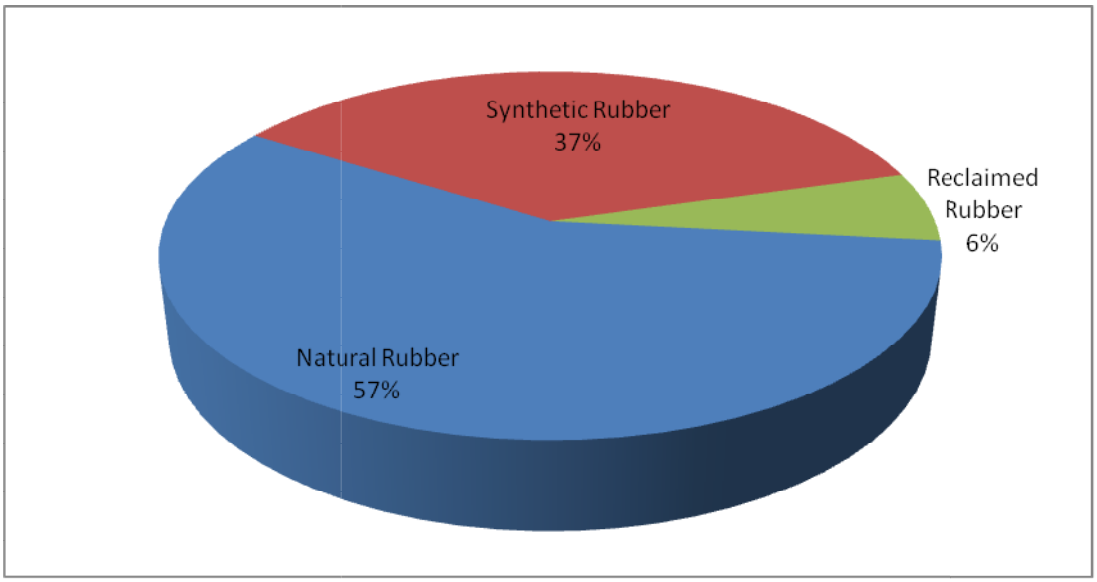
For natural as well as synthetic rubber, consumption is higher than the production in the country indicating towards the existence of external trade for the commodity. The import and export of the raw material as well as manufactured products (tyre as well as non-tyre) takes place between India and other countries.

After discussing the rubber consumption pattern at the all India level, let's have a look at the trends in rubber industry in the state in focus, i.e. Haryana.

Rubber Consumption in Haryana

In the year 2013-14, Haryana is positioned as the tenth largest rubber consuming state in India. The total consumption of 61,435 tonnes of rubber comprised of 35,200 tonnes of natural rubber, 22,475 tonnes of synthetic rubber and 3,760 tonnes of reclaimed rubber. Tamil Nadu, Kerala, Maharashtra, Andhra Pradesh and Rajasthan are the top five rubber consuming states in the country.

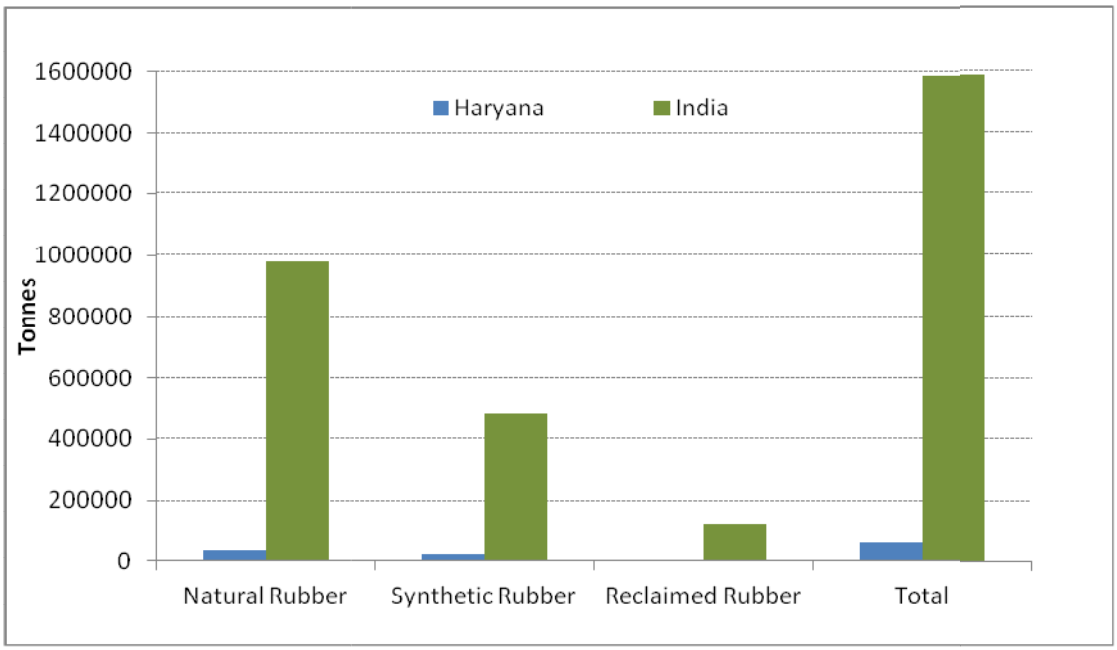
Fig 1.1: Total Rubber Consumption: Haryana



Source: Rubber Board

The total consumption of rubber in the year 2013-14 for the northern state stood at 3.9 percent of the total rubber consumption in India. For the state of Haryana, natural and synthetic rubber constituted 3.6 percent and 4.6 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.

Fig 1.2: Rubber Consumption: 2013-14



Source: Rubber Board

Out of the 21 districts, Sonepat, Faridabad (Ballabgarh), Panipat and Jhajjar (Bahadurgarh) districts are among the main centers for the manufacturing of rubber products in the state. The number of licensed manufacturers in the state has witnessed a decline of 11 percent over the last five years.

Table 1.4: Dealing In Rubber: Haryana

Year	No. of licensed manufacturers	No. of licensed dealers
2009-10	362	58
2010-11	336	54
2011-12	338	48
2012-13	318	49
2013-14	323	52

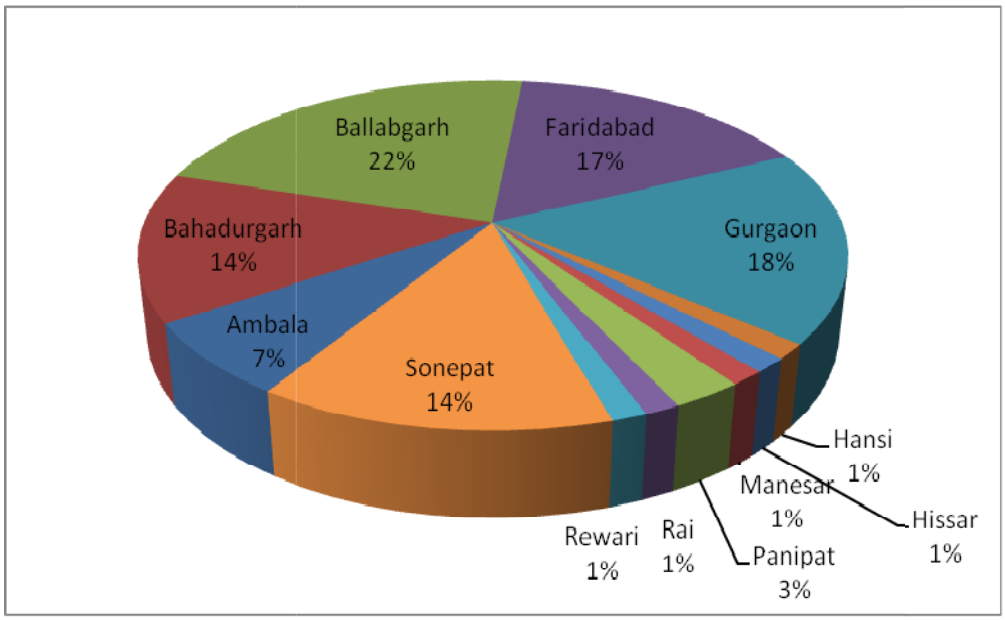
Source: Rubber Board

In order to understand the various factors affecting the employment in the rubber industry and skill requirement in the state, a survey of 73 units has been conducted. The next chapter presents the details, analysis and findings of the skill gap study in the state.

SURVEY ANALYSIS

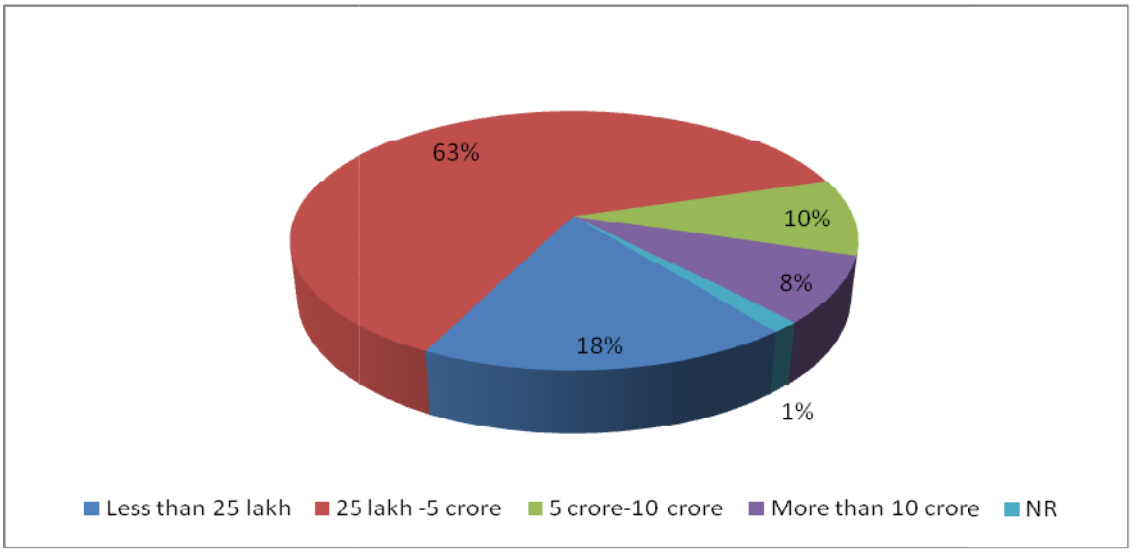
This chapter presents the analysis of the data collected from the select rubber products manufacturing firms across the different segments. A total of 73 firms were selected for the study of skill gap analysis in the rubber product manufacturing industry from different cities in the northern state of Haryana. The firms engaged in the production of different products were considered including belt, footwear, foam product, hose pipe, rollers, surgical goods, fabric, tread rubber, auto and cycle parts, tyre, tube and flap, moulded and extruded rubber products. The analysis focuses on to provide an insight into the pattern of manpower recruitment, their skills, skill gap, training status and requirement in the rubber industry of Haryana based on the feedback received from the surveyed firms. It would help in understanding the existing and emerging skill gaps with respect to the rubber industry in Haryana. The chapter concludes with summarizing the industry players' expectations from the various stakeholders viz, RSDC, Industry Association, Educational Institutes and other stakeholders.

Fig 2.1: Survey Coverage



In order to provide a wide coverage across the industry based on investment and number of persons employed –tiny, small, medium and large scale firms have been covered in the survey. Majority of the respondent firms have invested upto 5 crores based on the information shared with respect to their total investment in the business. Among the respondents, there are 63 percent small scale, 18 percent tiny, 10 percent medium and 8 percent large scale firms. However, only one percent did not reveal the exact amount invested in their enterprise.

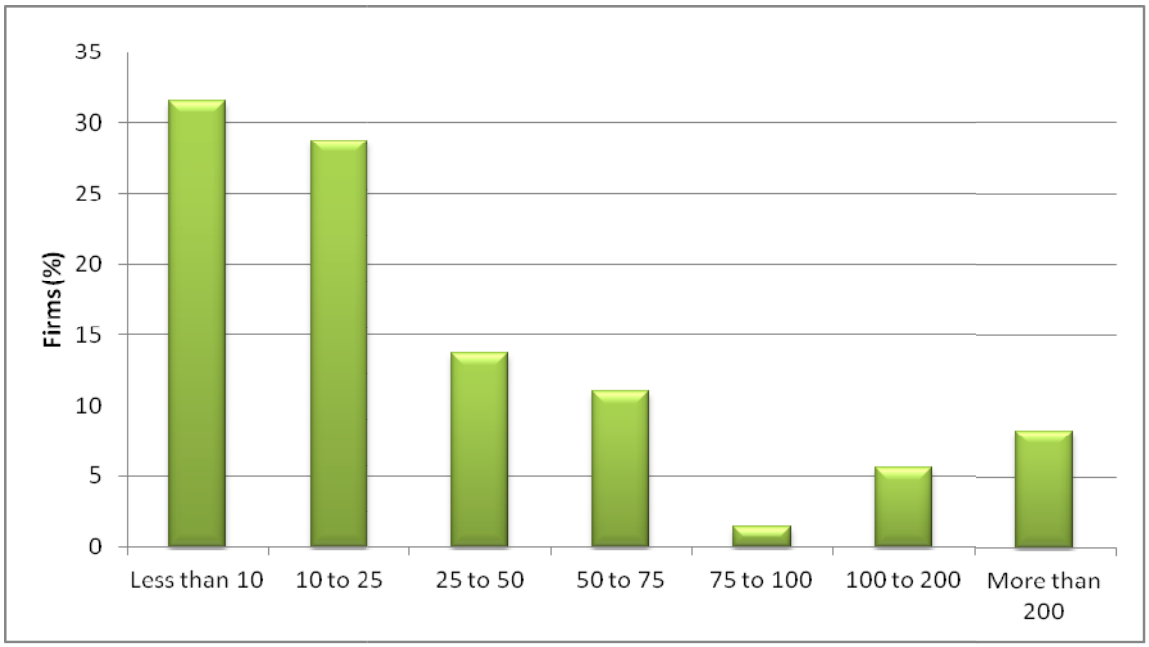
Fig 2.2: Firms' Investment



Another important variable reflecting the size of the firm relates to the total number of employees in the organization. The employment pattern reveals that two third of the firms employ less than 50 persons. It has been noticed that more than 30 percent of the firms have

less than ten employees reflecting the presence of tiny firms in the rubber manufacturing sector in Haryana. All those firms having more than 200 employees belong to medium and small scale firms. Almost each and every firm has maintained that they face problem in getting skilled manpower.

Fig 2.3: Employment Pattern



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. Majority of the rubber products manufacturing firms were established before the beginning of 21st century.

Table 2.1: Commencement of Business

Year of Establishment	Number of Firms
1950-1975	14
1975-2000	37
2000-2015	15
NR	6

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 Haryana depicts that 67 percent of the surveyed firms have hired all the employees on their roll and only 3 percent have more than 75 percent off roll employees. No single firm has all employees hired on off roll basis. Those firms which have off roll employees also do not indicate any correlation with the size of the production and investment by them.

Table 2.2: Employees Recruitment

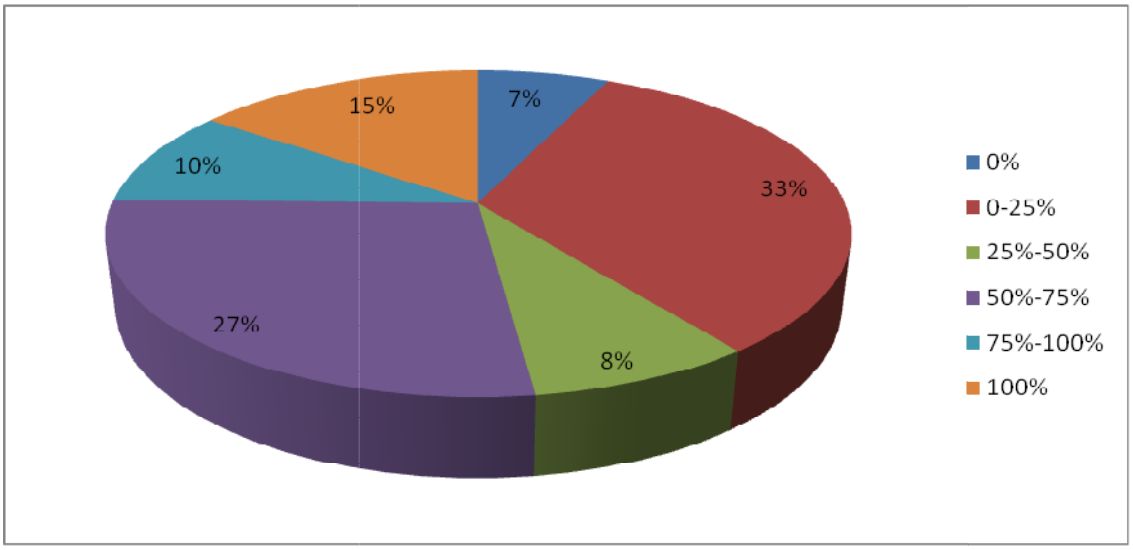
Percentage of on roll employees	Surveyed Firms (%)
Less than 25	3
25-50	3
50-100	26
100	67
NR	1

The most effective method of employing workers is through internal references and direct interview for 90 percent of the surveyed firms. However, there are only few firms which are using the consultancy, placement agency, contractor and their HR department to get the relevant people for the vacant positions in their production unit.

Employees Recruitment

Among the total firms surveyed in the state, it has been noticed that 15 percent of them have recruited all the employees from Haryana only. Only seven percent organizations have all the workers coming from outside the state. They mainly belongs to the states of UP and Bihar.

Fig 2.4: Employment Pattern: Employees from Haryana



Easy availability is the main reason listed by the firms hiring the people from Haryana only. In all, 62 firms have employees coming from the other states to work in their factory premises. The employment trend depicts that majority of the firms surveyed preferred recruiting the employees from outside have their origin from the state of UP and Bihar. Rajasthan do contribute to the workforce engaged in the surveyed rubber industries in Haryana though in a very small proportion.

The main positions for outside people are for helper, operator and high skill job roles. Some of the firms have clearly mentioned that outside people are hard working and easily available. However, majority of them have not mentioned any reason for hiring from outside Haryana.

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 tiny, small, medium and large scale firms. Also, the firms established in the 21st century and that operating for more than 15-20 years, employee's attrition has remained low.

Table 2.3: Attrition Rate

Less than 5 %	• 95%
5- 20 %	• 5%

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 firm's retention strategy is related to the salary payment. For 92 percent of the firms, it is the monetary aspect related to good pay, bonus and increment as well as salary as per government and labor law rule which play an important role in encouraging people to remain associated with them for a longer period. Only three firms involved in the production of auto parts and extruded products in Ballabgarh have given importance to long term career growth plan as their retention strategy

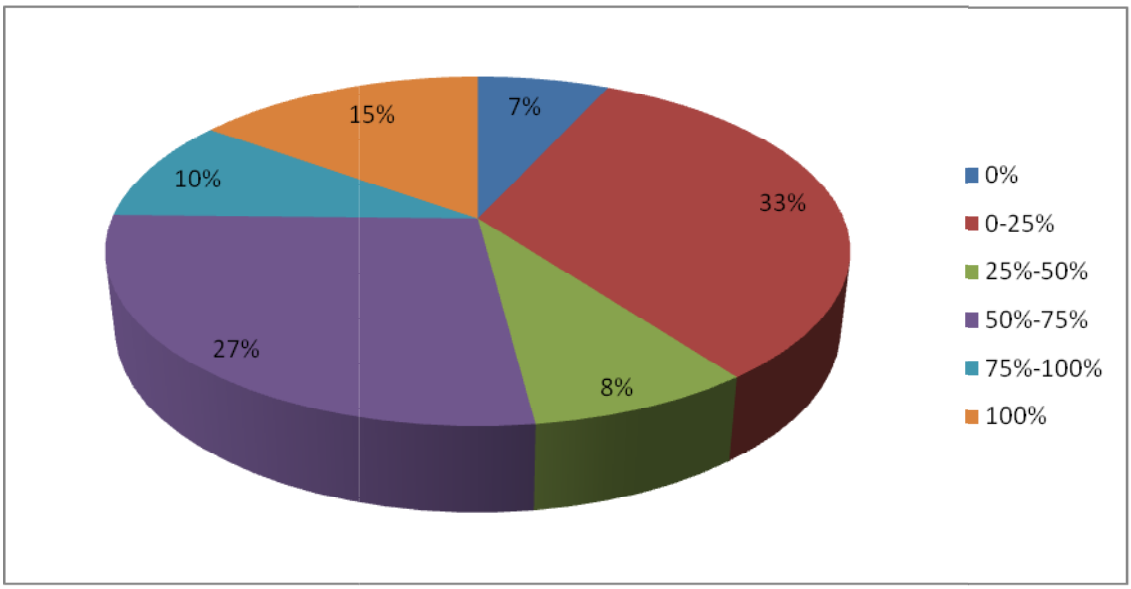
Table 2.4: Retention Strategy

Retention Strategy	Firms Response (%)
Good pay, increment, bonus and facilities	62
Salary as per government and labor law rule	30
Plan for long term career growth , giving advance to employee	4
Leave sanction and additional bonus	3
Others	1

Requirement and 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 fifth of the respondent firms mentioned the requirement for supervisory role which could be a reflection of their scale of production. Interestingly, no firm has highlighted any requirement specific to quality assurance and non-core activities.

Fig 2.5: Key Job Role Requirement



In Haryana, finding requisite number of people for carrying out the rubber products manufacturing by the firms is not a major concern for 59 percent of the respondent firms. However, the shortage of skilled manpower has been identified as a common problem by 36 percent of the firms. There are very few firms which face difficulty in hiring helpers. 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 emerge for lesser number of firm.

Actual Employment

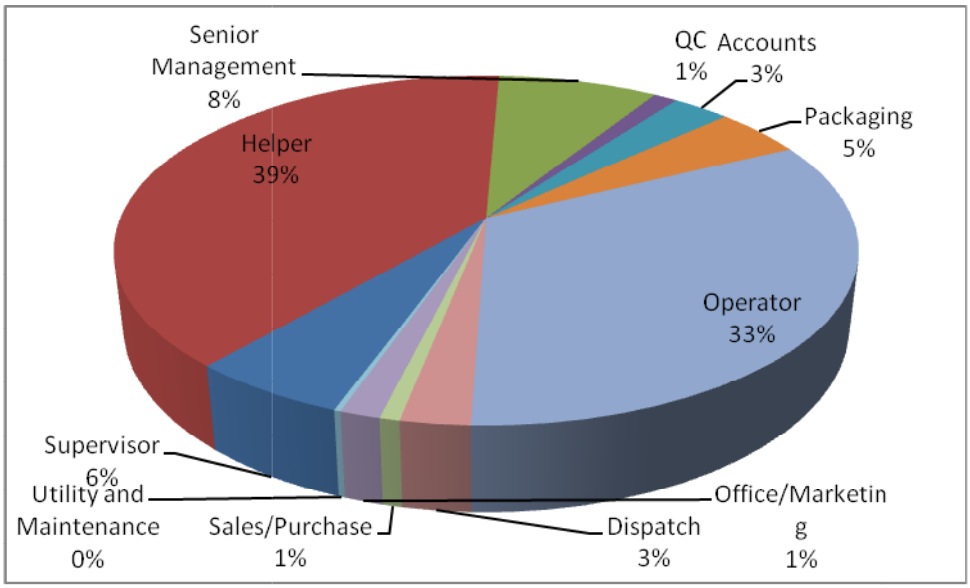
The main categories for which firms have listed out their total employment pattern are as follows:

- Supervisor
- Operator
- Helper
- Senior Management
- Accounts
- Quality Control

An analysis of the employment pattern reflect that for 50 percent of the surveyed firms operators and helpers constitute 70 or more percent of their total employees. However, for supervisory role 71 percent of the firms have recruited less than 10 percent of their total work force. Interestingly, except for eleven firms out of the total respondents, all have recruited people at the designation of supervisor. However, 43 percent of the respondent firms have no

one recruited separately for accounts work. The share of senior management for half of the surveyed firms remains less than 10 percent. It should be noted that only 10 percent of the firms have personnel separately recruited for quality control or as lab chemist.

Fig 2.6: Industry's Employment Scenario



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. More than 70 percent of the firms surveyed are hiring 80 percent or more of their total employees in the production section. This trend is not specific to any location or scale of production. Moreover, the trend is in line with the findings related to the key job roles for employment in this sector.

Table 2.5: Workforce in Core Production Activity

Recruitment in Core Functions of Production	Surveyed Firms (%)
90% and above	21
80 to 90 %	53
70 to 80 %	25
60 to 70 %	1

Educational Profile

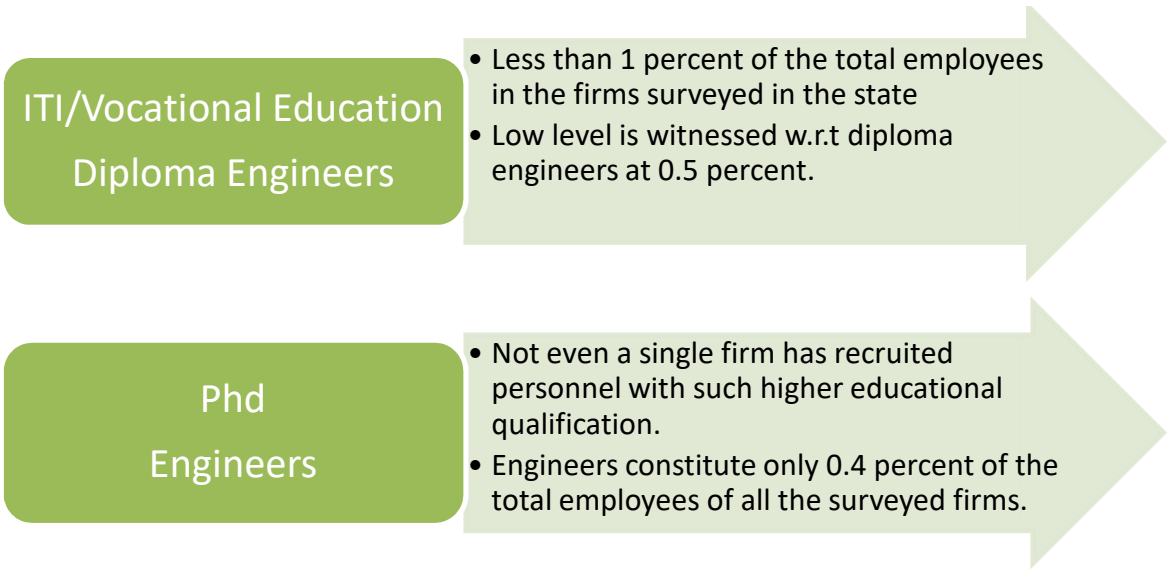
It is assumed that the skills do have a strong correlation with the educational background of the workers and considering that this section highlights in detail the present scenario of the educational status of the workers employed in the rubber industry in the state of Haryana. There are 20 firms who have not shared the details of their employees' educational profile

therefore, this section will present the analysis for the firms (53) which have shared the educational details of their employees. No single firm out of the total surveyed firms has all the employees who are metric pass and hold higher educational qualification. It is interesting to note that nearly two third of the total respondent firms (64 percent) have 60 percent or more employees who are not even metric pass.

Table 2.6: Educational Concern

Percentage of employees below 10th standard	Surveyed Firms %
Less than 40 percent	17
40-60 percent	19
60-80 percent	19
80-100 percent	45

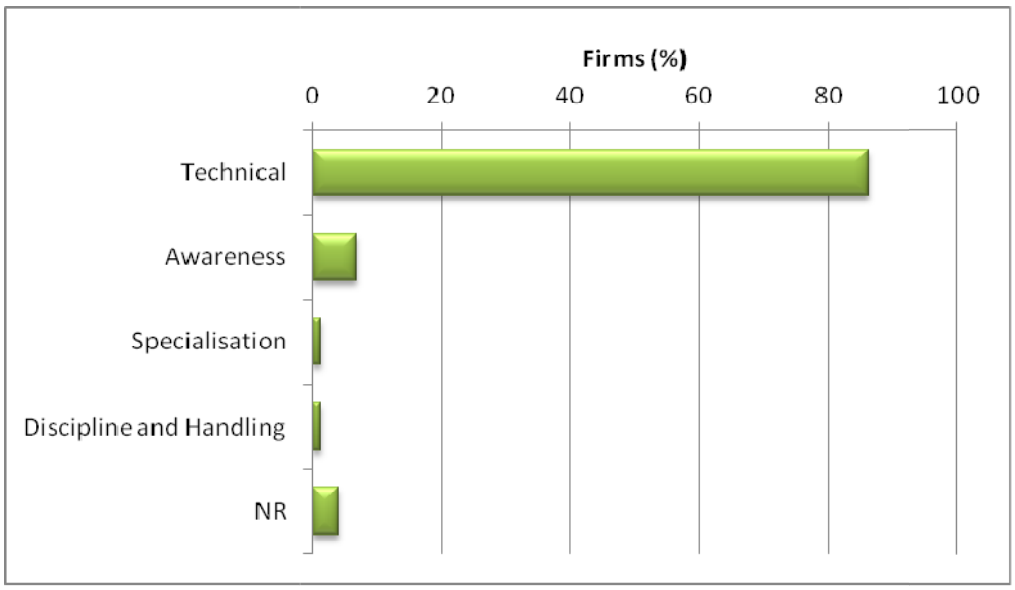
It is important to note that the industry employment should focus on vocational and specialized education. However, the ground reality shows that less than 1 percent of the total number of firms engaged in the rubber products manufacturing have hired ITI/vocational educated personnel. Similar is the case with the diploma holders. Only one firm has 1 percent of their employees who are diploma holders. Also, there is not even a single firm which hires highly qualified personnel in the research department. The presence of Engineers in the rubber manufacturing units is negligible, not even accounting for 0.5 percent of the total number of employees. Graduates working in the rubber manufacturing units are mainly associated with the accounts, marketing, quality assurance and management department.



Missing Skills

Those 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 tiny, small, medium or large scale organization. An important area of concern that some of the firms reported relate to the awareness and disciplinary skills which is more related to the personality trait than being specific to a particular industry. As the employees mainly gain knowledge on the job which has been highlighted throughout in the survey responses, the weakness on the part of specialization seems to be another area of concern for fewer firms.

Fig 2.7: Missing Skills



Skill Gap

For various job roles, the skill gap prevalent in the rubber industry in the state is analyzed in detail in the section below. There are different/similar skill gaps reported by the surveyed firms for specific job roles and the intensity of that gap is rated as high, medium and low by the respondents.

A. Production Supervisor Skill Gap Response	No. of Firms
Lack of proper training	25
Unaware of new technology/Lack of latest technology used in rubber sector	23
No formal technical training	15
Lack of specialize sector operational knowledge	7
Lack of experience	7

Lack of Manpower management skill	5
Unaware of machinery used	4
Relationship with workers	3
Work based on experience	3
Lack of proper skill and ability	2
Lack of knowledge to identify work of helper and operator	2
Guiding ability	1
Skill Gap Intensity	
High	17
Medium	29
No skill gap manifested	8

B. Mixing Operator Skill Gap Response	No. of Firms
Lack of knowledge to operate the machine	38
No formal technical training	35
Lack of technical knowledge of various chemicals and rubbers	26
Unawareness towards proportion of raw material used/properties of inputs	21
Lacks capability to find faults in the product	15
Works based on experience	12
Lack of training and certification	8
Lack of education and behavior	5
Poor housekeeping	4
Lack of interest	3
Lack of specialization	2
Lack of measuring instrument knowledge	1
Skill Gap Intensity	
Medium	56
Low	6

C. Kneader Operator Skill Gap Response	No. of Firms
Lack of technical knowledge of various chemicals and rubbers	22
Lack of knowledge to operate the machine	22
Lack of training and certification	5
Unawareness towards mixing operation	5
Lack of education and proper behavior	5
Skill Gap Intensity	
Medium	22
Low	5

D. Vulcanization/Curing Operator Skill Gap Response	No. of Firms
Lack of formal /technical training	17
Technical skill gap identified	9
Communication gap between workers	5
Lack of safety consideration	5
High wastage	5
Poor coordination between workers and helpers	5
One worker performs many works	5
No knowledge of curing temperature , pressure and timing	5
Lack of training and certification	4
Lack of education and behavior	3
Lack of knowledge of latest technology used in rubber sector	3
Technical knowledge of curing in the vulcanization pan	2
Skill Gap Intensity	
Medium	28

E. Calendaring Operator Skill Gap Response	No. of Firms
Lack of technical training	3
Do not have expertise on other machine	3
No proper attention/interest	3
Lack of technical knowledge	3
Lack of operating experience	3
Lack of specialization	1
Skill Gap Intensity	
Medium	7
Low	1

F. Moulding Operator Skill Gap Response	No. of Firms
Lack of tyre specialization and experience to perform operation	11
No formal/technical training	8
Lack of knowledge of to operate the compression molding machine	7
Lack of knowledge of setting the parameters of moulding for curing the final product	5
Lack of knowledge of operating the automatic machine or semi automatic machine	4
Training, certification and recertification	4
No expertise on machine	4
Unawareness towards operation	3
Lack of interest/attention	3
lack of education and proper behavior	1
Lack of specialization	1
No use of any safety equipments	1

Equipment maintenance is done after a long time	1
One worker performs many works	1
High wastage	1
Skill Gap Intensity	
Medium	26
Low	2

G. Extruder Operator Skill Gap Response	No. of Firms
Lack of training to handle machine properly/working procedure of the machine	23
Lack of interest to handle machine carefully	22
Lack of training and certification	15
Unawareness towards operation	5
lack of education and proper behavior	4
Sometimes no proper attention during work which may cause accident during the work	4
Poor housekeeping	2
No expertise on machine	2
Lack of specialization	1
Lack of technical knowledge	1
Skill Gap Intensity	
Medium	28
Low	5

H. Boiler Operator Skill Gap Response	No. of Firms
Lack of training and certification	4
Unawareness towards operation	4
Lack of education and proper behavior	4

Skill Gap Intensity	
Low	4

I. Hydraulic Press Operator Skill Gap Response	No. of Firms
No proper technical knowledge of machine	8
Lack of training and certification	6
No proper training	6
High wastage	3
Unawareness towards operation	3
Lack of knowledge of parameter setting	3
No use of any safety equipments.	3
Equipment maintenance is done after a long time	3
One worker performs many works	3
Lack of education and proper behavior	2
Lack of specialization	1
Do not have expertise on other machine	1

Skill Gap Intensity	
Medium	14
Low	3

J. Grinding Operator Skill Gap Response	No. of Firms
Sometimes no proper attention during work which may cause accident	6
Lack of training and certification	2
Unawareness towards operation	2
lack of education and proper behavior	1
Poor housekeeping	1

Skill Gap Intensity	
High	1
Medium	6
Low	1

K. Mandrelling Operator Skill Gap Response	No. of Firms
Lack of knowledge and training	2
Requirement of quality skilled people	1
Skill Gap Intensity	
Medium	3

L. Winding Operator Skill Gap Response	No. of Firms
No formal technical training	3
No proper attention	2
Skill Gap Intensity	
Medium	3

M. Dipping Operator Skill Gap Response	No. of Firms
Lack of attention during dipping of moulds	2
Lack of formal training	2
Skill Gap Intensity	
Medium	2

N. Ball Mill Operator Skill Gap Response	No. of Firms
Lack of technical knowledge of various chemicals and rubbers	2
Lack of knowledge to operate the machine	2
Skill Gap Intensity	
Medium	2

O. Braiding Operator Skill Gap Response	No. of Firms
Lack of training and certification	2
Unawareness towards operation	2
Lack of education and proper behavior	2
No proper technical training	2
Do not have expertise on other machine	2
Skill Gap Intensity	
Medium	2
Low	2

P. Trimming/Deflashing/Cutting Operator Skill Gap Response	No. of Firms
Lack of attention during cutting	8
Lack of training and certification	5
No proper knowledge of cutting the sheet	3
Lack of knowledge of cutter	3
Lack of technical knowledge	2
Poor housekeeping	2
Unawareness towards operation	1
Lack of education and proper behavior	1

Expertise on machine	1

Skill Gap Intensity	
Medium	10
Low	1

Q. Pasting Operator Skill Gap Response	No. of Firms
Lack of experience	1
Unaware of adhesives, chemicals and rubber compound properties	1
Skill Gap Intensity	
Low	1

R. Wrapping Operator Skill Gap Response	No. of Firms
Lack of interest	1
No formal training	1
Skill Gap Intensity	
Medium	1

S. Finishing Operator Skill Gap Response	No. of Firms
Poor housekeeping	1
No proper attention during finishing	1
Skill Gap Intensity	
Medium	2

T. Helper Skill Gap Response	No. of Firms
Technical gap	42
Lack of training /no formal training	28
Unawareness towards machine operation	22
High wastage	17
Proper work knowledge and experience	17
Lack of interest/attention	11
Lack of education and proper behavior	7
Communication for work and schedule.	5
Negative attitude towards work/lack of positive attitude	5
Slow and poor performance of the work	4
Not having punctuality	3
Negligence in assigned work	3
Don't have proper knowledge of importance of finishing product	3
Dependent worker, Not self motivated towards work	2
Lack of packaging skill	1
Periodically packaging manual is not followed by packaging helper.	1
Poor housekeeping	1
Skill Gap Intensity	
Medium	11
Low	53

U. Accountant Skill Gap Response	No. of Firms
Lack of updated knowledge of accounts and rules.	11
Skill Gap Intensity	
High	1
Medium	10

No skill gap manifested	15

V. Quality Control Skill Gap Response	No. of Firms
Lack of experience in rubber sector	1
Lack of skill to make new patents & improve ongoing patents	1
Lack of equipment's knowledge	1

Skill Gap Intensity	
High	1
No skill gap manifested	6

Regional/State level Variation in Skill Gap

According to the firms producing different rubber products in the state of Haryana, there is a common problem of shortage of skilled manpower therefore as per the responses of 90 percent of the surveyed firms, they have not witnessed any the regional/state level variations in the skill gap. Two firms have highlighted that workers from other states are hard working as compared to local people. One of the firms has mentioned that skill gap emerges because of lack of quality rubber institutes to guide and educate the workers in their region.

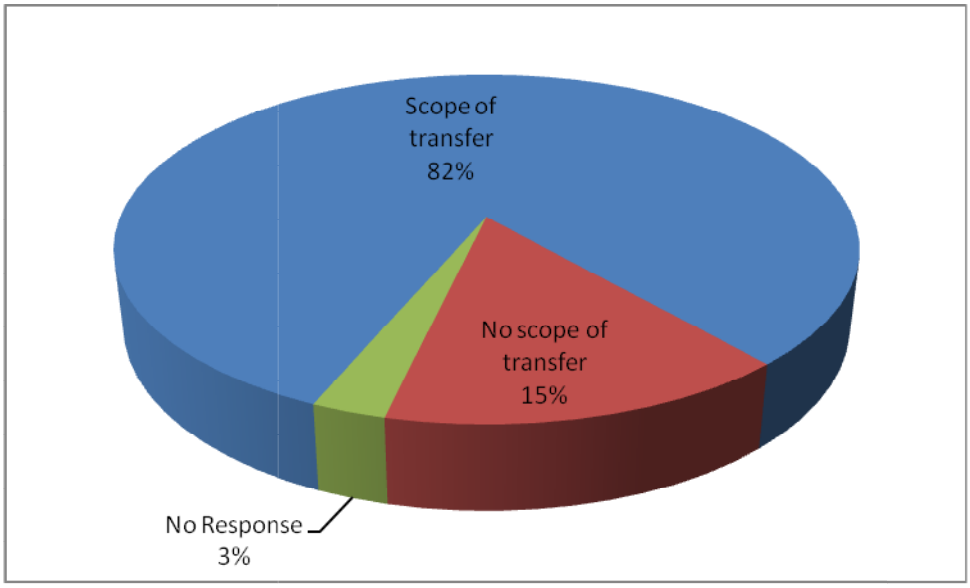
Role Transfer

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 80 percent of the respondents admit that there exists a scope of transferring role among employees. Three firms clearly mentioned that such role transfer takes place only in case of emergency. However, those who have denied the existence of such phenomenon in their factory premises belongs to tiny, 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 15 percent respondents.

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 then 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.

Fig 2.8: Scope of Transferring Role



Training

Out of the 73 firms, nine of them have a separate training department for their employees. These firms are involved either in the manufacturing of rubber belts or molded products. There is a combination of small as well as large scale firms which have allocated separate resources especially for training their employees. Ninety percent of the respondent firms do not have any separate training department which clearly indicates less interest shown by the organizations in allocating separate resource for training the employees. However, the responses indicates that the experienced persons are mainly engaged in providing in house training (on the job training) to the work force working in the rubber products manufacturing units.

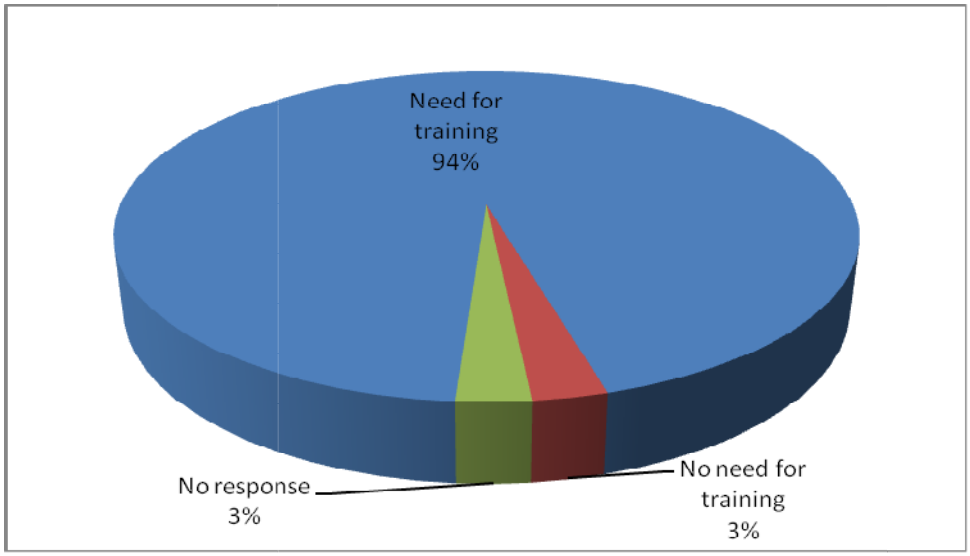
Although majority of the firms do not have any separate training department, they provide training to the employees by utilizing their in-house resources. It has been noted that in the smaller organizations experienced workers mainly take up the responsibility of training the new employees in the organizations. Here, the attitude on the part of the organizations too does not reflect an encouraging trend towards resolving the issue of technical skills.

Requirement for Training

Although majority of the firms do not allocate specific resources for training department, those who responded 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 for training requirement.

Fig 2.9: Training Requirement



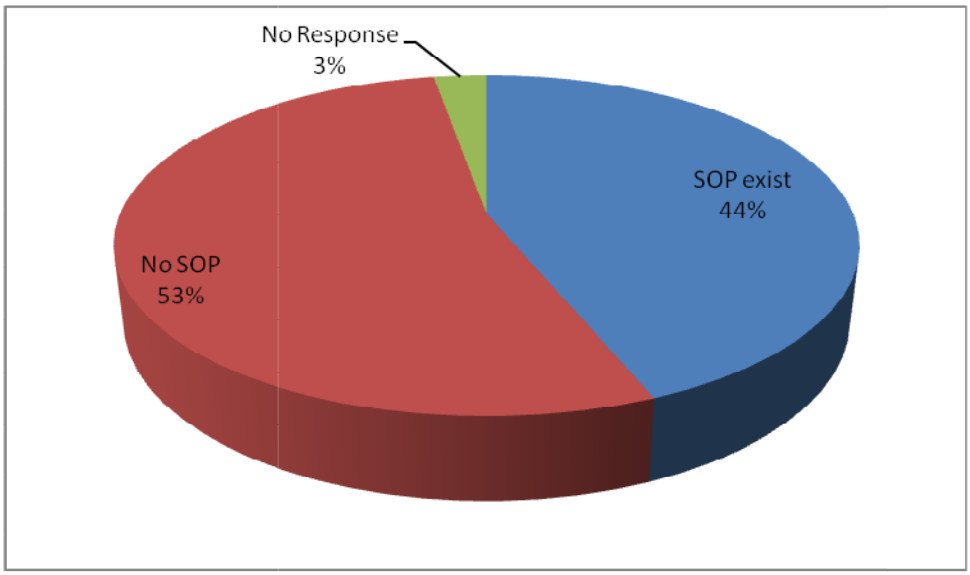
Training Institutes

Regarding the association of rubber products manufacturing firms of different segments with the training institute, the ***survey results present a significant observation that 99 percent of the surveyed firms have no direct relation with the training institutes.*** Only one firm involved in the manufacturing of tyre flaps in Sonepat has relationship with training institute. Majority of the firms have not tried to contact any training institute. One of the firms mentioned that the training is costly.

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. More than half of the organizations surveyed do not have Standard Operating Procedures at their units. Processes are carried out based on verbal instructions. Forty four percent of the respondent firms have SOP and they revise it at different time intervals. For firms following SOP, 31 percent of them revise it annually, 25 percent based on ISO norm and 9 percent based on the requirement. However, no response with respect to SOP revision is shared by 22 percent of the firms following SOP.

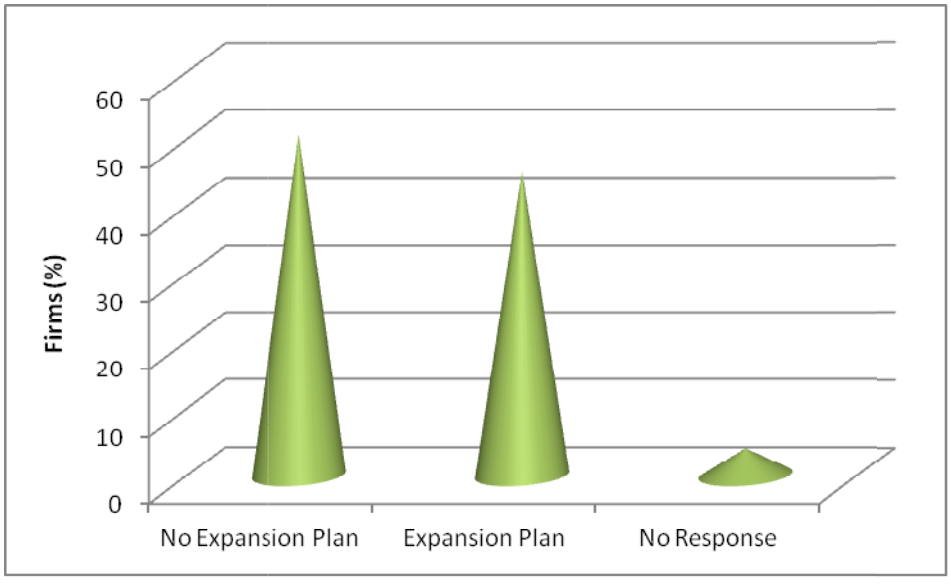
Fig 2.10: Status of SOPs



Expansion Plan and Skill Requirements

Only forty five of the surveyed firms reported that they have the future expansion plans. Those firms are either looking forward to expand same line of business or enter a new extending product line. ***Major change envisioned by the majority of firms in future relates to upgrading the technology moving from semi to full automation technology.*** Firms moving towards the technology upgradation will require skilled and trained manpower for handling automated machines.

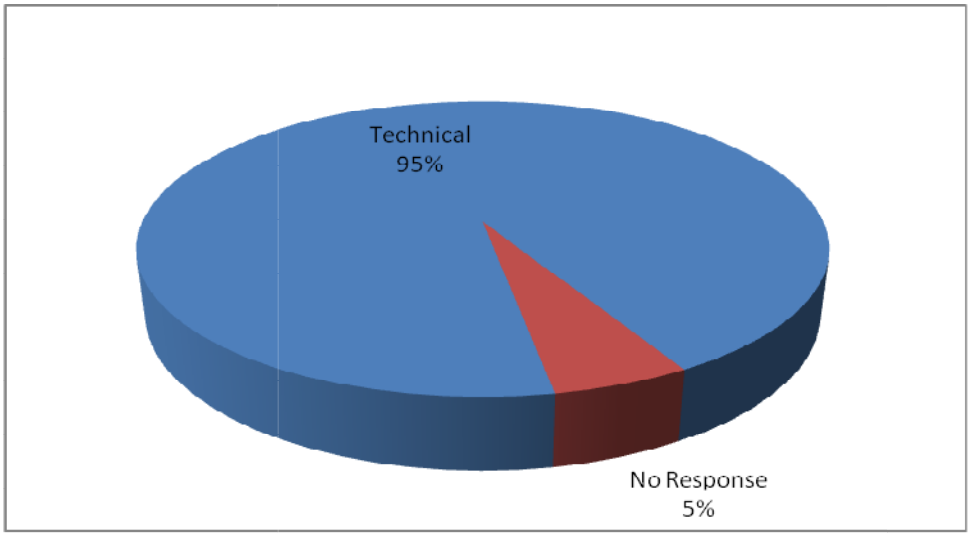
Fig 2.11: Firms' Vision



Future Trends

Technical education is one area where most of the respondents feel that the educational level skill gap would emerge. Technical diploma that would be relevant for industry is seen as the main gap. 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. Within the various job roles associated with the rubber product manufacturing, some of the respondents clearly stated that skilled operator would be main job work where skill gap would emerge in the coming five years.

Fig 2.12: Emerging Skill Gap



Skills vs Performance Review

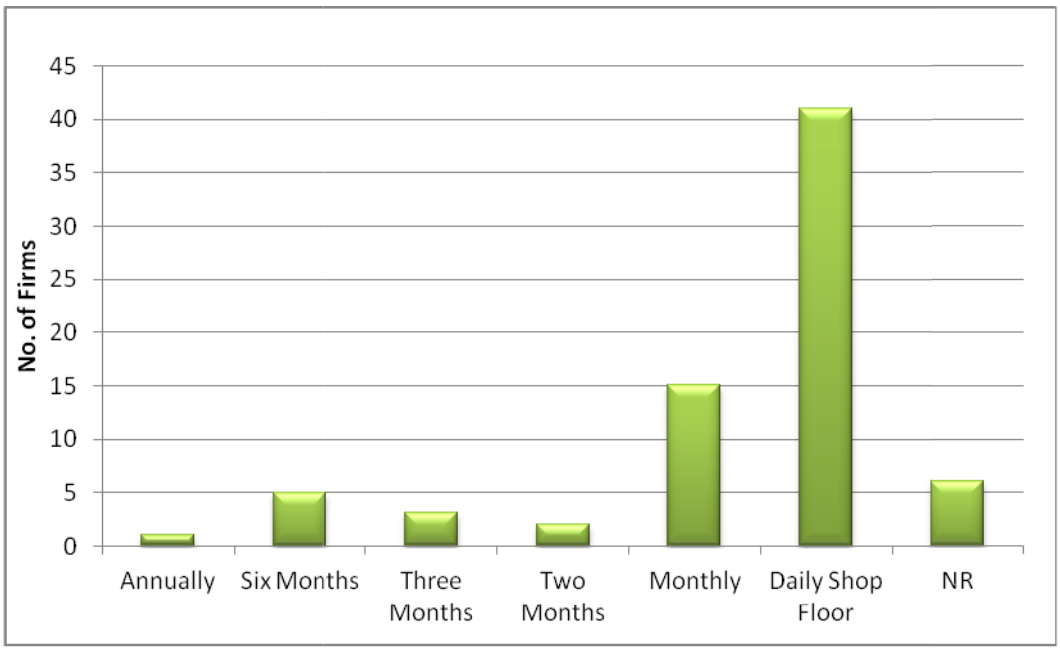
Performance of any employee depends on the ability to perform the work assigned efficiently, effectively and in timely manner. However, the output is important but the review of the performance is no less significant to develop and maintain new and existing skills.

Table 2.7: Measuring Output

Workers Output Measurement Parameter	Firms (%)
Quantity produced	70
Production and Rejection	4
Hours spent	17
No Response	3
No Measure	1
Others	5

Performance review depends greatly on how one measures the output of the worker. Only four percent 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. However, 4 percent of the firms surveyed mentioned the production and rejection both considered as an output measurement technique whereas for 3 percent of the respondent firms it the time spent by the workers on the shop floor which forms the main component of output measurement by them.

Fig 2.13: Frequency of Performance Review

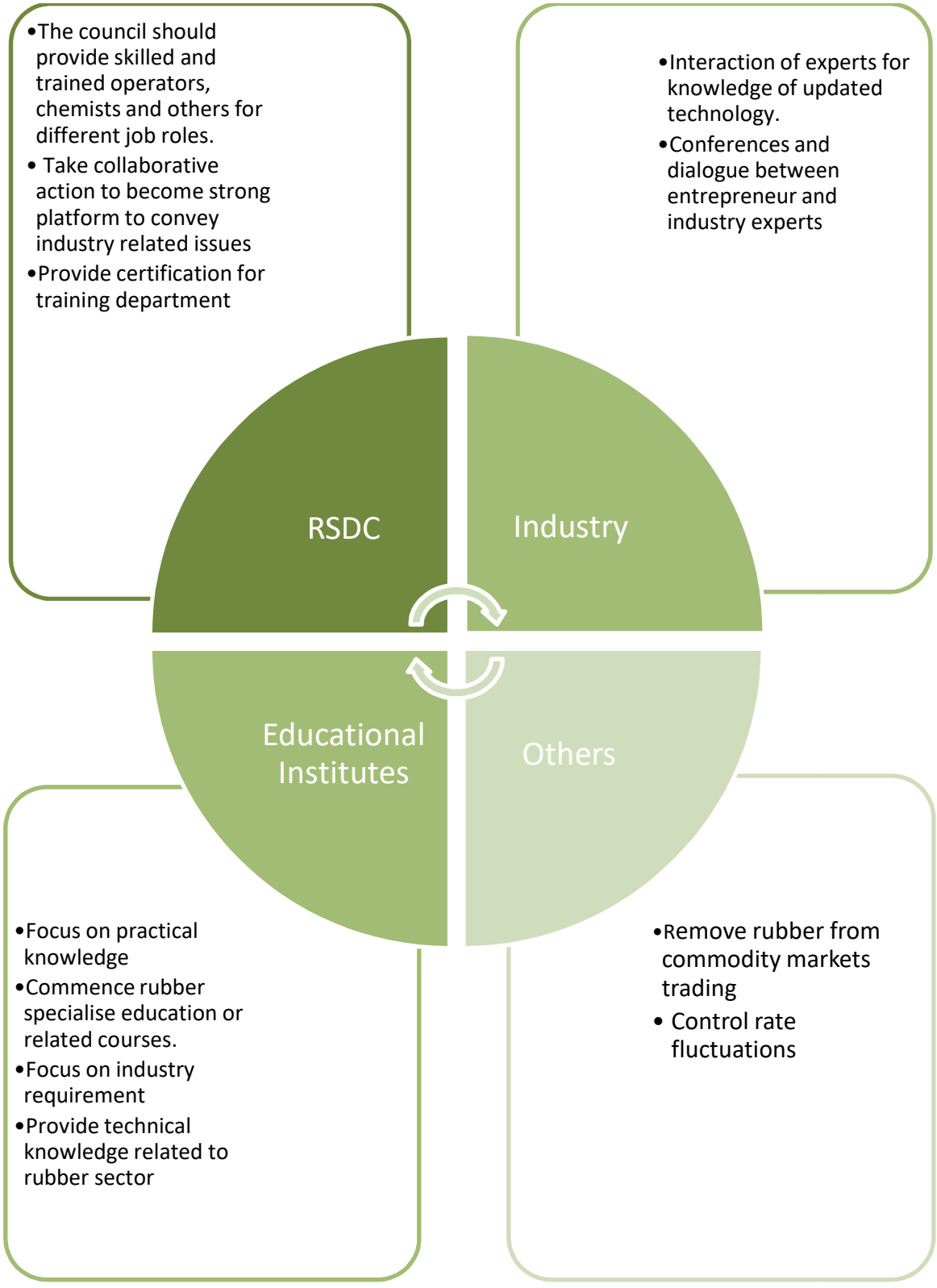


All the surveyed firms have shared their process or method of reviewing their workers performance. Performance review of the workers takes place at different time intervals. However, more than half of the firms review the workers performance on daily basis while supervising their shop floor activities. One fifth of the firms carry out the performance review on monthly basis which are mainly engaged in the production of moulded and extruded rubber products.

Stakeholders Actions

To address the skill gap issue in the rubber industry in the state of Haryana, the respondents from the different product segments have suggested the Rubber Skill Development Council (RSDC) to play a significant role in providing the skilled and trained labour force for this industry. However, the firms did not share any role for educational institutes and have not shown any interest in their participation in skill development for rubber sector. An important

suggestion that has emerged from the survey findings for governments role is to provide training should be provided free of cost.

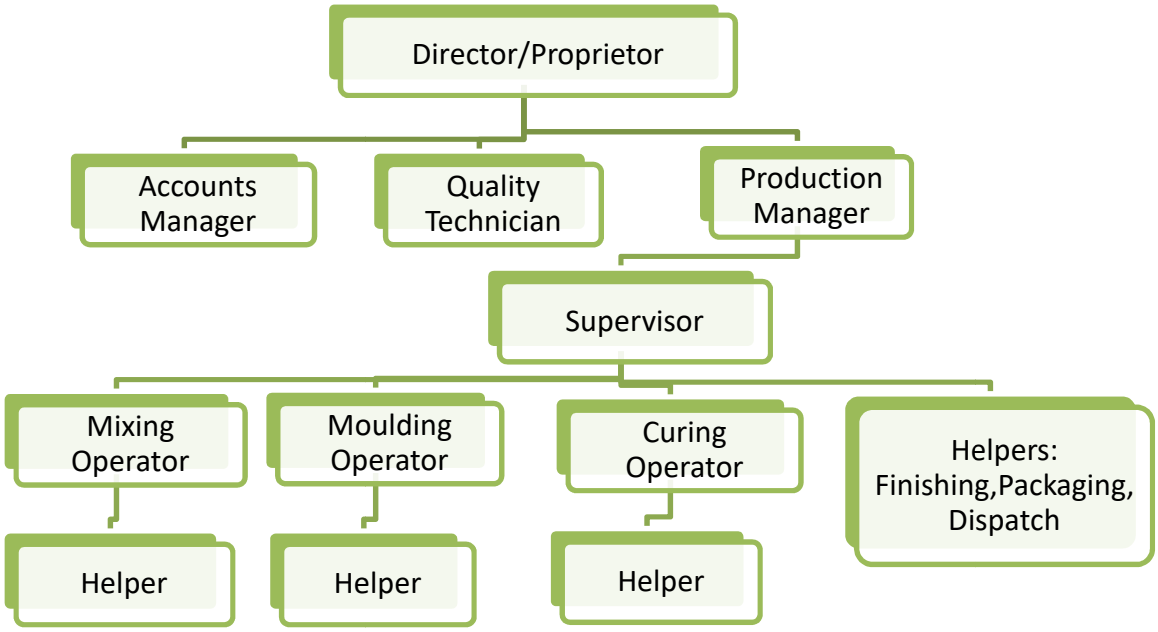


PRODUCT SEGMENT WISE ANALYSIS

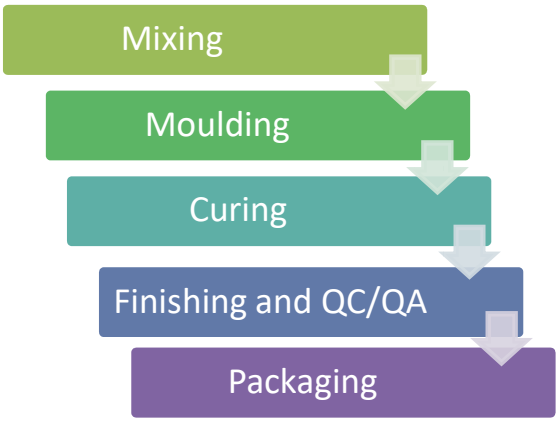
Moulded Products

Only one fourth of the respondent firms producing moulding products mentioned that they recruit only local people for their manufacturing process. Three fourth firms are employing outside people in this segment (ranging from 5-95 percent of their total employees) and those employees are coming from the state of Bihar and Uttar Pradesh. The survey findings reveal that the firms are looking forward to move to automated processes.

Organization Structure



Process Outline:

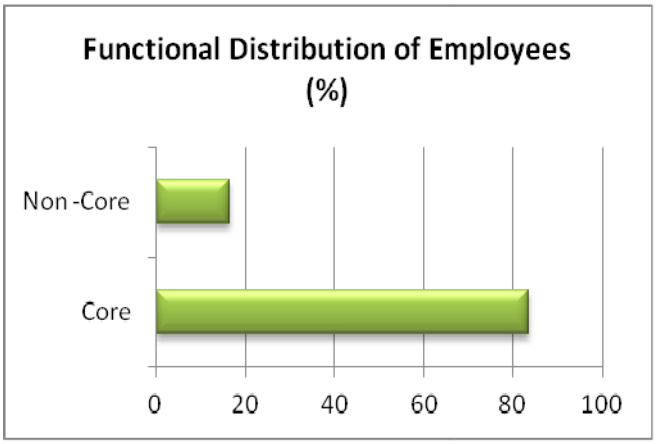


Compound is obtained by mixing the raw materials in a mixing machine. The mixing takes place as per the required specification and then the sheet/strip is prepared. Then the desired shape product is put in the moulding machine and then curing takes place. Finishing of the product is carried out. The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

Sample Units	Tiny	Small	Medium	Large	Total
Moulded Products	6	22	1	2	32*
Ambala	-	3	-	-	3
Ballabgarh	4	4	-	-	8
Faridabad	2	5	1	-	9*
Gurgaon	-	8	-	2	10
Manesar	-	1	-	-	1
Sonepat	-	1	-	-	1

* One firm has not mentioned the investment level

Manpower at a glance

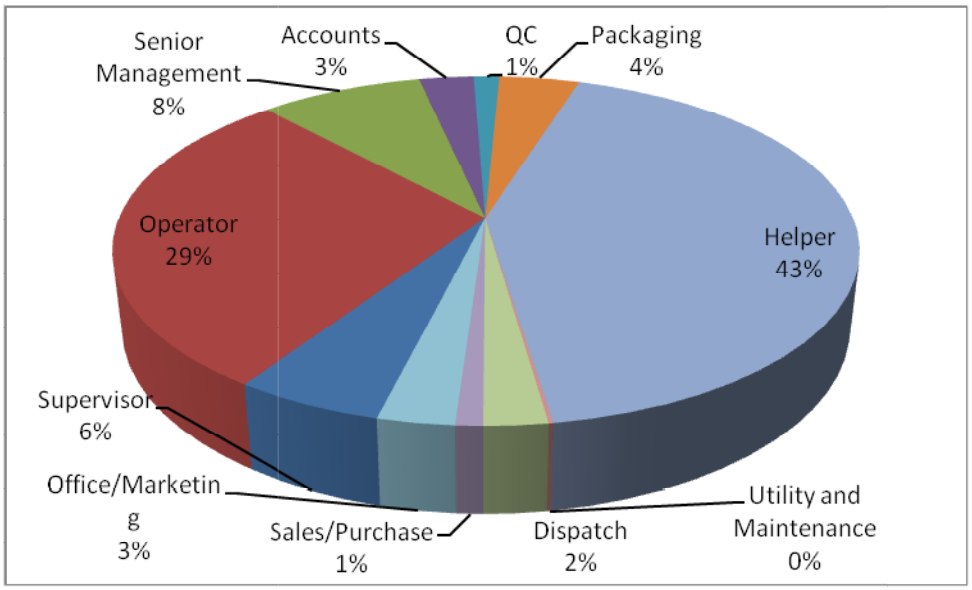


The employees are recruited on roll as well as off roll in the rubber moulded goods producing firms in the state. Two fifth of the firms hiring 100 percent on roll employees have either tiny or small scale of production. The major strategy for recruitment is referential hiring, direct interview and consultancy. Majority of the employees are engaged in the core production activity, only 16 percent of the total employees are taking up the administrative, managerial and accounting tasks. However, some of the units 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 goods producing units.

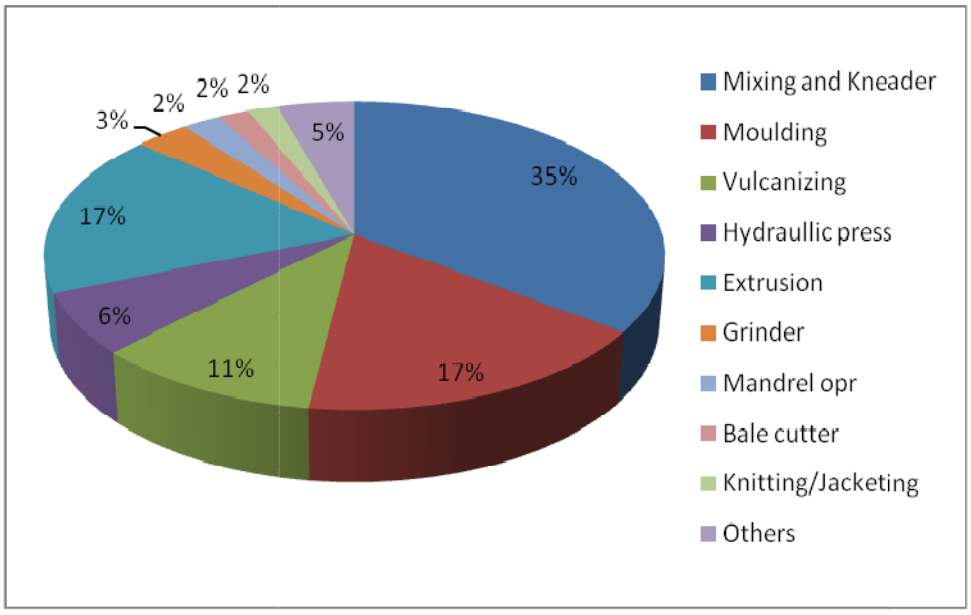
As per the classification of employees, the segment indicates mainly the requirement of helpers followed by operators. Interestingly, more than two third of the firms do not have any one recruited for quality control/assurance. Also, the role of accountants too seems to be limited as compared to the results seen in case of West Bengal. No specific role for accountants may imply that accounts are handled by proprietors themselves.

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 vulcanizing 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



Educational Qualifications (% of total employees)

Educational Qualification	Tiny	Small#	Medium^	Large*
Ph.D/Research	-	-	-	-
Engineers	-	1	-	1
Graduate	-	8	-	2
Diploma Engineers	-	1	-	1
ITI/Vocational Education	-	-	-	2
XII/X/School Education	6	27	-	10
Below Xth standard	92	57	-	84
Others (CA, CS, ICWA, MBA etc.)	2	2	-	-

#relates to 17 firms, other firms did not share educational qualifications
*relates to one firm, other firm did not respond to the educational detail
^ Firms did not share complete info on educational qualification

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
• Receive the raw rubber and the mixing agents from the helper. • Check the chemicals • Mixing the raw material and the Chemical in proper proportion as set aside by the management. • Clock the cycle time for the	• No formal technical knowledge • Work is based on experience • Don't take	•No technical knowledge of the machine at hand. •Mixing proportion	• Lack of training & certification • Unawareness towards operation • Lack of	• No formal training • No knowledge of operating

machine. • Prepare batches as per Compound card • Maintain the pressure and the temperature of the machine so that mixing occurs properly • Maintain the machine as per the guidelines of the management. • Check that the preparations are without any deformities and blending has occurred properly; as is suitable for the next process.	any precaution for their safety • Lack of operating experience and specializati on • Lack of basic technical knowledge of properties of various inputs. • Lacks capability to find faults in the product • Poor housekeep ing • Lack of interest	and sequence knowledge • Lack of training & certification • Unawareness towards operation • Lack of education & proper behavior	education & proper behavior	the machine
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.**
- **Avoid contamination of the compound.**

Managerial skills:

- **Guiding the helpers for routine work**

Soft Skills:

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

2. Kneader Operator

Kneader Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Properly operate the Kneader machine to mix the raw materials • Mixing the chemicals, synthetic and natural rubber in proper proportion • Chemicals are mixed in proper proportions as stated by the management • Keep machine clean • Guide the helper • Prepare batches as per		• No technical knowledge of the machine at hand. • Mixing proportion and sequence knowledge	• Lack of training & certification • Unawareness towards operation • Lack of education & proper behavior	Lack of technical knowledge of various chemicals and rubbers • Lack of knowledge to operate the

Compound card • 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.				machine • Lacks capability to find faults in the product

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.
- Avoid contamination of the compound.

Managerial skills:

- Guiding the helpers for routine work

Soft Skills:

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

3. Moulding Operator

Moulding Operator	Skill Gap			
• Operate the machine properly.	Tiny	Small	Medium	Large
	• No formal	• Training		• Lack of

• Checking that the moulds are properly fixed • Maintaining the temperature of the machine which has been set by the supervisor. • Maintain the machine. • Take care of safety while working on the process as per org. guidelines.(as the temperature is very high) • Help in maintenance of the machine with the management. • Report to the in-charge/supervisor in case of trouble	technical training •Lacks tyre specialization and experience to perform operation	certification and recertification • Limited knowledge of the machine functioning •All the knowledge is gained through the shop floor experience •Lack of rubber specialization & experience to perform operation		knowledge for setting the parameters of machine • Lack of safety consideration • Equipment maintenance is done after long time. • Communication gap between workers.

<u>Skill Gap Intensity: Medium to Low</u>

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Handling the moulds as prescribed
- 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

4. Curing Operator

Curing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Maintenance of the machine. • Control of temperature when the product is inside it. • Keeping track of curing time for each product.	• No knowledge of curing temperature , pressure and timing • Lack of training • Lack of interest	• All the knowledge gained through experience • Lack of training & certification. • Unawareness towards operation • Lack of education & proper behavior	• Lack of training & certification. • Unawareness towards operation • Lack of education & proper behavior	• Lack of proper technical knowledge

Skill Gap Intensity: Low to Medium

Skills Required

Technical Skills:

- Thorough knowledge of curing process and press and it's working.
- Maintain the appropriate temperature and pressure at all times.

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			
	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.		• Lack of experience and technical knowledge	• Lack of experience in rubber sector • Lack of skill to make new patents & improve ongoing patents. • Lack of equipment 's knowledge	• No skill gap manifested

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

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 product. • Get involved in quality control	• No formal training • Lack of long experience • Lack of specialization • unaware of new technology • behavior with production workers	• No formal technical training • Workforce management ability • Knowledge of machines • Relationship with workforce		• Lack of latest technology used in rubber sector • Lack of long experience • Lack of specialization experience

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

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

Managerial Skills:

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

Soft Skills

- Effective communication skill

7. 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
	• Lack of updated knowledge of accounts and rules.	• No skill gap manifested		• No skill gap manifested

Skill Gap Intensity: Medium to High

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.

Soft Skills

- Effective communication skill

8. Production Manager

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

• Responsible for running of unit and production • Planning for production schedule • Understand the end user requirement and design processes to incorporate the customer needs in the final product. • Get involved in quality control	• No formal training	• No formal technical training • Lack of experience and dedication • Experience in specialize sector knowledge	• Lack of experience in specialize sector, • Guiding ability • Lack of managerial skills.	• No skill gap manifested

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

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

Managerial Skills:

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

Soft Skills

- Effective communication skill

9. Helper

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

different process (i.e. mixing to press to cutting to packing to storing) • Clean the shop floor as when guided by the supervisor. • Loading and unloading the rubber into the mixing mill • Powdering the sheet after the curing. • Finishing and packing the product in respective packing material. • Do all work as directed by the supervisor	• Lack of specialize sector experience • General awareness while working • Lack of education and communication skill • Negligence in process. • Slow and poor work performance • Lacks punctuality • High wastage	•Lacks technical knowledge	• Lack of training & certification. • Unawareness towards operation • Lack of education & proper behavior	• Lack of education & specialize experience • Lack of proper experience • Training & certification • Lack of technical knowledge • Lack of understanding about machine operation

<u>Skill Gap Intensity: Low to Medium</u>

Skills Required

Technical Skills:

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

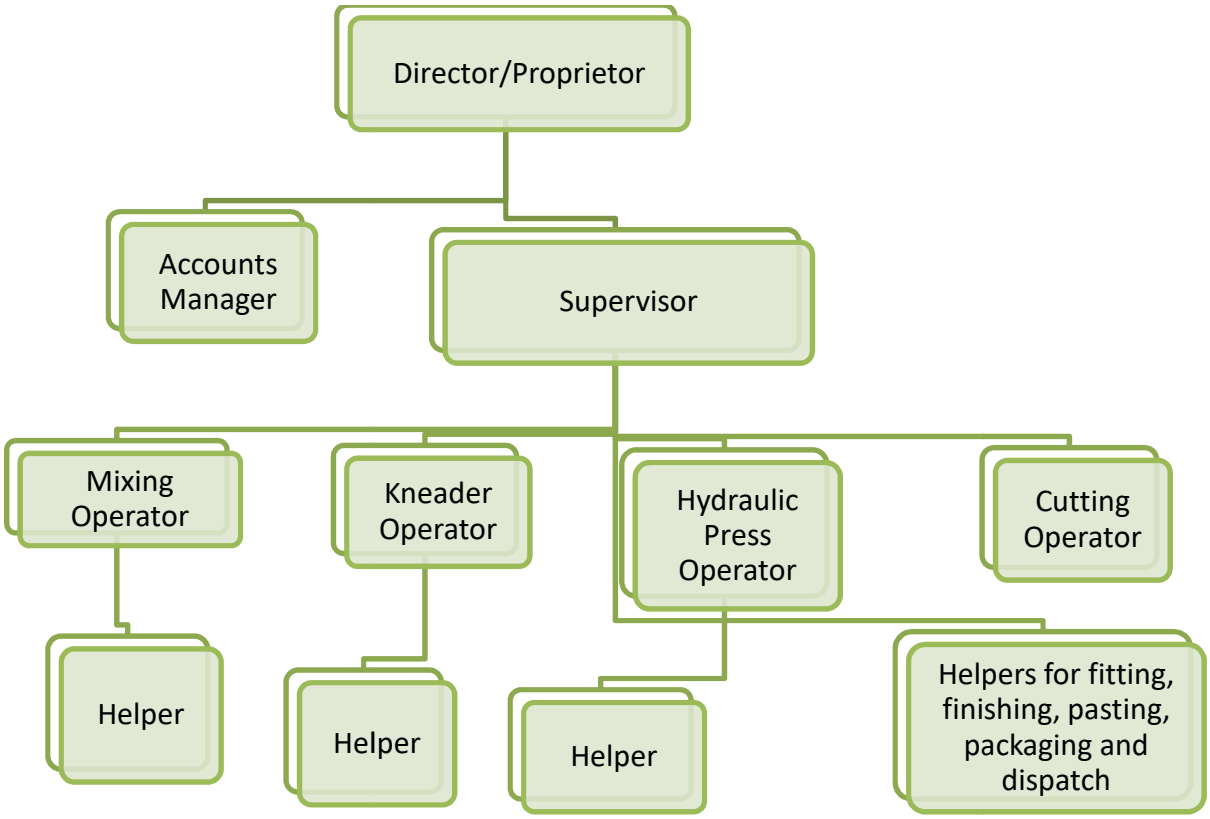
Soft Skills:

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

Footwear

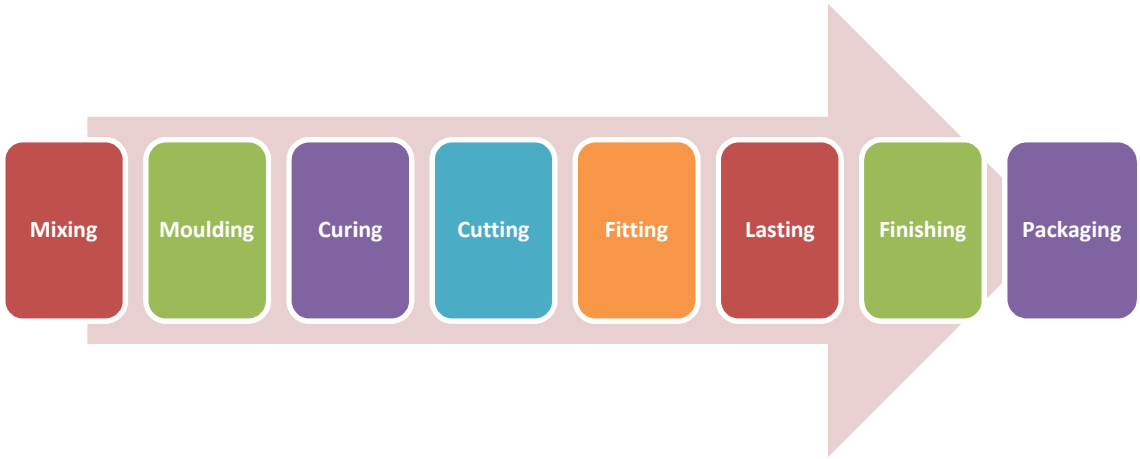
The survey findings reveal that there is a major skill gap exists on front of technical knowledge of employees in the production of rubber products related to footwear segment (hawai chappal, sandals, shoes). Half of the surveyed firms are interested in expanding the same business line and move on to automated process.

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. Moulds or cavities are used to get the required shape of the end products. Hydraulic press is used for moulding the rubber into shoes Hydraulic press requires setting the temperature, pressure and timing for the mould. Then, cutting of extra parts is done which are not required. Preparation of sole and attachment of upper to the sole is carried out. Then, helper attaches and shapes heel bottom to final form. The finished products are then packed and made ready to deliver. Accessories are added which

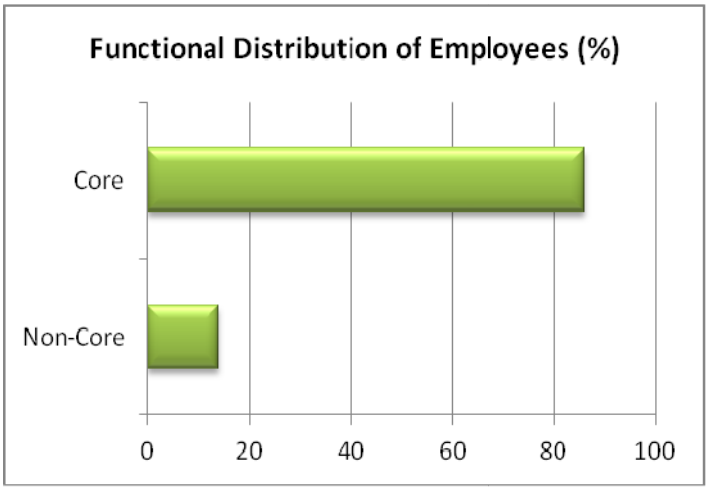


makes shoes look better.

Sample Units	Tiny	Small	Medium	Large	Total
Footwear	-	2	3	1	6
Faridabad	-	1	-	-	1
Bahadurgarh	-	1	3	1	5

Manpower at a glance

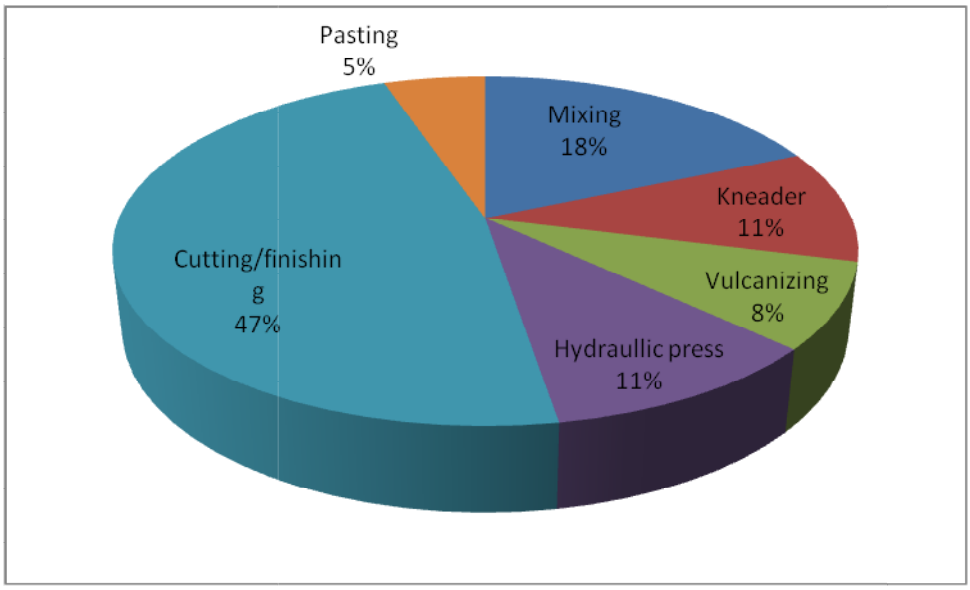
In Haryana, the surveyed units producing footwear shared that there have recruited on roll as well as off roll employees. Majority of the employees are engaged in the core production activity, only 14 percent of the total employees are taking up the administrative, accounting and managerial tasks. In these units



covered in the sample, the employees sourcing strategy is through employee's reference and direct interview. Moreover, most of the respondent firms mentioned that they experience very low rate of attrition that is less than 5 percent in their manufacturing units. Salary payment as per government rule and labour law, increment, bonus and facilities are among the strategy followed by the firms to retain the workers with them for longer duration. Half of the respondent firms feel that there is a scope for transfer of roles in the activities carried out by the workers in their units; while others do not mentioned any such role transfer in their manufacturing units for workers.

The respondent firms have smaller or larger proportion of the workforce coming from outside Haryana. The main states from where workers have come to work in Haryana based footwear producing units are Uttar Pradesh and Bihar. Regarding the job role distribution, the sample units did not provide exact allocation among various roles. However, at the operator level the information shared by five footwear units depicts that the requirement for cutting/finishing operators is at the highest followed by the mixing operators.

Operator Level Job Role Distribution in Sample Units



Educational Qualifications (% of total employees)

Educational Qualification	Small	Medium	Large
Ph.D/Research	-	-	-
Engineers	-	1	-
Graduate	7	10	-

Diploma Engineers	-	-	-
ITI/Vocational Education	-	-	-
XII/X/School Education	22	22	-
Below Xth standard	70	66	-
Others (CA, CS, ICWA, MBA etc.)	1	1	-

Training

Training department is not in existence for any of the firms surveyed in the footwear segment. The responding firms highlighted that neither there is any separate department allocated for training nor they have any relation with any training institutes. Firms located in Bahadurgarh have not tried to contact any training institute whereas surveyed firm located in Faridabad maintain that training is costly.

Main Roles and Skill Gap

1. **Mixing Operator**

Mixing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Guiding the helpers in unloading the material into the mixing machine. • Work on mixing machine and mixing mill. • Add additives and chemical in sequence and manner guided by the supervisor. • Switch on the machine and the clock the cycle which has been set by the manager/supervisor. • Operate Mixing machine properly • Maintain the machine		• No formal technical training	• No formal technical training • Lack of basic technical knowledge of properties of various inputs. • Works based on	

parameters i.e, temperature & pressure • Cleaning the machine after each process. • Checking the safety while working on the machine. • Use safety measures to avoid injury			experience. • Lacks capability to find faults in the product	

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.
- Ability to take decision.
- Ability to communicate with the plant in-charge in case of any faults or technical issues

Soft Skills:

- Basic metric system to identify the numbers on the screws needed to be tightened.

2. Kneader Operator

Kneader Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Operating Kneader machine to mix the raw materials • Mixing the chemicals and natural rubber in proper proportion • Chemicals are mixed in proper proportions as stated by the		• Lack of basic technical knowledge of	• No formal technical training • Lack of basic	

management • Keep machine clean and proper • Guide the helper • Use safety measures to avoid injury		properties of various inputs. • Lack of knowledge to operate machine	technical knowledge of properties of various inputs. • Works based on experience. • Lacks capability to find faults in the product	

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.
- Ability to take decision.
- Ability to communicate with the plant in-charge in case of any faults or technical issues

Soft Skills:

- Basic metric system to identify the numbers on the screws needed to be tightened.

3. **Hydraulic Press Operator**

Hydraulic Press Operator	Skill Gap			
• Operate the hydraulic press machine skillfully. • Maintaining the temperature of the machine which has been set by the supervisor. • Maintain the machine. • Take care of safety while working on the process as per org. guidelines.	Tiny	Small	Medium	Large
		• Lack of technical training.	• No use of any safety equipments. • Wastage is very much. • One worker is doing many works. • Equipment maintenance is done after long time • Communication gap between workers • Lack of technical knowledge	

Skills Required

Technical Skills:

- Good knowledge of machine and its operation.
- Change the moulds with the guidance of the supervisor
- Molding is carried out at high temperature so safely handling is necessary with a necessary safety equipments

Managerial skill:

- **Good communication skills for guiding helpers and coordinating with other operators.**
- **Ability to get work done by helpers.**
- **Motivate co-workers**
- **Efficient and always tries to minimize the waste**

Soft Skills:

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

4. **Cutting Operator**

Cutting Operator	**Skill Gap**			
	Tiny	**Small**	**Medium**	**Large**
• Performing the work of cutting the cured sheet with dye by hydraulic cutting machine • Cut the flash skillfully • Work with speed and accuracy • Must have correct understanding of dimensions • Very accurate in his work.		• No proper knowledge of cutting sheet • Lack of attention • Lack of technical training • Lack of knowledge to operate the machine	• No proper knowledge of cutting sheet • Lack of attention • Lack of technical training • Lack of knowledge to operate the machine	

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- **Good knowledge of cutting tools/machine and its operation.**

- Minimize waste and increase productivity

Managerial skill:

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

Soft Skills:

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

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

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Shift the material from the different process (i.e. kneading to mixing to press to cutting to to packing to storing) • Clean the shop floor as when guided by the supervisor. • Loading and unloading the rubber into the mixing mill • Movement of material, semi finished and finished product • Packing the footwear in respective packing material. • Do all work as directed by the supervisor		• Lacks technical knowledge • No Formal training	• Lacks proper experience • High wastage • Lack technical training • No knowledge of machines	

Intensity of Skill Gap: Low

Skills Required

Technical Skills:

- Proper finishing and packaging

- Do all the work as directed
- Remove the moulds from the rubber in line with the guidance of the supervisor
- Ability to do work as guided by the operators and identify the products

Soft Skills:

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

7. Supervisor

Supervisor	Skill Gap			
	Tiny	Small	Medium	Large
• Manage the shop floor activities. • Responsible for running of unit and production • Planning for production schedule • Understand the end user requirement and design processes to incorporate the customer needs in the final product. • Get involved in quality control		• No formal technical training • Lack of latest technology used in rubber sector • Work based on experience	• No formal technical training • Lack of latest technology used in rubber sector	

Intensity of Skill Gap: Medium to High

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 skill

8. Accountant

Accountant	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. • Keep accounting record updated. • Taking approval for expenses. • Prepare account statement and share with director			• No skill gap manifested	

Skills Required

Technical Skills:

- Knowledge of various documents and their importance.
- Mathematical and accounting Skills.

- **Ability to communicate in English language,**
- **Good IQ level.**
- **Knowledge of Tally and internet savvy**

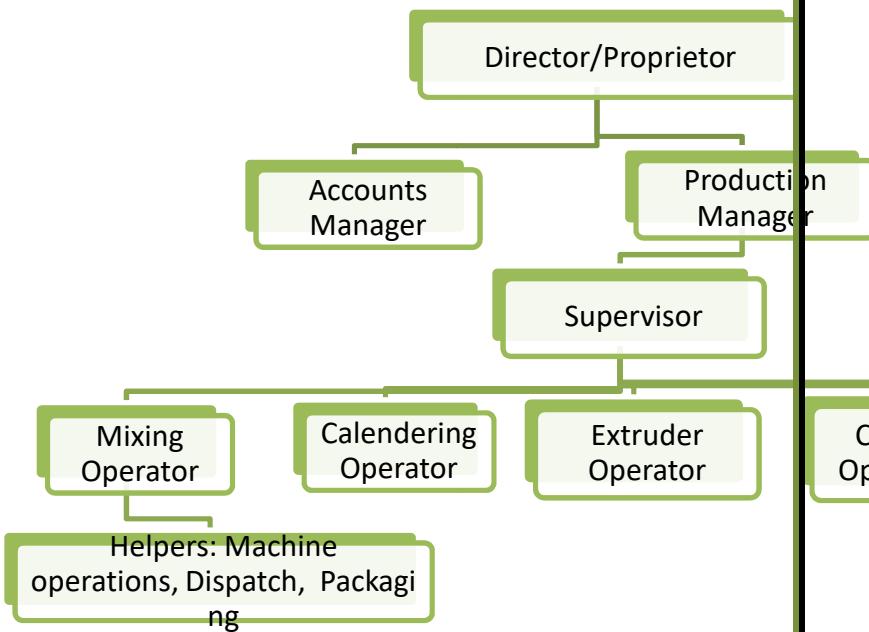
Soft Skills

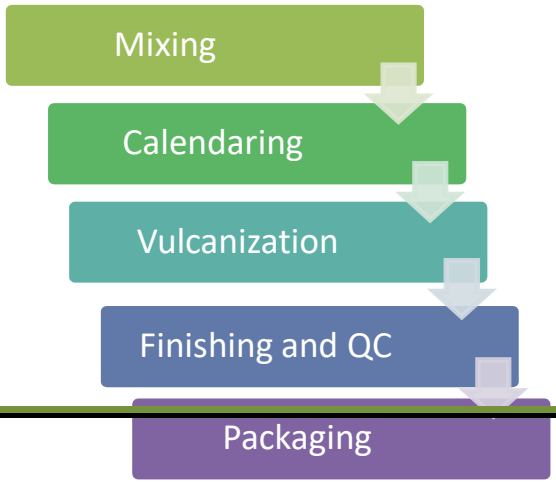
- **Effective communication skill**
- **Good presentation skills**

Rubber Belt

All the respondent firms producing rubber belts (V and conveyor belts) mentioned that they do not face high attrition (less than 5 percent) and they recruit their employees from within as well as outside the state. Majorly the hiring from outside states is from Uttar Pradesh and Bihar. The survey findings reveal that half of the firms are running the business for more than 50 years and follow internal references and direct interview as the main strategy for recruitment.

Organization Structure





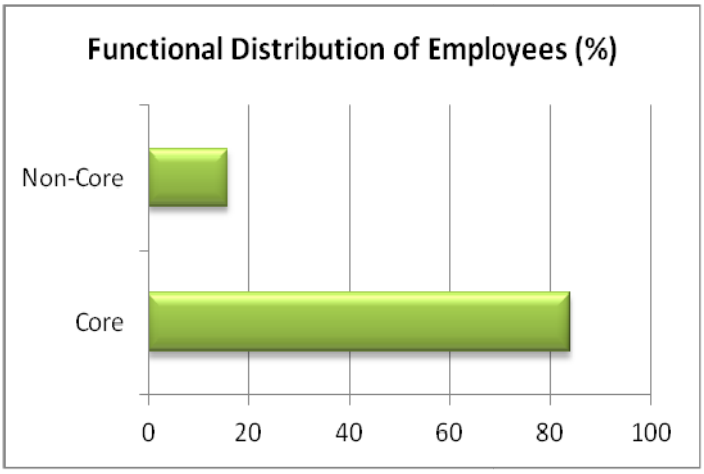
Process Outline:

Compound is obtained by mixing the raw materials in a mixing and milling machine. 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	-	5	-	1	6
Sonepat	-	4	-	-	4
Rai	-	-	-	1	1
Faridabad	-	1	-	-	1

Manpower at a glance



All the employees are recruited on roll in the select rubber belt producing firms in the state, except for the one firm which has not shared the information regarding this aspect of its employee's recruitment. Majority of the employees are engaged in the core production activity, only 16 percent of the total employees are taking up the administrative, accounting and managerial tasks. In the units covered in the sample, half of them have not shared their employee classification completely thus not helping in identifying the proportion of different level of employees in this segment. All the firms mentioned that helpers are easily available but skilled manpower is difficult to get. The transfer of roles is frequently noticed in these firms as the workers handle multiple tasks. Except one firm, all others follow standard operating procedures in this segment of the industry and they revise it annually.

There is no single employee in the rubber belt producing firms who have higher qualification than graduation. No one in this segment has opted for vocational or specialized education.

Training

Training department is present in five firms (out of six) surveyed in the rubber belts segment but there is no relation with any training institute of these firms. All the responding firms highlighted that there is a need to train manpower in all the segments of production.

Educational Qualifications (% of total employees)

Educational Qualification	Small*	Large
Ph.D/Research	-	-
Engineers	-	-
Graduate	9	21
Diploma Engineers	-	-
ITI/Vocational Education	-	-
XII/X/School Education	31	37
Below Xth standard	60	32
Others (CA, CS, ICWA, MBA etc.)	-	-

* relates to only one firm sharing the complete information related to educational qualifications

Main Roles and Skill Gap

1. **Mixing Operator**

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

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

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

Skills Required

Technical Skills:

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

Managerial skills:

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

Soft Skills:

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

2. Calendaring Operator

Calendaring Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Maintenance of the machine. • Running the calendars • 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		• No proper training on the machine • Lack of technical training • No technical knowledge of machines • Lack of interest		• Lack of technical training • Sometimes no proper attention

Skills Required

Technical Skills:

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

Managerial skill:

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

Soft Skills:

- Effective communication skill

- Quick learner
- Basic arithmatic

3. Press Operator

Press Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Proper Maintenance of the press. • In case of any problems should immediately report to the proprietor/supervisor • Maintain the temperature as guided by the proprietor/supervisor. • Take care of safety issues		No formal technical training		• No more knowledge of setting parameters like temperature, curing time, pressure etc

Skills Required

Technical Skills:

- Knowledge of setting the parameter like temperature, curing time, pressure, proper pre-tensioning, post- tensioning for producing error free straight
- 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. Winding Operator

Winding Operator	Skill Gap

• Proper Maintenance of the machine. • In case of any problems should immediately report to the proprietor/supervisor • Operating the winding machine to wind the polyester chord for making belt strip • Take care of safety issues	Tiny	Small	Medium	Large
		• Lack of technical training • Sometimes no proper attention		Lack of technical training

Skills Required

Technical Skills:

- Thorough knowledge of working of winding machine.
- Knowledge of various controls
- Knowledge of producing belt strip of polyester chord on winding machine

Soft Skills:

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

5. Supervisor

Supervisor	Skill Gap			
• 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	Tiny	Small	Medium	Large
		• Lack of latest technology used in rubber sector • Lack of		No skill gap manifested

customer needs in the final product. • Get involved in quality control • Resource Management • Give Technical Instruction – machine & job • Safety issues		formal training		

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

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

Managerial Skills:

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

Soft Skills

- Effective communication skill

6. Helper

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

• Finishing and packing the product in respective packing material. • Do all work as directed by the supervisor				

Skill Gap Intensity: Low to Medium

Skills Required

Technical Skills:

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

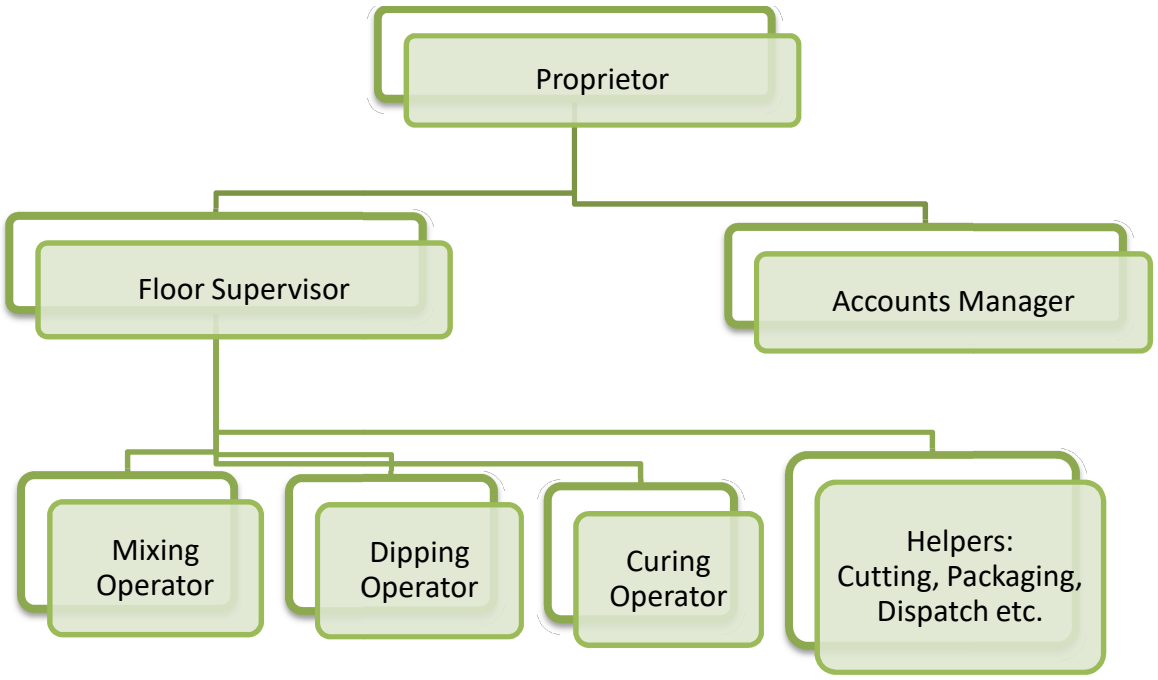
Soft Skills:

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

Surgical, Pharma & Scientific Products

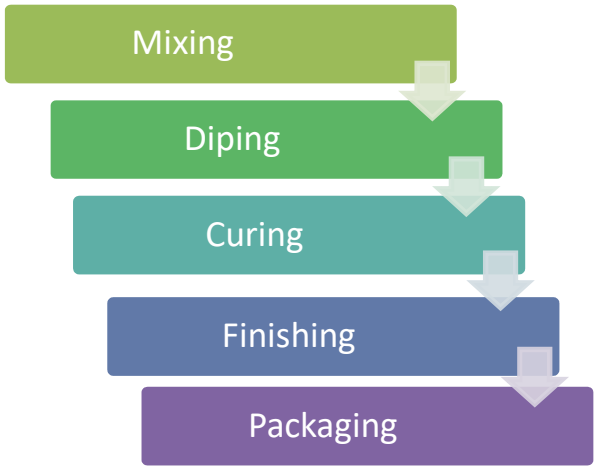
System upgradation for moving on to full automation is the main change envisioned by the four firms out of the total of five firms surveyed involved in the rubber products production related to surgical and pharmaceutical segment. This particular fact points towards the requirement of skilled labour well versed with the automated processes that is skilled manpower as shared by the respondent firms. It has been highlighted by the firms that presently they do not face any problem in finding helpers but there is shortage of skilled manpower as per the requirement in various roles in their production unit.

Organization Structure



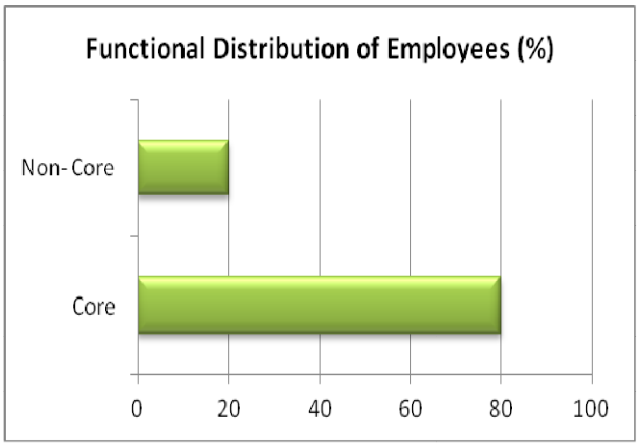
Sample Units	Tiny	Small	Medium	Large	Total
Surgical and Pharma Products	2	2	-	1	5
Gurgaon	2	-	-	-	2
Sonepat	-	2	-	-	2
Bahadurgarh	-	-	-	1	1

Process Outline:



The process of dipped products preparation is given in the procedural diagram. The raw material is mixed to particular compound and then converted to liquid form. This is done with help of a ball machine and a simple mechanical mixer. Then the ceramic mould is dipped in viscous latex and additives mixture, after getting desired thickness, it goes for cooling. Curing s takes place and finally finishing and packaging of product is takes place according to size of the product.

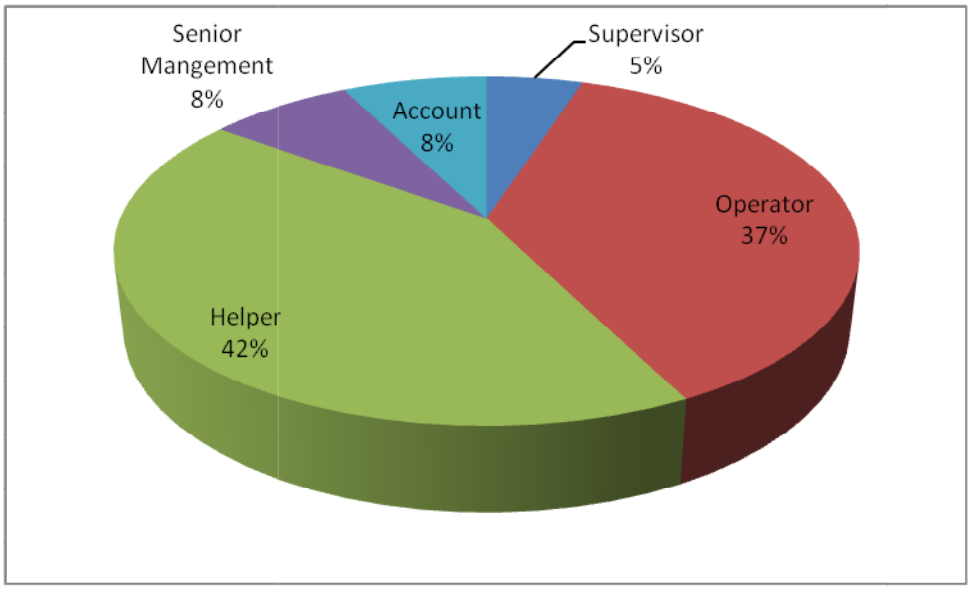
Manpower at a glance



The employees recruited in the surgical and pharma products manufacturing firms are mainly recruited on roll basis. On an average, 80 percent of the employees are engaged in the core production activity, rest of the employees is taking up the administrative, accounting and managerial tasks. The main source of hiring employees is through reference and direct interview/interview by the HR department/by consultancy firm. In the units covered in the sample, all of them have an expansion plan to increase the production either by setting up a new unit or expanding the existing one. Such a progressive view clearly indicates more job opportunities in this segment in the state. However, attrition rate is less than 5 percent in these firms and the transfer of roles is frequently noticed in these firms as the workers handle multiple tasks. No standard operating procedures are followed by four out of five firms surveyed in this segment of the industry.

The job role distribution in the sample units presented below relates to the tiny and small scale units covered in the survey as the large scale firm did not share the exact classification of its employees. The results shows that the helper and operator level together constitute almost 80 percent of total employees. Interestingly no one is recruited specifically for quality control in all the respondent firms in this segment in the state.

Job Role Distribution in Sample Units



Educational Qualifications (% of total employees)

Educational Qualification	Tiny*	Small	Large^
Ph.D/Research	-	-	-
Engineers	-	-	-
Graduate	17	14	-
Diploma Engineers	-	-	-
ITI/Vocational Education	-	-	-
XII/X/School Education	-	34	-
Below Xth standard	83	42	-
Others (CA, CS, ICWA, MBA etc.)	-	-	-

*Only one firm shared the complete information
^ Firm did not share the details related to educational qualifications

Training

Training department is not in existence for any of the firms surveyed in the surgical, pharma and scientific products manufacturing units. Moreover, there is no relation with any training institute of these firms. The responding firms held that there is a need to provide training to the employees. Rhe employees lack technical skills in operations.

Main Roles and Skill Gap

1. **Mixing Operator**

Mixing Operator	Skill Gap			
	Tiny	Small	Medium	Large
a. Operate the machine to mix the raw materials b. Mixing the chemicals and latex in proper proportion c. Chemicals are mixed in proper proportions as stated by the management d. Keep machine clean e. Guide the helper f. Follow the standard operating procedures of each operations with respect to latex compounding g. Prepare batch sizes as per the daily productions needs h. Allocate Batch / Lot numbers of the compounding done for traceability. i. Proper control utilities, viz, water, electricity, compressed air, weighing scale etc.	• Lack of knowledge of measuring instruments • Lack of technical knowledge of various chemicals and rubbers	• No formal technical training • Lack of technical knowledge of various chemicals and rubbers • Lack of knowledge to operate the machine		• Lack of technical knowledge of various chemicals and latex • No formal training • No knowledge of operating the machine

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

- Knowledge of various latex applications and its compounding
- Knowledge of proper compound mixing & preparation of dispersion and solutions
- Knowledge of quality certified products

Managerial skills:

- **Do as directed by the quality analyst and floor supervisor**
- **Good understanding skills**

Soft Skills:

- **Good communication skills**

2. Dipping Operator

Dipping Operator	**Skill Gap**			
	Tiny	**Small**	**Medium**	**Large**
• Handle the mold carefully. • Checking that the moulds are properly dipped • Maintaining the temperature of the mold which has been set by the supervisor. • Maintain the latex level. • Take care of safety while working on the process as per org. guidelines.(as the temperature is very high) • Proper cleaning of mould	• May not have expertise on other molding machines because of operating the manual molds	• Lack of attention during dipping of moulds • No formal training		• No skill gap manifested

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

- **Change the moulds with the guidance of the supervisor**
- **Maintain the temperature of the latex and the curing as per guidance of the supervisor.**
- **Remove the gloves from the moulds in proper manner so that minimal damage occurs**
- **Proper knowledge of auto dipping**
- **Handling equipment properly**

Managerial skill:

- **Guiding the helpers in the respective works (dipping, curing)**

Soft Skills:

- **Effective communication skill**
- **Good grasping skills to understand the dipping work.**
- **Knowledge of metric sytem (Time and temperature) to monitor the dip duration and the curing time.**

3. Curing Operator

Curing Operator	**Skill Gap**			
	Tiny	**Small**	**Medium**	**Large**
• **Proper Maintenance of the machine.** • **Operating the oven for curing the goods after de-moulding** • **Work for long hour at high temperature** • **In case of any problems should immediately report to the proprietor/supervisor** • **Maintain the temperature as guided by the proprietor/supervisor.** • **Take care of safety issues**		• **Lack of proper technical training**		

Skills Required

Technical Skills:

- **Knowledge of setting the parameter like temperature, curing time, pressure, proper pre-tensioning, post- tensioning for producing error free straight**
- **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. Helper

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Loading and unloading the solution into the mixing mill. • Performing the work of removing the flashes • Performing polishing work • Packing the product in respective packing material. • Do all work as directed by the supervisor	• No proper attention during cutting • Lack of technical knowledge • No knowledge of machines	•No formal training •Lack of interest •Lack of technical knowledge		• No knowledge of machines • Lack of Technical knowledge • No formal training

Intensity of Skill Gap: Low

Skills Required

Technical Skills:

- Perform all the work as directed
- Remove the impurity from the rubber in line with the guidance of the supervisor
- Ability to identify products
- Knowledge of metric system

Soft Skills:

- Basic communication skills

5. Supervisor

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

Intensity of Skill Gap: High

Skills Required

Technical Skills:

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

Managerial Skills:

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

Soft Skills

- Effective communication skill

SKILL GAP AND HUMAN RESOURCE REQUIREMENT

Firms responding 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 tiny, small, medium or large scale organization. An important area of concern that some of the firms reported relate to the awareness and disciplinary skills which is more related to the personality trait than being specific to a particular industry. As the employees mainly gain knowledge on the job which has been highlighted throughout in the survey responses, the weakness on the part of specialization seems to be another area of concern for fewer firms.

Table 4.1: Technical Skill Gap: Product Category Wise

Category	Firm's response (%)
Camel back	3.2
Footwear	6.3
Belts and hoses	11.1
Latex foam	1.6
Dipped goods	7.9
Others	69.8

Skill Gap Intensity

The intensity of skill gap is listed in four categories by the firms covered in the sample of the study i.e. Low, Medium, High and No skill Gap manifested. However, the analysis of the responses is listed under following categories based on the given 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
No skill gap manifested	80 percent or more

The skill gap intensity for operator's role for various activities has been rated medium by a large number of firms. However, there is only one supervisory role mentioned by the organization at the senior level but not specific to different job roles. No skill gaps have been reported by the firms for the people engaged in performing quality control activities.

SKILL GAP INTENSITY

Job Role	Low	Low to Medium	Medium	Medium to High	High	No skill gap manifested
Production Supervisor						
Mixing Operator						
Kneader Operator						
Curing Operator						
Calendaring Operator						
Boiler Operator						
Moulding Operator						
Extruder Operator						
Latex Compounder						
Hydraulic Press Operator						
Dipping Operator						
Ball Mill Operator						
Grinding Operator						
Winding Operator						
Mandrelling Operator						
Trimming/Cutting						
Finishing operator						
Helper						
Quality Control						
Accountant						

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 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 on technical and training aspect, not on their routine jobs of housekeeping, loading/unloading, movement of material etc.

The industry feedback on expected profile of major human resource for major job roles and analysis of their availability is presented below:

Employee profile	Industry feedback on expected qualification and profile	Analysis
Helper	Needs to know the basic operation of machines in use and trained on behavioral and disciplinary skills.	There is adequate availability of helpers in all the select states however they need to complete at least basis education to develop skills to move on career path.
Operator	Needs to know the semi automatic /automatic machine operation and maintenance. Training on machine exposure for about 6-12 months will be ideal.	There is a shortfall of skilled operators across all segments in rubber industry reported by the firms in all select states. supervisors and operators. Though the point could be the helpers can move to the operator role, sufficient re-skilling and upskilling needs to be done to improve the performance quality.
Supervisor	Needs to hold technical certification and remain	The requirement for supervisory role has not

	updated about latest technology. Able to manage the shop floor	been reported by the firms implying that director himself performs this role or the operators are trained to perform supervisory role.
QC	Needs to have chemistry/rubber technology/polymer technology background	The requirement for QC personnel has been reported mainly by medium and large scale firms.

Human Resource Requirement in Rubber Industry

An estimation based on the sample survey has been attempted to highlight the human resource requirement in the rubber industry in the state in the current scenario. Moreover, a five year forecast for the human resource requirement in next five years is also presented below to indicate the future trend in the rubber industry in the northern state.

Table 4.2: Current Status and Projections

Product Category	2013-14	2018-19	Change	Change%
Tyres and Tubes	960	1247	287	29.9
Camel back	450	538	88	19.6
Footwear	12996	12999	3	0.02
Belts and hoses	2580	2594	14	0.5
Latex foam	636	639	3	0.5
Dipped goods	1452	1455	3	0.2
Others	16044	21997	5953	37.1
Total	**35118**	**41469**	**6351**	**18.1**

It is estimated that in the coming five years, we may witness an overall 18 percent increase in the employment in the rubber industry in the state. Among the various categories, the highest demand would be emerging for operators. Skilled operators would find greater opportunities knocking at their door in the manufacturing segment. The next level for which the organizations would look for the employees is for helpers. The requirement for rubber technologist is an emerging area for the industry as a whole across the different segments.

Table 4.3: Requirement for Key Job Roles

Job Role	% of human resource requirement	Human Resource Requirement (No.)
Supervisor	4	254
Operator	45	2858
• *Mixing/Kneader*	18	1143
• *Curing*	9	572
• *Calendaring*	7	445
• *Cutting*	5	318
• *Extruder*	6	381
Helper	27	1715
Packaging/Dispatch	8	508
QC	5	318
Office/Marketing	7	445
Technologist	4	254

The projections are 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.