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TECHNOLOGY**

**IMPACT OF WORKING CONDITIONS ON LABOUR PRODUCTIVITY IN  
MAUFACTURING INDUSTRY AND TO IMPROVE IT**

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**ABSTRACT**

The goal of this study is to investigate the impact of working conditions on labour productivity and to improve it. There is no standard definition of productivity. This study provides a guideline for necessary steps requires improving labour productivity. Since people are the most important resource and greatest expense of any organization. However, about 85% of productivity problems reside in the work environment of organizations. The aim of study is to analyze the effect of working conditions on employee's productivity in manufacturing company. Investigation revealed that factors in both the external and internal work environment are responsible for the enhancement of labors productivity I select an industry and the design questionnaire the analysis made in various literatures reviews. Questionnaire was used to collect data. A total 70 questionnaire were distributed among respondents 50 usable questionnaires were returned. Response rate is 71%. Analyze this data through SPSS software. Most of the employees are not satisfied to his job and noise level was high which can be affect the workers performance. Poor working conditions can also pose tremendous burdens and contradictions of purpose. Issues like lack motivation, less salary and consequent strike actions, work-overload, job burnout, family problems, etc can all place serious pressures and strain on the worker. This may resultantly constitute stress on employee

**KEYWORDS:** working condition, job satisfaction, job security, motivation, Stress, noise.

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**INTRODUCTION**

There are many factors that influence the productivity in manufacturing industry. Labour productivity is one of the most important factors that affect the physical progress of any construction project. labourers are responsible to operate a variety of equipment. To perform their jobs effectively, labour must be familiar with the duties of other craft workers and with the materials, machinery, and tools, they use.

Construction labour productivity is influenced by various factors whose impact can be quantified in productivity models. These models play an important role in estimating cost, in planning and scheduling

Achieving better labor productivity requires detailed studies of the actual labor cost. Various labors have different variables affecting their productivity levels. In every manufacturing company productivity, cost, quality, and time have been very important. Better productivity can be achieved if project management includes the skills of education and training, personal health, the work method, motivational factors, the type of tools, machines, required tools and equipment and personal skills, materials, the work-load to be executed, , work location, work quality, the type of work to be done, and supervisory personnel

In today's era, one of the biggest concern for any organization is to improve overall productivity, representing the efficient and effective conversion of resources into marketable finish products and determining business profitability. Consequently, considerable effort has been directed to understand the productivity concept with different approaches taken by researchers, resulting in a wide variety of productivity definitions.

**OBJECTIVES OF THE STUDY**

This study is conducted to achieve the following objectives.

- To identify the factors affecting the variation of labour productivity in the manufacturing industry.
- To assess the impact of influenced factors on the variation of labour productivity.
- To identify the main factors associated with loss of productivity in manufacturing industry.

To suggest recommendations in order to reduce variation of labour productivity in the the manufacturing industry

**VARIOUS FACTORS AFFECTING LABOUR PRODUCTIVITY**

S.N.	VARIOUS FACTORS AFFECTING LABOUR PRODUCTIVITY
1	Lack of skill and experience of the workers
2	Lack of training and resourcing
3	Labour absenteeism
4	Supervisors' absenteeism
5	Poor relations among workers
6	Lack of motivation
7	Late payment
8	Low amount of pay
9	Little or no welfare
10	Little or no financial rewards
11	Lack of place for eating and relaxation
12	Working 7 days per week without taking a holiday
13	working overtime
14	shortages of material
15	Low quality of raw material
16	Unsuitable material storage location
17	Equipment and tools shortages
18	Poor condition of equipment and tools
19	Incomplete/revise drawing
20	Inspection delay
21	Rework
22	Lack of labor safety
23	Insufficient lighting
24	High temperature
25	Humidity
26	Noise
27	job security
28	Job satisfaction
29	physical fatigue
30	Labor personal problems

By avoiding the following factors which affect the labour productivity we can improve the labour productivity.

**LITERATURE REVIEW****Review of Labor Productivity from Previous Study**

Shruti Sehgal Department of Mechanical Engineering, RGTU, Madhya Pradesh Discussed in her paper relationship between office design and productivity. According to their paper on Relationship between Work Environment And Productivity she find about 86% of productivity problems reside in the work environment of industry. Survey show that 9 out of 10 believed that a work environment affects the attitude of employees and increases their productivity. worker in different industry have different office designs. Every office has unique furniture and lighting and heating arrangements, special arrangements and different noise level. Theaim of this study is to find the impact of the office design factors on worker productivity. The study reveals that good office design has a positive effect on employees' productivity [1]

Mr. A.A. Attar<sup>1</sup>, Prof. A.K. Gupta<sup>2</sup>, Prof.D.B.Desai<sup>3</sup> Asso. Prof. & Head, Civil Engineering. Dept. Dr.J.J. Magdum College of Engineering, Jaysingpur-416101) the highly effective groups of factors are: material ,supervision, design and execution plan. furthermore, for large companies, tools and equipment factors have also more effective. While in small and medium industry, consultant factors also required special attention because it has high effect too. Research findings also show that safety and health factors has not been a concern of small, medium industry and has some effect, while in large industry are better. Practically it is difficult task to all to improve labor productivity up to 100%. But if you have properly control on above factors, productivity can be improved up to large extent [2]

Mr. Mistry Soham, Bhatt Rajiv discussed the Labour Productivity in Construction Projects. The main objective of this study is to find critical factors affecting labour productivity. He take 51 feedback from employees and analyze this feedback through Analytic hierarchy process (AHP) and Relative Importance Index (RII) technique. He find five most crucial factors in descending order from RII Technique are delay in payments, Skill Of Labour, Clarity Of Technical Specification, Shortage Of Materials, and Motivation of Labour and According to Analytic hierarchy process AHP Technique first 5 crucial factors in descending order are High/Low Temperature, Rain, High Wind, Motivation of Labour, and Physical Fatigue which affect the labour productivity [3]

Mr. k. hemanand department of mechanical engineering, PSG College of technology, coimbtore, 641004 india. He discussed in their paper improve the labour productivity by lean manufacturing concepts.

The ultimate goal of this study is to speed up the manufacturing process by increasing the productivity through proper utilization of am and machine systems. The objective of this research paper is to reduce the waste in automotive industry. The problem in current layout is identified and analyze through Simulation. Then layout is modified and compare to the current layout. The result is 11.95% improvement in productivity. [4]

Rohan Singh Faculty of Management Studies Siksha O Anusandhan University Bhubaneswar.

A company can develop and enhance the quality of the current employees by giving comprehensive training and development. Research show that investments in training workers in decision-making, problem -solving, , teamwork, and interpersonal relations result in beneficial firm level outcomes

Training also has a significant effect on employee performance. According to this thesis organization should accept training as an important means to improve employee productivity which ultimately leads to organizational productivity and effectiveness, a present demand for all organizations [5]

In this research paper mr. Syed Mubasher Hussain Naqvi<sup>1</sup>, Muhammad Asif Khan<sup>2</sup>, AftabQadir Kant<sup>3</sup>, Shabana Nawaz Khan<sup>4</sup> is identify and analyze the Causes and effects of job stress on employees' productivity in Public health sector. It was found that majority of employees' in public health sector of Muzaffarabad and Poonch divisions of AJ&K felt high level of job stress in the working environment, inappropriate reward system, no proper timing of wok, bad work environment And job stress can also affect the productivity labour productivity in any manufacturing company. [6]

Mr.A .A. Attar, Prof. A.K. Gupta, Prof.D.B.Desai

Poor productivity of construction workers is one of the causes of cost and time overruns in construction projects. As construction is a worker-intensive company, this paper focuses on labour productivity in the construction industry. It covers the construction worker productivity aspects, definitions, factors affecting it. The main outcome from the literature is that there is no standard definition of productivity. This study provides a guidelines for necessary steps required to improve construction labour productivity. The productivity of labour is particularly important especially in developing countries, where most of the building construction work is still on manual basis. This paper reports on a survey made on project managers and experienced engineers of building projects in Sangli , Kolhapur & Pune districts, where an increase in productivity is being sought. Respondents were required to rate using their experience how all factors affect productivity with respect to time, cost and quality. The survey was carried out by a questionnaire and responses. The ten most significant factors affecting labour productivity for small, medium and large companies are identified. [7]

The objective of this paper is to analyze methods of measurement of labor productivity and introduce them to real business. The object of this paper is to investigate methods of measuring performance. The subject of this paper is the

process of implementing methods to increase productivity. Methods (procedures) of the study. Pattern during the writing of this work was used by scientist's articles information about the measurement and implementation of systems productivity. Recommendations for the use of this work. Since this work was written with the use of different methods and examples, not all of them before writing the work was known to me, I want to present a certain part to improve the productivity of some companies in my country [8].

### RESEARCH METHODOLOGY

The method used in the study is shown in below Figure

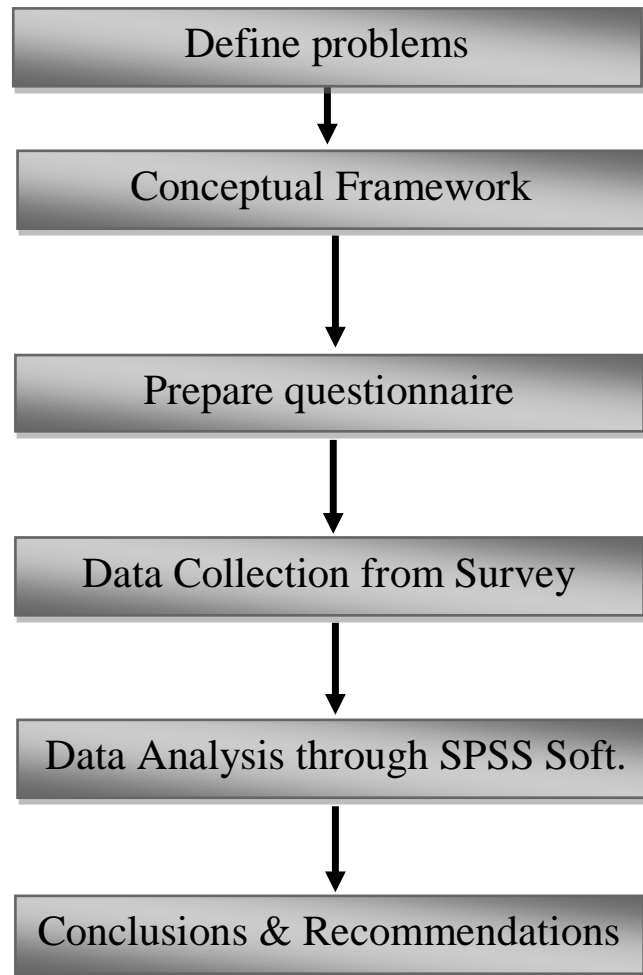


Figure-10 Flow Chart Showing Research Structure.

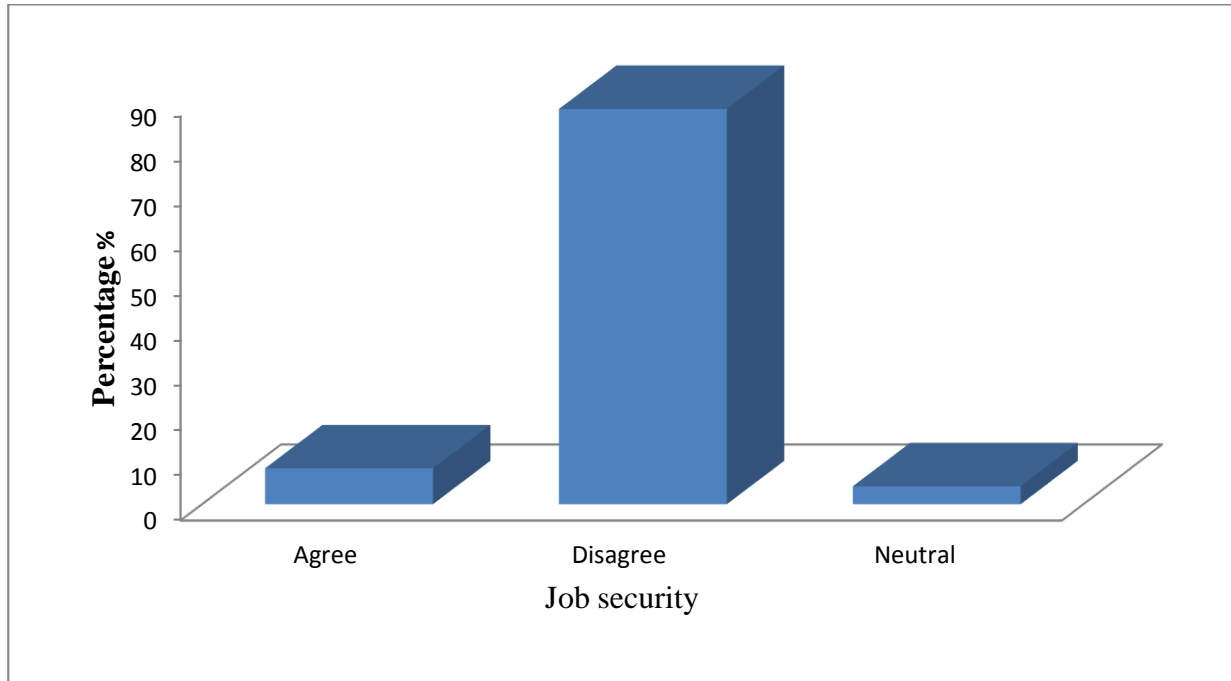
### RESULTS OF DATA ANALYSIS AND DISCUSSION

A total of 70 questionnaires were distributed among the employees of manufacturing company. 50 questionnaires were successfully filled. The response rate was therefore 71%. Collected data analyzed through SPSS software and we find that the maximum labour are not feel job security and. Stress level of employee was high due to noise of machines operations. and employees are not satisfy to his job.

In order to know the frequency and percentage of respondent profile, I use the frequency/percentage distribution. Respondent profile, also known as the demographic factor is used to explain the frequency characteristics of the respondents. In this study, I used the table to describe the data frequency/percentage. It is because, it is easier and much convenience to look at different value of variables and easy to understand. The items measured include the, age, Qualification, job position as well as the working experience job security, job satisfaction, physical fatigue etc.

**Table 6.1 Job security**

S.N.	Job security	Frequency	Percent %	Cumulative %
1	Agree	4	08.0	8
2	Disagree	44	88.0	96
3	Neutral	2	04.0	100
	total	50	100.0	



**Interpretation**

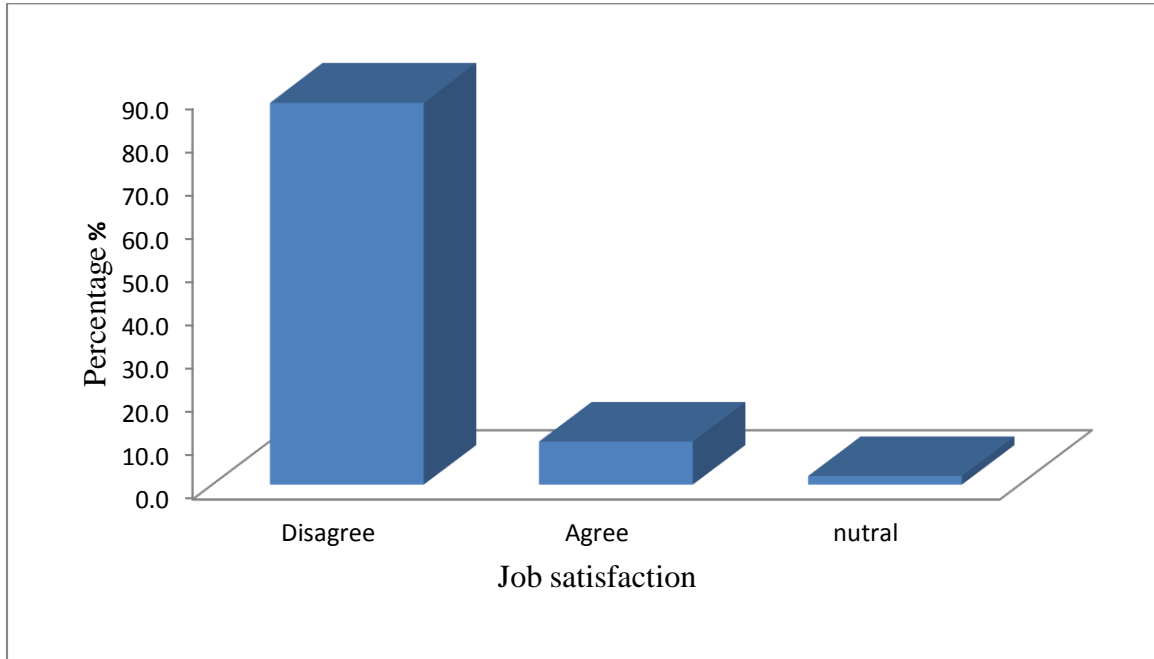
according to survey 88% employees said that they are not feel job security, 8% employees said that they are feel job security, 4% employees have neutral perception about job security.

**Conclusion**

from the above chart it can concluded maximum 88% employees are not feel job security.

**Table 6.2 Job satisfaction**

S.N.	Job satisfaction	Frequency	Percent %	Cumulative %
1	Agree	5	10.0	10
2	Disagree	44	88.0	98
3	Neutral	1	02.0	100
	total	50	100.0	



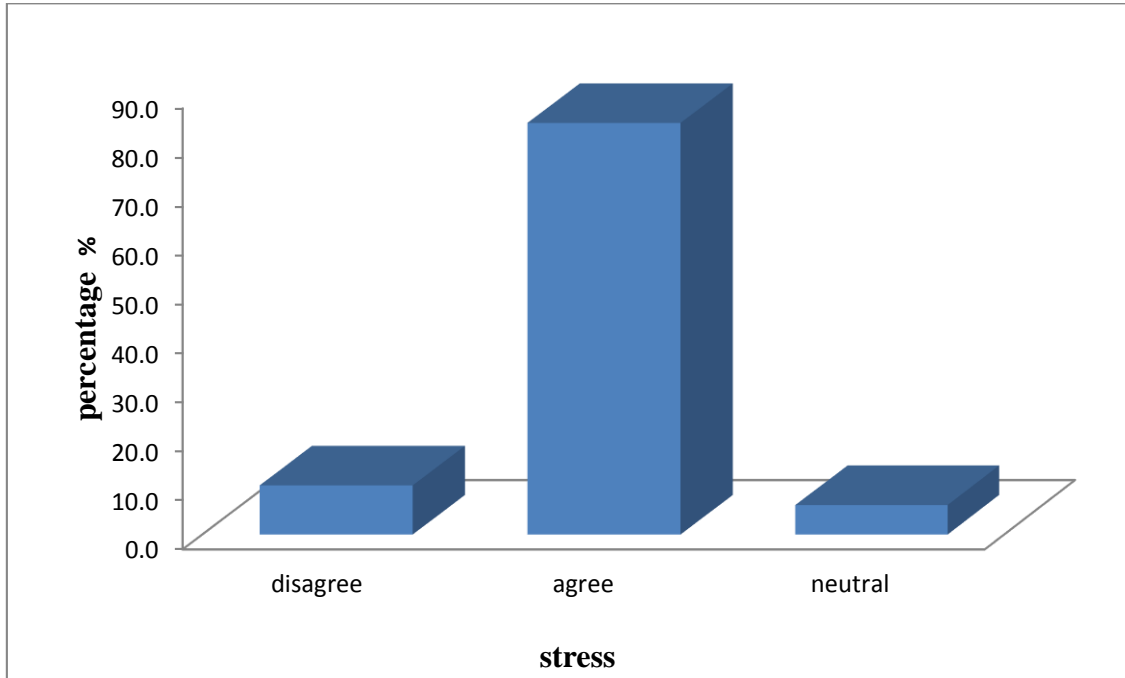
**Interpretation**

according to survey 88% employees said that they are not satisfied to his job, 8% employees said that they are satisfied to his job, 2% employees have neutral perception about job satisfaction.

**Conclusion:**

from the above chart it can concluded maximum 88% employees are not satisfied to his job

S.N.	Stress	Frequency	Percent %	Cumulative %
1	Disagree	5	10.0	10
2	Agree	42	84.0	94
3	Neutral	3	06.0	100
	total	50	100.0	



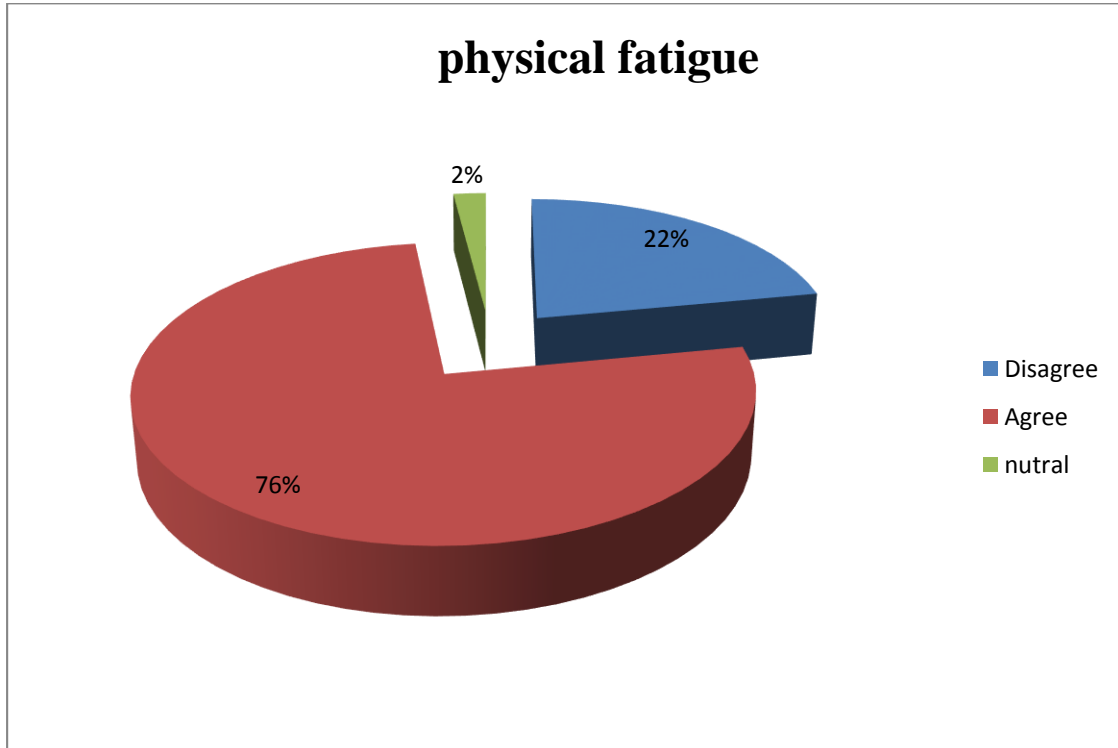
**INTERPRETATION**

according to survey 84% employees said that during the work his stress level is high due to noise and vibration and other reason, 10% employees said that they are not feel stress during the work, 2% employees have neutral perception about stress .

**Conclusion**

from the above chart it can concluded maximum 84% employees are feel stress during the work due to noise and vibration on shop floor. And if worker are feel stress so they can not perform his work. During the work employees should be free from stress so that they can give his 100%.

S.N.	Physical fatigue	Frequency	Percent %	Cumulative %
1	Agree	38	76.0	76
2	Disagree	11	22.0	98
3	Neutral	1	02.0	100
	total	50	100	



**INTERPRETATION**

according to survey 76% employees said that they are feel physical fatigue during the work, 22% employees said that they are not feel physical fatigue during the work, 2% employees have neutral perception about physical fatigue.

**Conclusion**

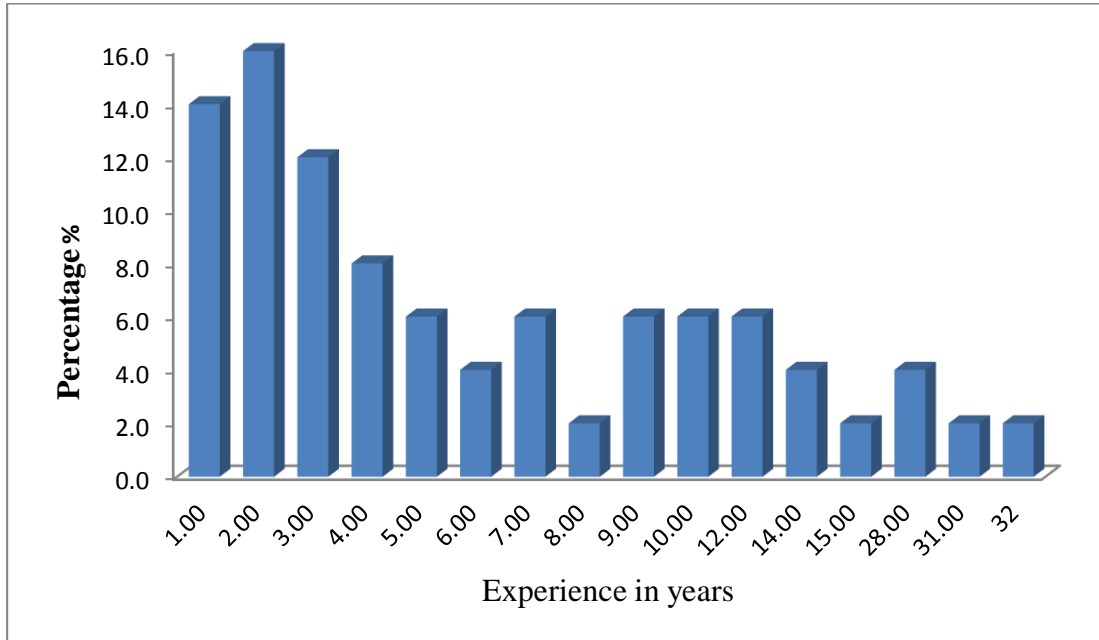
from the above chart it can concluded maximum 76% employees are feel physical fatigue during the work. And if worker are feel physical fatigue so they can not perform his work.

**Table 6.5: Experience of labours**

S.N.	Experience in year	Frequency	Percent %	Cumulative %
1	1	7	14.0	16
2	2	8	16.0	30
3	3	6	12.0	42
4	4	4	8.0	50
5	5	3	6.0	56
6	6	2	4.0	60
7	7	3	6.0	66
8	8	1	2.0	68
9	9	3	6.0	74
10	10	3	6.0	80
11	12	3	6.0	86
12	14	2	4.0	90
13	15	1	2.0	92



14	28	2	4.0	96
15	31	1	2.0	98
16	39	1	2.0	100
	total	50	100	



**INTERPRETATION:**

1. 14% respondents are having 1 year experience.
2. 16% respondents are having 2 year experience.
3. 12% respondents are having 3 year experience.
4. 8% respondents are having 4 year experience.
5. 6% respondents are having 5 year experience.
6. 4% respondents are having 6 year experience.
7. 6% respondents are having 7 year experience.
8. 2% respondents are having 8 year experience
9. 6% respondents are having 9 year experience
10. 6% respondents are having 10 year experience.
11. 6% respondents are having 12 year experience.
12. 4% respondents are having 14 year experience.
13. 2% respondents are having 15 year experience
14. 4% respondents are having 28 year experience
15. 2% respondents are having 31 year experience
16. 2% respondents are having 32 year experience

Above findings show that most of the labour are not much experience.

**REVISED RESEARCH MODEL**

After conducted Reliability analysis, there were 5 variables have been deleted because of the Corrected Item-Total coefficient of these variables are too low or minus, that variables are: job satisfaction, job security, noise, stress, physical fatigue. For the reason above, the conceptual model has been revised as Figure 4.

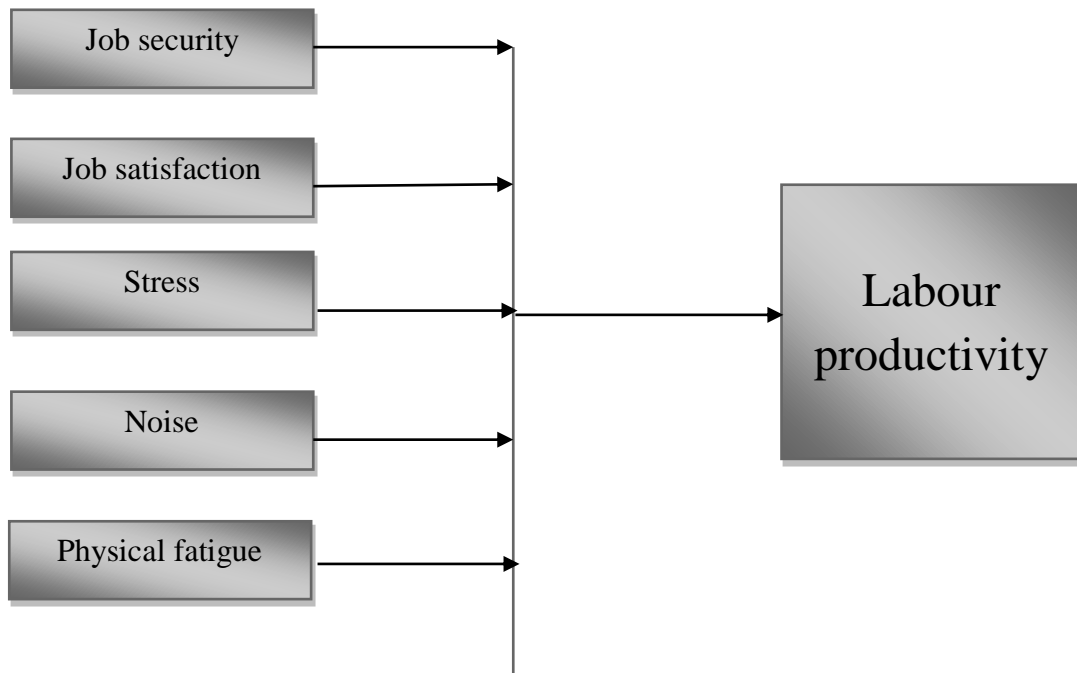


Figure 4.1: Revised conceptual model

**QUESTIONNAIRE**

Dear sir/mam,

I am student of shree dadaji institute of technology and science khandwa, conducting survey on

**“IMPACT OF WORKING CONDITIONS ON LABOUR PRODUCTIVITY IN MAUFACTURING INDUSTRY AND TO IMPROVE IT”**

I request you to fill this questionnaire and I assure that this data will be used only for study purpose.

**Name of respondent:**

**Age:**

**Designation:**

**Qualification:**

**Experience:**

**Contact no:**

Kindly put a tick/rating 1, 2, 3, 4, and 5 as give mark on the answer from various alternatives stated below:

<b>Strongly disagree</b> (1)	<b>Disagree</b> (2)	<b>Neutral</b> (3)	<b>Agree</b> (4)	<b>Strongly agree</b> (5)
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S.N.	Factors affecting the labour productivity	1	2	3	4	5
1	Lack of skill and experience of the workers	1	2	3	4	5
2	Lack of training and resourcing	1	2	3	4	5
3	High workforce absenteeism	1	2	3	4	5

4	Low labor morale/commitment	1	2	3	4	5
5	Poor relations among workers	1	2	3	4	5
6	Bad leadership skill	1	2	3	4	5
7	Late payment	1	2	3	4	5
8	Low amount of pay	1	2	3	4	5
9	Little or no welfare	1	2	3	4	5
10	Little or no financial rewards	1	2	3	4	5
11	Lack of place for eating and relaxation	1	2	3	4	5
12	Working 7 days per week without taking a holiday	1	2	3	4	5
13	working overtime	1	2	3	4	5
14	Material shortages	1	2	3	4	5
15	Low quality of raw material	1	2	3	4	5
16	Unsuitable material storage location	1	2	3	4	5
17	Equipment and tools shortages	1	2	3	4	5
19	Poor condition of equipment and tools	1	2	3	4	5
20	Incomplete/revise drawing	1	2	3	4	5
21	Inspection delay	1	2	3	4	5
22	Rework	1	2	3	4	5
23	Lack of labor safety	1	2	3	4	5
24	Inadequate lighting	1	2	3	4	5
25	High temperature	1	2	3	4	5
26	Humidity	1	2	3	4	5
27	Noise	1	2	3	4	5
28	job security	1	2	3	4	5
29	Job satisfaction	1	2	3	4	5
30	physical fatigue	1	2	3	4	5

## CONCLUSION

Based on the findings of this study, it could however be concluded that work environment affects job satisfaction, and achievement of organizational goals. The phenomenon of stress and job satisfaction is influenced by many factors ranging from financial rewards and non-financial rewards. Financial rewards have been found to be necessary but not

sufficient condition for stress and job satisfaction also non- financial rewards are important determinants of job satisfaction. Therefore, the work environment of most Indian organizations must be accorded with high priority while adequate consideration must be given to other rewards that give positive attitudes to workers in order to be satisfied with their job. Work environment has been found to be necessary condition for the achievement of organizational goal but over emphasis on work environment policies without due monitoring of employees may eventually have a negative effect on achievement of Organizational goal. Deriving from the above, it is recommended among other measures that management need to improve the system of communication with their employees; should create a motivating climate to increase productivity and clear reward system to all members of the organization; since work environment is the key determinant of job satisfaction, emphasis should be on how to improve the work environment, making it more conducive to employees in providing loans and other scheme that uphold and sustain.

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