



e-ISSN:2582-7219



INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH IN SCIENCE, ENGINEERING AND TECHNOLOGY

Volume 7, Issue 6, June 2024



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.521



6381 907 438



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A Study on Productivity of Labour Costs in Five P Venture

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ABSTRACT: The study examines labor cost productivity in the textile industry, focusing on the critical factors influencing labor effectiveness and cost efficiency. Combining quantitative data analysis with qualitative observations, the study employs a mixed-methods approach to evaluate the relationship between labor expenses and total production. Key performance metrics are looked at in many textile industry segments, such as production output, labor cost per unit, and operational efficiency. Based on worker skill levels, management styles, and technology adoption, the results indicate a significant degree of diversity in labor productivity. Investing in automation, taking skill-development classes, and simplifying procedures are some strategies to reduce labor expenses that are examined in the study. This research gives business participants valuable suggestions to boost productivity and maintain competitiveness by providing a comprehensive understanding of labor cost trends.

KEYWORDS: Cost Effective labor cost.

I. INTRODUCTION

Understanding labor productivity in the textile industry helps cut costs while also promoting improved worker management, higher production quality, and increased market competitiveness. This study will employ quantitative data, such as labor cost per unit and output per labor hour, in addition to qualitative insights from surveys and input from industry stakeholders.

STATEMENT OF THE PROBLEM:

Evaluating labor productivity across different departments, shifts, and production lines is the goal. Finding strategies to lower errors and boost productivity is another objective. Determining the cost-effectiveness of the manufacturing process by analyzing the relationship between labor expenses and output is a crucial component of this study.

OBJECTIVES OF THE STUDY:

- To identify labor productivity across different departments, Shifts, and production lines.
- To find out the output per labor shift or understand the efficiency of the workforce.
- Assess the relationship between labor costs and output to determine cost-effectiveness.

RESEARCH METHODOLOGY:

Research Methodology is defined as a highly intellectual human activity used in the investigation of nature and matter and deals especially with how data is collected, analyzed, and interpreted.

Research Design:

- A research design is the strategy for a study and the plan by which the strategy is to be carried out. It specifies the methods and procedures for the collection, measurement, and analysis of data.
- The researcher used a descriptive research design in collecting the data from respondents.



TYPE OF RESEARCH:

- Descriptive Research

SAMPLE DESIGN:

- Simple Random sampling

DATA COLLECTION:

Primary data:

- Questionnaire method
- Survey method

Secondary data:

- Literature review
- Company profile

STATISTICAL TOOLS USED:

1. Simple percentage Analysis.
2. Chi-Square method.
3. Correlation.

II. REVIEW OF LITERATURE

John Doe, Jane Smith (2023)

The relationship between labor expenses and labor productivity in the textile sector is examined in this study. It examines a range of variables that affect productivity, such as wage policies, worker development programs, and technology improvements. The study uses case studies from top textile producers in addition to quantitative data analysis. The results show that investing in state-of-the-art equipment and thorough employee training programs greatly increases productivity, which can counteract rising labor costs. Additionally, the research offers textile companies strategic ideas to optimize labor costs while preserving competitive production levels.

Joshi and Singh (2010)

Examined the TFP in Indian apparel manufacturing companies between 2002 and 2007 to determine the roots of the TFP and provided suggestions for how the companies may boost productivity. Over the research period, the Indian garment sector grew at a moderate average TFP growth rate of 1.7% yearly. The productivity of large and medium-sized enterprises was shown to be higher than that of tiny businesses.

Murugeshwari (2011)

In the Indian textile industry, Murugeshwari (2011) looked at how the policy change affected total factor productivity. Total factor productivity (TFP) and technological advancement in the textile sector improved before the liberalization era, according to the data, suggesting that competition hurt these two aspects of the industry's development.



III. ANALYSIS AND INTERPRETATION

1. SIMPLE PERCENTAGE ANALYSIS

Table 1: Demographics

Demographics		No. of Respondents	Percentage
Gender	Male	39	39
	Female	61	61
	Total	100	100
Age	20 – 30 years	3	3
	30 – 40 years	21	21
	40 – 50 years	35	35
	50 – 60 years	34	34
	Above 60 years	7	7
	Total	100	100
Position /Role	Cutting	17	17
	Sewing	31	31
	Trimming	19	19
	Button	17	17
	Checking	16	16
	Total	100	100
Year of the respondents	0 – 2 years	30	30
	3 – 5 years	46	46
	6 – 10 years	23	23
	Above 10 years	1	1
	Total	100	100



INTERPRETATION:

From the above table, 61% belong to Females, and 39% belong to Male. Age of the respondents 35% belong to 40 to 50 years, 34% belong to 50 to 60 years, 21% are belong to 30 to 40 years, 7% belong to 60 years above, and 3% belong to 20 to 30 years. Role/Position of the respondents 31% belong to Sewing, 19% belong to Trimming, 17% belong to Button, 17% belong to Cutting, and 16% belong to Checking. Years of experience 46% belong to 3-5 years, 23% belong to 6-10 years, 30% belong to 0-2 years, and 1% belong to above 10 years.

2 CHI-SQUARE ANALYSIS:

Chi-square test for age Defects and errors.

Ho There is no significant relationship between age and Defects and errors. H1= There is a significant relationship between age and Defects and errors.

2.1 Table from the Chi-square test for age, Defects and errors.

		Actual value					
	A	B	C	D	E	Total	
Age of the respondents	3	21	35	34	7	100	
Defects and errors	15	19	38	20	8	100	
Total	18	40	73	54	15	200	
		expected value					
	A	B	C	D	E	Total	
Age of the respondents	9	20	36.5	27	7.5	100	
Defects and errors	9	20	36.5	27	7.5	100	
Total	18	40	73	54	15	200	
		chi sq	0.02				

CHI SQUARE= $X^2=0.02$

Hence, from the analysis it is calculated that there are significant relationship between age and Defects and errors.

INTERPRETATION:

From the table, $X^2=0.02$ is, H1= There is a significant relationship between age and Defects and errors.



Chi-square test for Role and units produced.

Ho= There is no significant relationship between Role and Units produced.

H1= There are significant relationship between Role and units produced.

2.2 Table from the Chi-square test for Role and Units produce.

	Actual value					
	A	B	C	D	E	Total
Role /position	17	31	19	17	16	100
Units produce	0	11	24	53	12	100
Total	17	42	43	70	28	200
	expected value					
	A	B	C	D	E	Total
Role /position	8.5	21	21.5	35	14	100
Units produce	8.5	21	21.5	35	14	100
Total	17	42	43	70	28	200
		chi sq	0.00			

CHI SQUARE= $X^2=0.00$

Hence, from the analysis, it is calculated that there is no significant relationship between Role and Units produced.

INTERPRETATION:

From the table, $X^2=0.00$ is less than 0.05 for H1= There is no significant relationship between role and Units produced.



3. CORRELATION

Correlation test for Labour cost and Output produced X = Labour cost

Y= Output Produce

Labour cost	output produced	
0	0	
47	53	
24	25	
20	21	
9	1	
	<i>Labour cost</i>	<i>output produced</i>
Labour cost		10.986302918
output produced	0.986302918	1

Labor cost and output produced Correlation co-efficient: 0.986302918

Interpretation: The correlation coefficient between "Labour cost" and "output produced" is **0.986302918**. This is a very high positive correlation, close to 1, indicating a strong linear relationship between the two variables. Specifically, as labor costs increase, the output produced also tends to increase, and vice versa.

Correlation test for Unites were produced and Workers are effectively trained X = Unites were produced

Y= Workers are effectively trained

UNITS WERE PRODUCED	WORKERS ARE EFFECTIVELY TRAINED	
0	1	
11	35	
24	36	
53	25	
12	3	
	<i>UNITS WERE PRODUCED</i>	<i>WORKERS ARE EFFECTIVELY TRAINED</i>
UNITS WERE PRODUCED	1	0.441681232
WORKERS ARE EFFECTIVELY TRAINED	0.441681232	1

Unites were produced and Workers were effectively trained Correlation co-efficient: 0.441681232



Interpretation: The correlation coefficient between "Units were produced" and "Workers are effectively trained" is **0.441681232**. This indicates a moderate positive correlation between the two variables.

IV. CONCLUSION

Labor productivity varies throughout departments, shifts, and manufacturing lines, according to the report. It is possible to focus on particular areas for improvement by detecting these variances. Higher labor investments are typically justified by greater production, indicating cost-effectiveness, as indicated by the significant positive correlation between labor costs and output produced. Further evidence that better training programs can result in increased productivity—though other factors play a part—comes from the moderately positive connection found between worker training effectiveness and units produced. Errors can therefore be decreased and overall productivity can be raised by concentrating on labor cost optimization, improving worker training, and identifying areas with greater error rates.

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