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Labour Productivity Analysis of Private Sector Enterprises in Udaipur

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Keywords: *labour productivity.*

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Labour Productivity Analysis of Private Sector Enterprises in Udaipur

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Abstract- Theory of "Productivity of Labour" expounded labour productivity as one of the basic indicators of economic development, the major detriment of national income and important tool for analysis of economic and social problems. Labour productivity is the capital utilization of human resources of a concern. Labour productivity measures efficiency of labour force, which is directly related to savings in this item and since there has always been widespread interest in labour saving, labour productivity has become more popular as well as its importance and utility in the concern. This research paper is based on Labour Productivity Analysis of private sector enterprises. The present study concludes that value generated in the form of output (Productivity) of different private sector enterprises differs from each other.

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I. Introduction

Labour is the most important element, which contributes relevantly to production as well as productivity. The reason to support this statement is that for procuring, producing as well as handling raw material, manpower (labour) is required. Therefore, labour occupies a key role among all elements of costs. "Labour is the one key factor, which can give unlimited productivity".[1] Therefore labour productivity can be defined as the contribution made per labour to the operational activities of the business.

The economic advantage of increased production at lower unit costs, along with rising wage rates and increasing fringe benefits, have accelerated the trend towards greater use of automatic equipment to produce more goods in fewer labour hours. Changes in utilization of labour force require changes in methods of compensating labour, followed by changes in accounting for labour costs. Labour costs are all labour expended in altering the construction, composition, conformation or condition of the product. The wages paid to skilled and unskilled labour can be allocated specifically to the particular cost accounts concerned, hence the term 'Direct Wages', which may be defined as the measure of Direct Labour in terms of money.[2]

"Reduction in costs is one of the chief objectives of the production manager, and much guidance to this end may be secured from a suitably organized costing system."[3] Sir Ewart Smith and R. Beeching have defined labour productivity as the volume of output achieved in a given period in relation to the sum of the direct and indirect efforts involved in the production of the given output.[4]

Following measures are suggested for analyzing labour productivity:

1. Labour Productivity (Units) $= \frac{\text{Output (units)}}{\text{Total Number of Employees}}$

With the help of this formula, production made per unit of labour is ascertained. Using this ratio, we can calculate the quantity of production contributed by one labour.

2. Labour Productivity (Value) $= \frac{\text{Output (Rs)}}{\text{Total Number of Employees}}$

(Here, Output = Sales + Closing Stock – Opening Stock)

This ratio finds out the value of production per employee. Higher the ratio, better it is for the concern.

3. Employee Contribution to Production $= \frac{\text{Value of Output (Rs)}}{\text{Total Wages and Salaries paid to Employees}}$

This formula finds out worth of a Rupee spent on employees. It calculates value of production in (Rs.) contributed by the employees, i.e. Value generated by Re. 1 spent towards employees. It calculates the value of output (Rs.) generated by spending Re. 1 as wages.

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$$\text{Labour Productivity Index} = \frac{\text{Total Wages and Salaries Paid}}{\text{Output}} \times 100$$

This ratio shows the percentage of wages to the value of production. Lower the percentage, better it is, for the concern.

4. $$\text{Earnings per Employee} = \frac{\text{Profit after Tax}}{\text{Total Employees}}$$

This ratio of profit to total employees calculates the earning per employee.

II. Review of Literature

Research work has been done on Productivity but not much research is available on Labour Productivity. Thus an attempt has been made to analyse the Labour Productivity of Private Enterprise.

Review 1: Productivity Measurement Evaluation and Improvement (Verter, V & Mebmet, A.E.). The authors case study based on production system gave promising results in terms of effectiveness of the measurement models.

Review 2: "Measurers of Productivity" (Mundel, ME). In this paper author emphasized that profitability increase based on productivity improvements are much reliable in the long run than the ones motivated by just increasing the output prices.

III. Objective

To analyse the labour productivity of selected private sector enterprises.

NULL HYPOTHESIS (H_0): There is no significant difference in the labour productivity of different private sector enterprises.

ALTERNATIVE HYPOTHESIS (H_1): There is a significant difference in the labour productivity of different private sector enterprises.

IV. Sample Collection

A sample of four companies' viz. Hindustan Zinc Limited (HZL), Rose Zinc Limited (RZ), Binani Cement Limited and Pyrotech Private Limited (PEPL) are chosen for the present study. The study sample was collected on convenience basis. The required data for sample units have been collected from the published financial reports and the company websites.

V. Period

A period of 5 years from 2012-13 to 2016-17 was considered for the purpose of analyzing the labour productivity of the companies.

VI. Research and Methodology

Simple statistical techniques such as Mean, Standard Deviation, Coefficient of Variance and Student *t*-Test have been used to analyse the data of sample units.

VII. Analysis and Discussion

Table 1: Value of Output to Total Employees (Metric Tonne)

Years	Hindustan Zinc Ltd	Rose Zinc	Binani Cement	PEPL(in units)
2012-13	32.33	64.66	851.31	98
2013-14	30.16	60.32	1267	108
2014-15	28.32	56.67	1413.98	115
2015-16	34.87	69.74	1338.84	117
2016-17	38.09	76.18	1695.73	126
Mean	*32.754*	*65.514*	*1313.372*	*112.8*
SD	*3.45*	*6.893*	*272.991*	*9.368*
CV	*10.53%*	*10.52%*	*20.79%*	*8.31%*

Authors own source

Table 1 shows the value of output to total employees in Units i.e. Metric Tonne. HZL shows a mixed trend; its value of output to total employees decreased in two consecutive years and then it increased in 2015-16 and in 2016-17, with the average mean of 32.754 Metric Tonne. RZ also showed the decreasing trend in the beginning of the study period and then showed a vast increase of 23.06% in 2014-15 and 9.23% in 2016-17. Binani Cement showed the increasing trend except for the year 2016-17 where

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output to total employees decreased by 5.31%. PEPL showed the continuous increasing trend throughout the study period with the minimum coefficient of variation, which shows consistent value of output to total employees. Further the trend was analyzed through *t*-Test in later part of the paper.

Table 2: Value of Output to Total Employees (Rs)

Years	Hindustan Zinc Ltd	Rose Zinc	Binani Cement	PEPL
2012-13	717557	1435114	721112	381575
2013-14	675243	1350486	881971	396410
2014-15	732554	1465108	891364	397399
2015-16	1057984	2115974	1022627	422236
2016-17	1098658	2197316	1281682	372563
Mean	*856399.2*	*1712799.6*	*959751.2*	*394036.6*
SD	*182624.268*	*365249.861*	*187226.089*	*16902.97*
CV	*21.33%*	*21.33%*	*19.51%*	*4.29%*

Authors own source

Table 2 depicts the value of output to total employees in money value (Rupees). Binani Cement showed a continuous increase in the output value generated by employees with the average mean of Rs. 3,94,036.60. HZL also showed a continuous increase in money generating efforts by increasing output except for the year 2013-14 where it's value of output to total employees reduced by Rs. 42,314 (5.89%). In the case of RZ a substantial increase in the year 2014-15 by 7.82% was consistently followed by increase during the study period. PEPL showed slow growth in the first three years followed by an increase of 6.24% in value of output to total employees in the fourth year, but decreased in the fifth year by 11.76%. Later, the trends were put through the *t*-Test.

Table 3: Value of Output to Total Wages and Salaries paid to Employees (Rs)

Years	Hindustan Zinc Ltd	Rose Zinc	Binani Cement	PEPL
2012-13	7.31	14.62	9.58	19
2013-14	6.53	13.06	10.76	20.1
2014-15	6.07	12.14	8.89	23.85
2015-16	7.3	14.6	8.7	19.71
2016-17	6.43	12.86	9.23	28
Mean	*6.728*	*13.456*	*9.432*	*22.132*
SD	*0.495*	*0.991*	*0.729*	*3.382*
CV	*7.36%*	*7.36%*	*7.73%*	*15.28%*

Authors own source

The ratio of value of output to total wages and salaries paid to employees in Rupees is illustrated in Table 3. HZL showed almost steady trend but in 2015-16 its value jumped up with an increase of 20.26%. RZ had a decreasing trend in the initial three year sample years, increased for the subsequent year then again decreased. Binani Cement also showed a fluctuating trend, with a mean of Rs. 9.432. PEPL however, showed an increasing trend, though the value of output reduced to Rs. 19.71 in the year 2015-16 but in the year 2016-17 it went up by 42.05%. PEPL showed the highest average of Rs. 22.132. The mix trend of value generated by employees in terms of wages and salaries paid was analyzed by *t*-Test.

Table 4: Value added to Total Employees (Rs)

Years	Hindustan Zinc Ltd	Rose Zinc	Binani Cement	PEPL
2012-13	353666	707332	175000	38121
2013-14	304185	608370	223000	39110
2014-15	323065	646130	234963	21511
2015-16	522663	1045326	243978	39112

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2016-17	517770	1035540	287947	18765
Mean	*404269.8*	*808539.6*	*232977.6*	*31323.8*
SD	*95990.808*	*191981.617*	*36352.552*	*9181.475*
CV	*23.74%*	*23.74%*	*15.60%*	*29.31%*

Authors own source

Table 4 shows the value added to total employees in Rupees. Binani Cement showed increasing values for continuous five years which is a good sign of labour productivity of the company. HZL had a mix trend with the highest value generated in the year 2015-16 (Rs. 5,22,663). RZ value declined in the year 2013-14 but then it showed a growth for two years then further declined slightly in the year 2016-17. RZ showed the highest mean value of Rs. 8,08,539.60. PEPL had a major decline of value in the year 2014-15 by 44.99% and in the year 2016-17 by 52.02%, which shows the poor labour productivity of the company. Trends were analyzed by *t*-Test.

Table 5: Overall Analysis

Name of Variables	SE	Calculated Table Value @5% Level of Significance	Inference
Value of Output to Total Employees (Metric Tonne)	1.224694	2.35	NS
Value of Output to Total Employees (Rs)	3.589099	2.35	S
Value of Output to Total Wages and Salaries paid to Employees (Rs)	3.847758	2.35	S
Value added to Total Employees (Rs)	2.237136	2.35	NS

- *S (Significant)*
- *NS (Not Significant)*

VIII. Conclusion

The overall analysis of Labour Productivity on the basis of different variables conclude that value generated in the form of output is not significant in the different private sector enterprises in terms of units and value added by the employees but labour productivity in terms of wages and salaries significantly differs in private sector enterprises.

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