

CHAPTER FIVE

IMPACT OF SOCIAL SECURITY AND LABOUR WELFARE
MEASURES ON PRODUCTION AND PRODUCTIVITY

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5.1 INTRODUCTION

This chapter, in the beginning, unfolds the nexus between Social Security-cum-Labour Welfare measures, Production and the Labour Productivity. In its succeeding stage, the discussion harps on the key point of disclosing the impact of Social Security and Welfare Measures on Production and Productivity in the Regional Workshops, Hubli. The impact is displayed through statistical tool 'Co-efficient of Correlation' and data analysis. The discussion in this chapter comes to an end with concluding remarks.

5.2 NEXUS BETWEEN SOCIAL SECURITY-CUM-LABOUR WELFARE MEASURES AND PRODUCTION AND PRODUCTIVITY

Production in Economics refers to transformation or creation of utilities. It is an absolute concept indicating the creation of certain goods and services during a specified period of time. The term 'productivity' refers to the ratio between output and input.

There is a yawning gulf between production and productivity. Unlike production which is an absolute concept, productivity is a relative term and it is related to the efficiency with which resources are used to turn out a given amount of output. An increase in production does not necessarily mean increase due to more inputs. But higher productivity leads to increase in production. Increasing productivity essentially implies fuller, efficient and economic utilisation of available resources - men, machines, money, materials, etc.

The term 'productivity' has become a watchword for progress during post-World War period. Shri G.L. Nanda, in Indian context remarked:

Productivity is practically a synonym for progress. For us it means not merely progress but survival.

In pursuasion of increasing productivity several efforts have been mobilised. The institution of National Productivity Council is one such effort in this direction. With a view to increasing national awareness on importance of productivity as the key to development, 1966 and 1982 were declared as the YEARS OF PRODUCTIVITY.

Under the purview of productivity-drive State Road Transport Undertakings like Bombay, Delhi, Srinigar organised Methods Improvement Projects. These undertakings beings basically labour-intensive units, stress was given to improve labour productivity. It is a fact beyond doubt that the prosperity of any concern including road transport units depends on the efficiency of labour.

The experts in the realm of Industrial Psychology and Human Engineering maintain:

MEN AND WOMEN are brain and soul as well as brawn and strength. But it is the brain and soul that can determine the level with which brawn and strength do their work.

In other words, the capacity to work, the ability to render efforts are predetermined by the will to work. The labourer's will to work

in an industry is greatly hampered by the industrial hazards, diseases and insecurities. In order to eradicate and champion all suchⁱⁿ securities, hazards and to infuse a sense of security, to build up the will to work of the labour and to prepare his mind to shoulder the challenges of industrial work, there is a pressing need for extending a well-knit social security and labour welfare measures.

A comprehensive programme aiming at greater diffusion of technical and general education, improved working and housing facilities, sound work environment etc., is bound to have a favourable effect on the efficiency of the workers.

Ergonomics - a discipline dealing with workers, machine and environment in an industry, reveals that reduction in fatigue, boredom, creation of congenial working conditions, provision of safety and hygiene, assurance of job satisfaction, building up employee morale, greatly improve the productivity of labour and the production.

It is perhaps, in perception of increasing labour and machine productivity leading to increase in production, that India has set up its first Ergonomics Laboratory as early as 9th February 1978. The Laboratory has been conducting research on the physical, physiological and psychological effects of work and the environment on industrial workers.

5.3

CORRELATION EXERCISE RESULTS

Under this title:

- 1 Correlation between expenditure on Social Security and the Value of Output; and
- 2 Correlation between expenditure on Labour Welfare Activities and the Value of Output in the Regional Workshops, Hubli,

are built with the help of Co-efficient Correlation analysis.

5.3.1 CORRELATION BETWEEN EXPENDITURE ON SOCIAL SECURITY AND THE VALUE OF OUTPUT

The following table reflects the data relating to the Annual Expenditures on Social Security and the Value of Output for the corresponding years from 1980-81 to 1987-88.

Table No. 5.1
Social Security Expenditure and Value of Output
(Amount in Rupees)

Year	Expenditure on social security	Value of Output
1980-81	5,25,754.48	4,92,88,659.00
1981-82	5,30,717.34	6,65,65,257.00
1982-83	8,53,987.71	7,75,97,435.00
1983-84	14,25,708.56	7,92,70,801.00
1984-85	42,82,735.12	7,81,37,580.28
1985-86	38,18,816.76	10,50,54,932.01
1986-87	36,05,317.42	10,06,43,729.09
1987-88	33,79,583.12	06,85,89,759.66

Source: Annual Administrative Reports, R.W.Hubli.

It is evident from the above table that the expenditures on Social Security have continuously increased from 1980-81 to 1984-85.

However, between 1984-85 and 1987-88 there has been a gradual decline in the same.

The figures relating to the value of output show more or less a similar trend of gradual increase, except for the fact that during 1984-85 to 1985-86, the expenditures on Social Security have declined but the value of output has increased substantially from Rs. 7,81,37,580/- to Rs. 10,50,54,932/-. Barring this significant change, there appears to be distinctive correlation in the movement of these two variables.

In order to precisely define the correlation between the Expenditure on Social Security and the value of output, the calculations of Co-efficient of Correlation have been made which are presented in the table on the following page.

CONCLUSION

The "r" value calculated in the above exercise comes to be 0.642. It distinctly points out a positive correlation and substantiates our earlier hypothesis that greater the expenditure on Social Security, greater is the Value of Output. The correlation exercise result clearly justifies the nexus between Social Security expenditures and the Value of Output.

5:3.2 CORRELATION BETWEEN EXPENDITURE ON LABOUR WELFARE ACTIVITIES AND THE VALUE OF OUTPUT

The following table reflects the data pertaining to the Annual Expenditure on Labour Welfare Activities and the Value of Output in the

x	y	x = x - x̄	y = y - ȳ	x ²	y ²	xy
5.25	4.93	-17.7715	-2.885	316.03951	8.323225	51.288088
5.31	6.66	-17.7175	-1.155	313.90981	1.334025	20.463713
8.54	7.76	-14.4875	-0.055	209.88766	0.000025	0.7968125
14.26	7.93	-8.7675	0.115	76.86905	0.013225	-1.0082625
42.82	7.81	19.7925	0.605	391.74306	0.000025	-0.0989625
38.19	10.51	15.1625	2.695	229.90141	7.263025	40.862938
36.05	10.06	13.0225	2.245	169.58551	5.040025	29.235513
33.80	6.86	10.7725	-0.955	116.04676	0.912025	-10.287738
184.22	62.52			1823.9828	22.8886	131.2521

$$x = 23.0275 \quad y = 7.815$$

The Co-efficient of Correlation equation being:

$$r = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

$$\therefore r = \frac{131.2521}{\sqrt{1823.9828 \times 22.8886}}$$

$$= \frac{131.2521}{42.708112 \times 4.7842032}$$

$$= \frac{131.2521}{204.32428}$$

$$= 0.64237155$$

$$r = 0.64237155 \quad \text{Answer}$$

Regional Workshops, Hubli, for the corresponding years from 1980-81 to 1987-88.

Table No. 5.2
Expenditure on Labour Welfare Activities and the Value of Output (Amount in Rs.)

Year	Expenditure on Labour Welfare Activities	Value of Output
1980-81	29,33,223.90	4,92,88,659.00
1981-82	31,31,699.07	6,65,65,257.00
1982-83	44,74,123.75	7,75,97,436.00
1983-84	49,53,705.30	7,92,70,801.00
1984-85	46,65,498.00	7,81,37,580.28
1985-86	55,98,840.00	10,50,54,932.01
1986-87	67,86,125.00	10,06,43,729.09
1987-88	65,07,408.00	06,85,89,759.66

Source: Annual Administrative Reports, R.W.H.

It can be seen from the above table that from 1980-81 to 1983-84, the expenditure on Welfare Activities have continuously increased. The figures relating to the Value of Output also indicate similar trend. Interestingly, there is a decline in the expenditures towards welfare activities during 1984-85 to the tune of Rs. 2 lakhs and 88 thousand (approximately), consequently there has been a shrinkage in the Value of Output to the tune of Rs. 11 lakhs and 33 thousand (approximately). On the contrary, an increase in the expenditure during subsequent year 1985-86 had led to an increase in the Value of Output. During the year 1987

and 1988 there was a shift in the functioning of the Workshops from three-tier to two-tier system. As a result the Workshops witnessed a mass transfer of employees to the Divisional Workshops. Owing to this reason, there has been shrinkage in the Value of Output.

Barring such unusual changes, there appears to be significant correlation in the movement of these two variables. With a view to precisely defining the correlation between the two, the calculations of Coefficient of Correlation have been made which are presented in the table on the next page.

CONCLUSION

The "r" value calculated in the above exercise comes to be 0.553. It clearly establishes a positive correlation and substantiates our hypothesis that greater the expenditure on Labour Welfare Activities, greater is the Value of Output. The correlation exercise results clearly justify the nexus between expenditure on Labour Welfare Activities and the Value of Output.

5.4 ANALYSIS OF DATA PERTAINING TO LABOUR PRODUCTIVITY IN REGIONAL WORKSHOPS, HUBLI

The term 'productivity' is defined in several ways. But the operational definition we are adopting here is as follows:

It is the value of output per
worker during the year*

* The Value of Output here refers to Gross value and not the Net Value. The productivity figures would have been more reliable with the net value added. But this method of net value had to be sacrificed for want of adequate statistical information.

\underline{x}	\underline{y}	$\underline{x = x - \bar{x}}$	$\underline{y = y - \bar{y}}$	$\underline{x^2}$	$\underline{y^2}$	\underline{xy}
29.33	4.93	-19.48	-2.88	379.47	8.29	56.10
31.32	6.66	-17.49	-1.15	305.90	1.32	20.11
44.74	7.76	-4.07	-0.05	16.56	0.002	0.20
49.54	7.93	0.73	0.12	0.53	0.01	0.09
46.65	7.81	-2.16	0	4.66	0	0
55.99	10.51	7.18	2.70	51.55	7.29	19.39
67.86	10.06	19.05	2.25	362.90	5.06	42.86
65.07	6.86	16.26	0.95	264.39	0.90	15.45
390.5	62.52			1375.96	22.87	

$$x \quad 48,81 \quad y = 7.81$$

The Co-efficient of Correlation being:

$$r = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

$$\therefore r = \frac{98.1}{\sqrt{(1375,96)(22.87)}}$$

$$= \frac{98.1}{37.09 \times 4,78}$$

$$= \frac{98.1}{177.29}$$

$$= 0.553$$

$$r = 0.553 \quad \text{Answer}$$

Having adopted this definition, the calculations were made for the years 1980-81 to 1987-88. Since the figures of the number of workers employed are pertaining to the calendar years from 1980 to 1988, for arriving at the number of employees for the financial years like, - 1980-81, 1981-82 ... 1987-88, we calculated the arithmetic mean of two consecutive years. The results of the same are displayed in the following table.

Table No. 5.3
Productivity of Workers in R.W.H. (Amount in Rs.)

Year	Value of Output	No.of workers	Value of Output per worker
1980-81	4,92,88,659.00	1,403.5	35,118.38
1981-82	6,65,65,257.00	1,578.5	42,169.94
1982-83	7,75,97,436.00	1,547.5	50,143.73
1983-84	7,92,70,801.00	1,468.5	53,980.79
1984-85	7,81,37,580.28	1,375.5	56,806.67
1985-86	10,50,54,932.01	1,395.5	75,308.19
1986-87	10,06,43,729.09	1,424.0	70,676.77
1987-88	06,85,89,759.66	1,147.0	59,799.26

Source: Administrative Reports, R.W.H.

The figures reflecting the value of output per worker indicate a substantive and continuous rise from 1980-81 to 1985-86. Interestingly, there has been a fall in the productivity during 1986-87 and 1987-88 and if we consider the figures of expenditure on Social Security and Labour

Welfare Activities, they also show a decline during these very years.

Thus these results substantiate our argument that greater expenditure on Social Security and Labour Welfare Activities leads to rise in productivity while a fall in these expenditures lead to corresponding fall in the productivity.

5.5

CONCLUSION

The results of the correlation exercise and the analysis of data pertaining to production and labour productivity bring home the following conclusions:

- * There is a positive correlation between the expenditures on Social Security-cum-Labour Welfare Programmes and production. It is a wise investment which tends to increase output.
- * There is also a positive correlation between expenditures on Social Security-cum-Labour Welfare Activities and the Labour Productivity. Increasing expenditures on these measures are result-rewarding. They stimulate labour to flash better output.
- * Thus there is close nexus between expenditure on Social-Security-cum-Labour Welfare Activities, production and labour productivity.