Wage-Labour Productivity Relationship in Manufacturing Sector of Karnataka State – A Special Reference to Textile Industry

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Abstract:- Sustained economic growth is attained when there is increase in worker's productivity. Most of the developing economies are consists of service industries, these service industries are dependent on manufactured goods for their growth and for their own technological progress. This paper examines the wage-labour productivity relationship in the Textile industries of Karnataka. This sector contributes 20% of the garment production which is worth of USD 1.56 billion. Karnataka contributes 8% of the entire country's exports, 35% of country's raw silk production, 24% of the silk goods exports at national level and 6% of the cotton produced in the country. At this juncture the state also reports strikes over unpaid wages which can distort the garment hub. When majority of workers are paid only minimum wages, will it affect the labour productivity? The researcher will use the data of 2005-06 to 2014-15 to describe the Wage-Labour Productivity Relationship. The data will be collected from the secondary sources such as registered (formal) segments of the Annual Survey of Industries. It is generally believed that wages are positively related to labor productivity. The objective of this paper is to study the interdependence between wages and productivity of the workers in the textile industry, two variables will be analysed, i.e, net value added (NVA) per worker and wages per worker. The Statistical tool like coefficient correlation will be used to find the correlation coefficient between the two variables under study.

I. INTRODUCTION

United Nations Industrial Development Organization (UNIDO) reported that since 2005 to 2011, the industry value added grew by 2.1 per cent in textiles, 3.9 per cent in clothing and fur, and 3.9 per cent in leather, leather products and footwear. According to the Central Statistical Organisation, India has emerged as the fastest growing major economy in the world. In between the FY12 and FY17, manufacturing sector grew at a CAGR of 7.32 per cent and the textile sector grew by 7.7 per cent in FY17. According to IBEF, The wholesale price index, of manufactured goods grew 2.4 per cent between April 2016 and January 2017.

The gross state domestic product (GSDP) of Karnataka was about US$ 156.23 billion in 2015-16. The average GSDP growth rate between 2004-05 and 2015-16 was about 13.93 per cent. The per capita GSDP increased at a compound annual growth rate (CAGR) of 12.91 per cent between 2004-05 and 2015-16 to US$ 2,557. The state has attracted Foreign Direct Investment (FDI) equity inflows worth US$ 20.24 billion during the period April 2000 to March 2016. (DIPP).Karnataka ranks at the second position in garment exports when the value of the exports is considered. The present garment export of Karnataka is estimated to be around Rs. 4000 crores. Karnataka's venture into the textile sector has turned out to be quite a successful step for the state. But recently the textile industry is losing its sheen. 10 years ago, textile industry offered 20,000 jobs but today there are only 6000 workers employed in the 31 mills in the state. At this juncture it is important to understand and validate the labour productivity in the textile sector. The researchers attempt to study the interdependence between the wages and labour productivity of textile industry.

II. REVIEW OF LITERATURE

Tamasaukiene and Stankaityte (2013), thepaper tries to evaluate the relationship between wages and labour productivity in the economic sectors and regions of Lithuania. The paper attempts to reveal a theoretical approach to the relationship of labour productivity.The paper concludes by showing the dissimilarities between labour and wages. During 2005 – 2010 the regional dissimilarities of labour productivity are greater than of wages.

Aslam (1983), this paper attempts to study the determination of the level of real wages and labour productivity across industries as well as overtime with the help of simultaneous-equation framework. The variables used are productivity, investment, employment, price and level of welfare. The paper throws light on the inter-industry wage differentials and the determination of wage level over time. The paper tries to quantify the effect of higher wages productivity and attempts to provide empirical evidence on simultaneous determination of inter-industry differentials in wages and labour productivity across 24 different industries

for the year 1977-78. The study found that elasticity of wages with respect to labour productivity is reasonably high and significant. 1% increase in productivity leads to an approximately 0.5% rise in wages. The study concludes that wages and labour productivity are important determinants of each other.

Asiya et.al (2016), this paper focuses to explore and select the variables to measure the productivity of Bombay Dyeing & Mfg Co. Ltd. The paper uses trend analysis to study the labour productivity. This study was conducted from the FY 2010-11 to 2015-16 and the researchers'uses secondary sources to collect data for their study. The formula used for calculating the monetary equivalent output is by multiplying the quantity of finished products expressed in metre with the price of finished products in the concerned year. The study found that reason for the low productivity are unreachability of resources or excessive time spend to acquire and train the workers to use them and also the obsolete machinery. In addition of it, intermittent power supply, scarcity of water, and infrastructural problems reduces the productivity further. The researchers concludes that the government should focus on the overall improvement in textile productivity.

Shanmugasundaram and Pachanatham (2011), In the present paper, the researchers discusses the espousal of labour productivity in the textile industry. The study tries to identify the problems faced by the MEPZ, SEZ and EOU apparels manufacturers in the changed global business scenario and their probable reasons and impacts. The study aims to find out the factors that leads to and obstructs the labour productivity level of apparel industry. The study collected the data from primary and secondary sources. The study found that there is no significant difference between operators training with regard to labour productivity. The study also found that there is no significant relationship between average monthly presences of labour with regard to labour productivity. The researchers conclude that the a lot more need to be done in the Indian apparel markets such as production of garments in bulk with proper specification and austere standards adopted by modern production practices.

Sharpe et.al (2008). Researchers believe that the real wages affects the living standards and labour productivity. This paper attempts to study why between 1980 and 2005, the median real earnings of Canadians workers were low, but labour productivity rose 37 per cent. This article analyses the reasons for this situation and identifies four factors of roughly equal importance for this development: rising earning inequalities; falling terms of trade for labour; a decrease in labour's share of GDP; and measurement issues. Business cycles have an impact on the relationship between labour productivity and real wages as a result of lags in adjustment and imperfect competition in product and labour markets. Reductions in the regulation of labour and product markets as well as increasing competition resulting from globalization have lowered the labour share. The study concludes that the Canadians are not seeing any benefits of labour productivity growth in the form of higher real wages.

III. OBJECTIVES

- To understand the interdependence of the wages and the productivity of the labour.
- To study the effect of wages on the productivity.

IV. THEORETICAL BACKGROUND

The simple neoclassical introduces the concept of efficiency wages indicates that even in the short run the relationship between wages and productivity is no longer forthright (Shapiro and Stiglitz (1984)).

The neoclassical theory of the marginal revenue productivity states that a profit maximising firm would employ labour only up to the point where the marginal labour costs exceed the marginal revenue generated for the firm. The theory also explains that a profit maximising firm will hire the workers till the point of equilibrium between the marginal revenue product and the wage rate. If the marginal revenue brought by the worker is lesser than the wage rate, then the profit maximising firm fails to get profit if they employ more labour.

(Akerlof 1982), argued that higher wages lead to greater effort from workers.

(Helpman et al. (2008) explained two effects of heterogeneity: Firm Heterogeneity - higher firm heterogeneity increases unemployment, wage inequality and income inequality. Worker Heterogeneity - higher worker heterogeneity has an abstruse effects on wage inequality.

(Hibbs and Locking, 2000) supports that reduction of inter-industry wage differentials contributes positively to aggregate output and productivity growth but there is no supporting data to prove that wage levelling within workplaces and industries may enhance productivity.

Subsistence theory of wages suggests that remuneration of a worker in the long run are determined at that level of wages which is just sufficient to meet their basic necessities of life. The subsistence theory of wages, advanced by David Ricardo and other classical economists, was based on the population theory of Thomas Malthus. This theory proposed that the market price of labour would always have a tendency to inclinetowards the minimum wages required for sustenance. There is always an inverse relationship between supply of labour and wages. If the supply of labour increased, wages would fall, eventually causing a decrease in the labour supply. If the wage rose above the subsistence level, population would increase until the larger labour force would again force wages down. (Britannica)

The neoclassical theory suggests that as the relative price of labour increases, the profit maximising firms will substitute capital for labour. The profit maximising firms will employ labour until the marginal productivity of labour equals the given real wage.

V. DATA ANALYSIS

To find out the interdependence of wages and labour productivity in the Textile sector of Karnataka correlation coefficient, is conducted. The time period of 2005-06 to 2014-15 is taken into analysis. The variables under study are number of workers, wages to workers and net value added in a particular year.

➢ *How to Measure the Wage- Labour Productivity Relationships*

- To calculate the Net Value Added (NVA) per worker, Total Net Value Added was divided by the total number of workers for a particular year.
- By dividing total wages with the number of workers for the year under study, the wages per worker can be calculated.
- To establish an association between: Net Value Added per worker(x) and wages per worker (y), a Correlation coefficient value (r) has been calculated.

Year	Units	Total employees	No of workers	Wages to workers	Net Value added	Net Value per worker	Wages per worker
2005-06	770	226454	183550	59452	177911	0.969	0.324
2006-07	851	252258	224845	98965	287061	1.277	0.441
2007-08	878	249435	222837	106934	324661	1.457	0.479
2008-09	466	36720	42302	17390	58954	1.394	0.411
2009-10	474	54750	41456	20151	145068	3.499	0.486
2010-11	581	54617	20615	22386	127877	6.203	1.086
2011-12	615	61094	37719	56251	157729	4.182	1.491
2012-13	660	47236	20672	82817	132137	6.392	4.006
2013-14	695	29876	20159	59146	114912	5.700	2.933
2014-15	700	29764	21255	59245	105910	4.983	2.787

Table 1. NVA per worker and wages per workers in textile industry.
Source: ASI 0f 10 years. (Ministry of Finance)
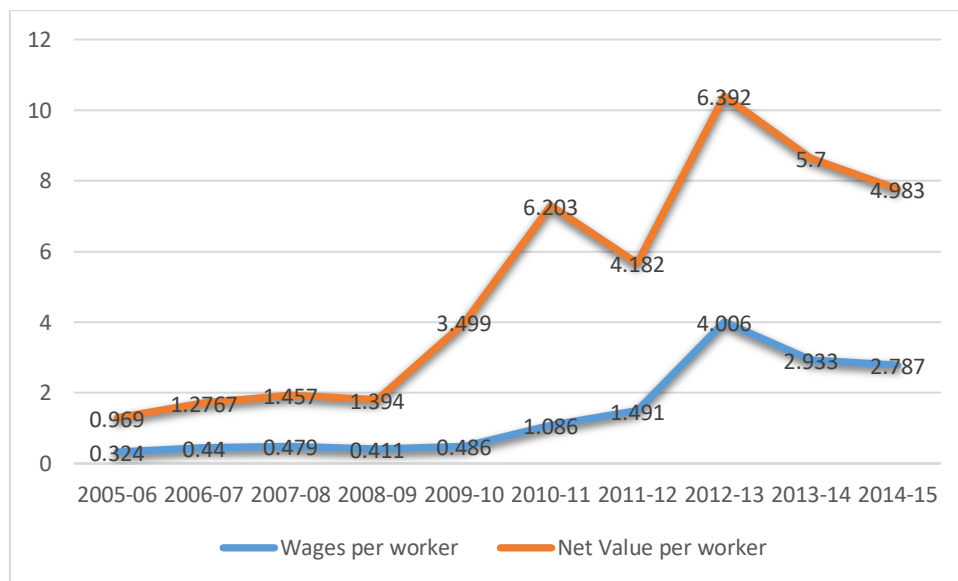
Graph 1. Trend of Net Value Added per worker(x) and wages per worker (y) in Textile sector of Karnataka

From the above table and graph we can conclude that both Net Value Added per worker(x) and wages per worker (y) shows a positive increasing trend. Theoretical evidence shows that high wage rate leads to efficiency and in turn increases the productivity. An rise in the wage rate may increase the purchasing power which inturn motivates that worker to work more and learn more. As a result it can increase the efficiency and productivity of the labour. The graph above shows that higher the wages per worker higher the net value added. The evidence is depicted in the year 2012 – 13, when wages per worker is 4.006, the net value added is 6.392. For further clarity and to measure the relationship between net value added per worker and the wages per worker correlation coefficient was performed using the two variables net value added per worker and wages received per worker. The table below shows the calculation of the correlation coefficient.

Year	Net Value Added per worker (X)	Wage per worker (Y)	XY	X2	Y2
2005-2006	0.969	0.324	0.418987	0.68973	0.25452
2006-2007	1.2767	0.44	0.561748	1.629963	0.1936
2007-2008	1.457	0.479	0.697903	2.122849	0.229441
2008-2009	1.394	0.411	0.572934	1.943236	0.168921
2009-2010	3.499	0.486	1.700514	12.243	0.236196
2010-2011	6.203	1.086	6.736458	38.47721	1.179396
2011-2012	4.182	1.491	6.235362	17.48912	2.223081
2012-2013	6.392	4.006	25.60635	40.85766	16.04804
2013-2014	5.7	2.933	16.7181	32.49	8.602489
2014-2015	4.983	2.787	13.88762	24.83029	7.767369
Total	36.606	14.443	73.03	173.02	36.75

correlation Value = 0.81

Table 2. Correlation co-efficient Calculation between Net Value Added per worker(x) and wage per worker (y)

The value of correlation co-efficient is 0.81 which implies that in the textile industries of Karnataka, the wages to workers and Net value added per labour are positively correlated. It means that higher the wages, higher will be the productivity.

VI. CONCLUSION

It can be concluded from the above mentioned study that in textile sector of Karnataka, net value added has been increased with increase of wages or in another way wages to workers and labour productivity are positively correlated. On the basis of the study, it can be said with reasonable degree of monetary incentive can boost the confidence and satisfaction of the workers. Certain type of non-monetary incentive such as appreciation letters, gifts in an occasion etc. can also increase the love and loyalty of the workers towards the organisation, which in turn can reduce employee absenteeism. Internal and external motivation, monetary and non-monetary incentives plays an important role for the success of an organization.

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