2.1. Introduction

Productivity studies are gaining significance in present day competitive environment. Textile productivity is gaining importance due to its industry relevance. Many factors are responsible and contribute for productivity. Similarly productivity measurements are also widely followed in industry. Textile industry productivity norms, methods and practices are discussed below. Wage systems prevailing in the industry and the collective bargaining practices followed are also reviewed. The disputes over wages, bonus, workload etc were settled through agreements and settlements. The awards offered a ground for linking wages, bonus with productivity as discussed below.

This chapter discusses earlier works on productivity on the following heads:

1. Productivity agreements.
2. Wage policy & Wage structure.

2.2. Productivity agreements

According to SCS Menon, a trade unionist from Kerala, Indian Aluminium Company (IAC) negotiated a productivity agreement in 1959 (1) while PNK Pillai (2) who was associated with IAC for a long time, wrote in 1973 that a basic metal industrial unit signed a productivity agreement in 1962 and B.K Tandon invites that Modi Mills Company Ltd., and its workers union entered into an agreement in 1956 (3) on the issue of rationalisation and productivity, providing safeguards for all the three parties - the employer, the employee and the customer. If we accept the view of E.A Ramaswamy (1985) (4) Nirmal Bose, 1986 (5) and M.K Verma (1986) (6) the productivity bargaining is an evolutionary stage in collective bargaining, preceded
by the agreements on wage incentives for higher productivity and rationalisation of methods of production, we can safely accept the view that the productivity approach in collective bargaining has been adopted in India since 1961-62, almost simultaneously with ESSOC [Standard oil company] at Fawley in UK, when IAC [Indian Aluminium company] in Kerala negotiated the so called first productivity agreement in India.

This agreement was based on the study conducted by a firm of consultants as reported by P.N.K. Pillai (7) and K. Zachariah (1981) (8). "The union was constantly consulted. As a result of negotiations, the union agreed to accept method changes, mechanisation and rationalisation of crew strength. The company, which was then in expansion process on its part, agreed not to effect retrenchment". Within a period of ten to eleven years the productivity index quadrupled from 8 tons to 32 tons per man-year. During the same period, wages increased by over 300 percent from Rs.217 to Rs. 680 per month.

In 1962 Cochin Refineries negotiated a productivity agreement eliminating the system of helpers, fitters, welders, painter, machinists etc., The public sector Bhilai steel plant (9) provides another example of productivity bargaining and agreement in reducing manpower, introducing a shop based productivity scheme and presence of workers skills in the longrun.

In 1970s productivity bargaining extended to pharmaceutical and other industries. S. Haridasan reports in labour chronicle that in early 1972 one of the leading units in the pharmaceutical industry had successfully concluded a comprehensive agreement with its union on salary, DA, allowances, leave, working hours, promotion, PF, gratuity etc, for the workers concerned. The unions recognised the managements right in measures to improve productivity through change in workflow, work planning, work simplification, system and procedures, re-organisation and modernisation. (10)
About the same time ie early 1972, a productivity agreement entered into by an engineering concern from Bombay with its workmen enabled the management "to achieve three-fold increase in productivity with appropriate increase in the emoluments of the employees. The agreement includes fixation of better work standard, rationalised sizes of staffs in various jobs, consolidation of job categories, reduction of idle time and wastages, avoidance of restrictive work practices, reduction or limitation of helpers, work simplification methods etc. (11)

But Subrataesh Ghosh writing in 1986 on productivity agreements observed that productivity agreements were still relatively rare phenomenon in India. In his study of 252 collective bargaining agreements signed between 1977-81 he found that only sixty six agreements (26.10 percent) resembled productivity agreements. In another study on Management of labour productivity in the public sector, out of fortythree productivity schemes from sample public enterprise evolved during 1982-84, twenty two schemes (51 percent) were introduced as productivity agreements. Considering that 1982 was declared as the productivity year under the initiative of the late Prime Minister Mrs. Indira Gandhi, the record has been poor. (12) A careful review of the literature on productivity bargaining and productivity agreement reveals that the so called, productivity agreement signed, especially during the late 1960s' and 1970s', by various organisation, such as Hindustan Insecticides Ltd (HILL), Indian Rare Earths Ltd (IREL), Carborundum Universal India Ltd, Koratty etc are more in the nature of incentive schemes - sometimes determined by time and motion studies, but the employees, on which the employer or management has no control. As a matter of fact, many employers have succeeded in utilising wage settlement as the instrument for securing superior performance and productivity.
In Bombay region almost every settlement signed by the Engineering Mazdoor Sabha (EMS) commits workers to specific levels of production, but linked with allowances other than DA. Mysore Kirloskar have linked bonus to productivity than profitability. The settlement of Larsen and Turbro (Bangalore) provides for a substantial ex-gratia payment disbursed quarterly if targeted production is reached (13).

In other words, productivity bargaining and productivity agreements of the kind in vogue in the UK are still in the early phase of evolution in India, and even such attempts are not common. The reasons, as GK Suri and PNK Pillai have listed on the basis of a study of the problems and possibilities of productivity bargaining in a public sector organisation in 1973 are; multiplicity of unions, their poor strength and lack of control over members, lack of or inadequate communication between workers and unions on the one hand and between managements and Managers on the other, absence of a participative style of management, managements response to problems like overstaffing, high rate of absenteeism and overtime and restrictive tradepractices by workers. (14) Unless and until these problems are tackled we cannot expect productivity bargaining to take root. Whether it is traditional type of agreement or productivity agreements, there is no legal provision under which the collective agreements are legal documents. We have larger number of settlements than agreements.

Inspite of the British capital and the initiative taken by Indian Entrepreneurs the growth of industrialisation during the pre-1947 period was slow. Industrialisation was confined to limited sectors and the Government participation was also low. Even after independence, the process of industrialisation was inhibited due to lack of resources and supportive Government policies. The new economic and industrial policy of Government gave importance to increase in production by all means. (15)
Industrial production on the whole has been growing every year, and today India is one of the industrialised countries of the world. The rate of increase, however, has not been consistent due to factors like Power shortage, transport problems, lack of raw materials, machinery, equipments etc. The other side of growth reveals the persistence of 'technical dualism' i.e., coexistence of old as well as modern Techniques. Traditional industries like cotton and jute textiles are facing a high rate of sickness because of obsolete Technology (16). In addition mechanisation and automation also force a threat of unemployment in industries. The growth rate of sickness in the private sector has strengthened the case for the total closure of sick industries. Another factor which inhibited growth in the industrial sector is the problem of economic recession during the 1960's and 1970s. Heavy inflation rates and dwindling balance of payments have caused concern for the Government to insist on higher production in the industrial sector, particularly in export oriented industries. Technical dualism is also reflected in the co-existence of large and medium sectors with a small, ancillary sector. In fact all state governments have been encouraging the growth of small and ancillary industries with a view to tackling the problem of unemployment.

The cotton and jute textile industries have been facing the problem of sickness on an increasing scale. Year after year, the list of sick textile mills has been growing. Most of such managements are waiting for the earliest opportunity to close the mills. The National Textile Corporation (NTC), which was formed to revive the sick mills, has also not been able to solve the growing problem (17).

The increase in foreign collaboration in certain industries like automobile, heavy engineering, infrastructure industry etc., has benefited the most through this development. More importantly, the country faced with dwindling exports during 1990
1991, necessitated the adoption of a new economic and industrial policy. Some of the major issues of 1991 Industrial policy are:

- to build on the gains already made.
- correct the distortion or weakness that may have crept in to development policies.
- maintain sustained growth in productivity and gainful employment, and
- attain international competitiveness.

In short the emphasis is on continuity and change.

2.3. Introduction to Wage Policy and Structure:

Wages are regarded as the chief determinants of the levels of living of the people. As individual wages varies in proportion to the quantity & quality of work performed it also shows the progress of the level of living. The wage structure consists of basic wage - (determined by worker's qualification and job content) and wage-premiums (incentives) determined by the degree of success in increasing production and reducing costs.

Wage structure is an instrument for raising labour productivity, wage differentials like social benefits, social consumption, prevailing prices of consumer goods, un-productive investments etc., provide necessary incentives for controlling labour markets. Based on cost of living; labour productivity and labour supply the wage differentials have to be found. These wage differentials after certain point become irrational in providing incentives (18).

Wages in socialist concepts are related to job, skill, training and productivity.
2.3.1 Occupational wage differentials

There are many structures of wage differentials: by occupation, by industry, by location, by race and by sex. In order to standardise these differences in the wage structure they are classified.

The differences in pay between groups are classified according to different structures.

Occupational differentials are perhaps the most basic of all, since they reflect differences among workers in different levels and kinds of skill and in the conditions of work. The forces that determine the level of wages in an occupation changes substantially depending on the length of the period, demand and supply(19).

- economic viability - to survive & grow in the economy.
- An analysis on the current problems for poor economic performance is discussed.
- What factors have to be considered to support these sick composite mills (20).

Even though wage structure in any large scale industry is a complex entity we can divide it into the following seven categories:

2.3.2 Seven aspects of wages structure:

1. Composition of wages: The pay packet of a textile worker comprises of two major elements - the basic wage & the dearness Allowance. In addition, a worker is entitled to a statutory bonus & several fringe benefits.
2. **Stratification**: The complex textile industry engages innumerous categories of workers with widely different skills. These together give rise to a large number of occupations and a somewhat lesser number of wage levels.

3. **Standardisation**: Standardisation of job content means essentially giving the same duties of same number of machines/workload to all workers in a given occupation. Category by name/title Standardisation generally exists within the mill but not within a region or between regions.

4. **Internal equity**: This not only means wages for workers performing the same jobs within a mill but also stands for appropriate wage differentials between different jobs within a mill. Several factors to be considered here are skill, effort, responsibility, etc.

Textile manufacture is a major industry of India. Further, it is highly employment intensive.

5. **External equity**: This stands for equality of wages for the same job between mills within a region & equivalent wages between regions, Commensurate with cost of living etc.,

6. **Fair wages**: Fair wages, for the purpose of this classification is meant to refer to the amount of total earnings to the worker in relation to the environment. Fair wage should ensure not only the minimum wage needed for subsistence but should also provide adequate returns for the work done.

7. **Linkage with performance**: The previous six aspects of wage structure refer to the levels of earnings of workers. The wage of each worker should reflect his level of performance as compared with other workers in his category within a mill. A good wage system needs to ensure that a better performer gets correspondingly higher earning than his poor performing counterpart in the same occupation (21).
2.3.3 **Wage differentials at the plant level**

Managers are increasingly realizing the need for evolving a wage structure which combines elements of both efficiency and equity. But they are constrained by the technological situation, union behaviour, labour market processes, product market conditions and Government regulations.

The internal wage structure according to Dunlop (23) may be seen as consisting of job clusters, which is a stable group of job classification of work assignment, having one or more key rates. These key rates evolve an internal wage structure.

**Job evaluation**

The job evaluation techniques are not widely applied in India as in advanced countries. There are, in general, four types of job evaluation systems: 1. Ranking method 2. Job classification method 3. Factor comparison method 4. Point method.

The first two methods are suitable for small organisations. The last two are suitable for large organisation. Many organisations find the point rating system much easier to implement. The implementation of job evaluation plan needs active participation of the union and communication systems in an organisation.

**Systems of wage payment**

Traditionally two systems of wage payment prevail in India, Time rate payment and piece-rate system (24). Of the various industries, textiles had the highest being (40%) while engineering had the lowest (3.8%) percentage of workers employed on piece-rate. Apart from piece-rate system, other forms of incentives schemes have also been adopted in some units in organised industries.
Methods of wage fixation

The managerial prerogative of setting terms and conditions of employment is increasingly being limited due to either the emergence of trade unions or active intervention by the state. As a result of growth of trade unionism, collective bargaining has become an important method of wage fixation, even though state intervention, adjudication machinery and wage boards retain their primacy in the wage system (25).

1) Adjudication

The system of adjudication has led to the enunciation of important principles of wage determination in India. The Government's labour policy also supports compulsory adjudication system. While adjudication has helped in evolving socially desirable concepts of wage determination, it cannot be said that it has been able to arrive at just solutions to problems of industrial relations. The argument that the trade unions are still weak to undertake successful collective bargaining is belied by the emergence of trade unions in important sectors of the economy. Lack of Government enthusiasm to encourage collective bargaining might have weakened trade unionism in the country (26).

2) Wage boards

The concept of wage board was first enunciated by the fair wages committee. It was commended by the First Five Year Plan. The Second plan emphasized the need for a separate machinery and later in 1957, the Central Government set up the first wage board for the cotton textile industry (27). The 15th Indian Labour conference reiterated that wage boards are the appropriate machinery for wage rate fixation. Since 1957, a total of 23 wage boards have been set up for all major industries.
The Sinha study (28) on wage board reports revealed that the need based minimum wage differed widely from one board to another, the studies to determine profitability of an industry differed widely in measures and methods, the boards laid undue emphasis on the needs for accelerating capital formation to promote modernisation. The study also revealed certain implications of wage structures and industrial relations. An important implication of, wage board system was the growth of industry level federations of both employers and unions. But the wage board method of wage fixation clearly failed to evolve a consistent set of guidelines to be followed at plant level.

2.4. Collective Bargaining in Indian Industry

Irrespective of the Government's views towards wage problems, collective bargaining as a method of wage fixation has emerged in major industries (29). The EFI study also revealed that industry level agreements were concluded in 'Jute, textile, engineering and tea plantations in West Bengal, Cotton Textile in Bombay, Gujarat and Tamil Nadu, and plantation in Tamil Nadu and Karnataka States.

A review of collective agreements undertaken by the Employers Federation of India shows that the collective bargaining system had been adopted in almost all industries.

This Review focuses not only on productivity measurements more scientifically but also identifying the crucial variable factors influencing it. Also the sickness prevailing in textile industry more particularly due to lack of scientific analysis and approach reveals the scope for a detailed study.

Similarly the wage structure, job categorisation, wage differentials specify the need for standardisation. Linking wages with performance and arriving at an equity among mills highlight the scope and importance of scientific job evaluation (30).
2.4.1 Collective bargaining in Indian industry

G P Sinha (31) classifies collective bargaining agreements into i) agreements and 2) settlements, while agreements are purely voluntary and bipartite, and cannot be enforced on all the workers, settlements are either registered or are brought about during conciliation proceedings conducted by a conciliation officer under section 12 (3) of Industrial disputes Act; hence, they are enforceable on all the workers with or without the involvement of a court of law. The purely bipartite agreements do not have a legally binding character. They have not acquired a status of a civil contract. The main sanction behind such agreements continues to be the bargaining strength of the workers.

2.4.2 Employees Federation of India Survey - 1962

The survey on collective bargaining identified agreements into three types i) voluntary ii) both voluntariness and compulsion iii) legal in nature. A consent award resembles a settlement in its structure. The settlements that constitute the second type of agreement, in fact, include the agreements voluntarily reached and registered as settlement for the benefits under section 18 (1) of the Industrial disputes act. The practice of converting agreements into settlements is quite widespread in the industry. Hence the collective agreement may be classified into four types i) agreement (purely voluntary and bipartite) ii) registered settlements iii) agreements converted into settlements and iv) consent awards.

According to the survey conducted by Employees Federation of India in 1962, voluntary agreements constitute 39.5 percent of the total agreements, whereas the majority of the agreements - 57 percent - are in the nature of settlements. Consent award amount to a little less than 4 percent (32) & (33).
2.4.3. **Subject matters of agreements and settlements**

There seems to be no change in collective bargaining in terms of the subject matters negotiated and agreed. Wages, DA and other forms of payment continue to be most important issues. Thus during the period of 1954 - 61, in as much as 74 percent of the agreements the wages issue figured, while 55 percent concerned with the issue of DA. Bonus was an equally important subject matter of negotiation - 37 percent of agreements carried clauses on bonus. The non-monetary issues covered by the agreements are classification, work study, conditions of employment (other than wages and bonus) recruitment, promotion and seniority, retirement, age, transfer of employees, hours of work, various types of leave benefits, paid holidays, acting allowances, retrenchment and lay-off, contract-labour, rationalisation of fringe benefits such as gratuity, provident fund, joint consultation through committee, settlement of disputes through arbitration, grievance machinery etc.

Similarly, during the period 1961-69, wages formed the subject matter of 79.82 percent of the agreements, out of which 21.82 percent of them exclusively dealt with wages.

As in fifties and sixties, the collective agreement during the seventies covered a wide range of subjects. Wages and wage related issues continued to predominate the negotiation. Nearly two thirds of the agreements signed during the period in both the sectors - 65.97 percent in the private sector and 64.87 percent in the public sector - dealt with wages and salary.

If we put together all the agreement dealing with the different aspects of wages that 82.41 percent in the public sector and 88.87 percent in the private sector or 84.11 percent of all the agreements signed during the period 1977-81 are concerned with wages and related issues (34).
In the private sector industries, the bulk of the agreements signed during the period 1954-61 were from the cotton textiles (29.2 percent) chemicals and allied industries (14.03 percent), petroleum refining and distribution (12.28 percent), Electrical and other machinery (11.4 percent) and sugar industry (10.53 percent) (35).

2.5. Conceptual Frame Work

Productivity is defined as the ratio of output to input - i.e Productivity = output / input. The prime factors of productivity are man, machine and materials.

2.5.1 Labour Productivity

Labour productivity may be defined as 'output per unit of time' or 'output per labour hour'. The index most widely used for measuring productivity in a spinning mill is the number of operative hours required to produce 100 kg. of yarn, which is referred to as HOK. Thus,

\[
HOK = \frac{\text{Operative hours} \times 100}{\text{Production of yarn in kg}} = \frac{\'O' \times 100}{P_c}
\]

where 'O' is the operating hours engaged by the mill in different departments, P_c is the production of yarn in kg of count 'c' in different departments.

HOK, however, has certain limitations as it is affected by factors other than labour productivity. In the spinning department, for example, HOK value would change with the counts produced. The production per spindle, however, decreases more than in proportion to the increase in work assignment, with the result that the HOK tends to be higher in finer counts. As such HOK alone will not provide a
meaningful basis for a mill to compare its productivity with that of its competitors or its own performance from time to time.

2.5.2 Method of Comparison

In order to eliminate the effect of the range of counts spun, the HOK is adjusted to a common count of 40s. The adjusted HOK, \( H \), is given by

\[
H = \frac{\sum P_c A_c}{O' \times 100}
\]

Where \( A_c \) is the ratio of the HOK of count \('C'\) to the HOK of the count to which it is adjusted.

The advantage of this method is that it enables valid comparison of productivity to be made irrespective of the counts spun and further it is not necessary to record the operative hours for different counts separately.

Also, the comparison of productivity is made against a standard mill which uses modern machinery, adopts high work assignments and obtains high production rates and which also has the same proportion of production in different counts as the given mill. The labour productivity of a mill is defined as

\[
\text{Productivity} = \frac{\text{Standard HOK}}{\text{Actual HOK}} \times 100 \quad \ldots \quad 3
\]

and it also gives the closeness of approach of the mills productivity to the standard.

The HOK for the different departments of a mill can be worked out on the same lines using the yarn production as the base and the conversion factor worked out separately for each department. For a given count, the total HOK is the sum of the HOK's in the individual departments. The HOK for a given count is determined by the
number of operative hours engaged per 1000 spindle hours (OHS) and the production per spindle per shift (Pin gms per 8 hours), which are related as follows.

\[
\frac{\text{OHS} \times 800}{\text{HOK}} = \frac{800}{P}
\]

The production per spindle (P) as well as the number of operatives per 1000 spindles (OHS) differ very widely between counts and for any inter and intra mill comparisons, it is necessary to adjust them to a common count.

The adjusted P is given by

\[
\text{Adj P} = \frac{1000 \ E \ Pc \ dc}{\hat{e} \ Sc}
\]

- where dc is the ratio of production per spindle per shift of 40s count to that of count C. and SC is the number of spindle shifts run to produce Pc kg of yarn.

Similarly, the need for adjusting the OHS also to a common count arises because fewer operatives are engaged in finer counts than in coarser counts due to higher work assignments, fewer spindle doffs in ring frames and fewer preparatory machines needed to be worked in these counts.

The adjusted OHS is given by:

\[
\text{Adj OHS} = \frac{O' \times 1000}{\hat{e} \ be \ Sc}
\]

where be is the ratio of OHS for count 'C' to that of 40s.
Since productivity of each mill varies as they use different techniques it is essential to evolve indices of productivity that would be a measure of the increase in labour productivity, the increase being effected in either of the following ways:

i) Using the existing equipment to the best advantage

ii) Imposing better conditions, either by renovation or replacement.

2.5.3 **Productivity Index**

Productivity index is a measure of the closeness of approach to actual labour productivity to a standard. It is calculated by expressing the standard HOK as a percentage of the actual HOK.

Thus, productivity Index = \[
\frac{\text{Standard HOK}}{\text{Actual HOK}} \times 100
\]

The standard HOK is based on the level of productivity prevailing in the top 10% of the mills in the industry, which thus corresponds to a modern mill with high work assignments and good working condition.

2.5.4 **Machine Productivity**:

Machine productivity may be defined as the output per machine hour. Machine productivity in a spinning mill generally refers to the ring frame productivity as ring frames constitute the final stage of yarn formation. This ring frame productivity and profitability are highly associated and it is an important parameter that determines the profitability of a mill.
Ring frame machine productivity (MPI) is determined by machine utilisation and duration of working on the one hand and the production per spindle on the other.

2.5.5 Material Productivity

It is defined as the amount of the output realised as against the amount of the input consumed.

The relative contributions of various factors - namely manpower, machines, materials, power etc., - to total productivity will be different in different industrial situation. It depends on a number of considerations such as the level of technological development, the relative cost of labour and equipment, the cheapness or otherwise to the various materials available, and so on. In countries with a high standard of living where wage levels are high, it is oriented to economize to the maximum possible extent on manpower and introduce automation as far as possible. In such situations, labour productivity would be high, and greater use would be made of automatic equipment, power etc., But the total cost of production would not be high. Where wage levels are fairly low and machinery is expensive or difficult to obtain, or where labour is not sufficiently well trained in the use of complicated expensive equipment, the industry will naturally be labour intensive and, consequently, labour productivity will be low. But the cost of production need not be low, because, in spite of low wages, labour cost will be high and the advantages of mass production methods cannot be used. As wages begin to rise, it is imperative that the input of labour should be reduced relative to the other factors by greater and greater level of modernisation. This is even more important in the case of industries competing in international markets. They can reduce the cost of production only through higher productivity and improved quality (36).
Increased productivity does not mean rationalisation of labour. It means economy and efficiency. In every aspect of productive process, Labour cost is only a minor part of total cost of production. Many other areas of industrial activity like use of raw materials, higher machine utilisation, product standardisation, market research have to be controlled. So high rate of productivity is the outcome of effective utilisation of resources through scientific methods and techniques. The role of management is extremely important in achieving this objective than that of their employees.

- Modernisation - the pace as well as level of it - will lead to better productivity and better quality.

- Training - is another aspect which cannot be disregarded while increasing productivity.

- Good industrial relations will also increase productivity. Assurance and independence as well as self respect will strengthen the labour - management relations for higher productivity achievements.

- Increase in productivity should be to the extent to offset the rise in wages relative of other items of cost.

- Compared to several other factors productivity is the key determinant in the production economics and profits of a mill.

- Analysis of profit and loss figures of over 100 spinning mills showed a very high possitive correlation between labour and machine productivity on the one hand and profitability on the other, the multiple correlation coefficient being of the order of 0.9. In other words, about 80% of the variation in profits between mills is due to variation in productivity alone.
It is true that the fortunes of the industry, particularly textiles, are largely determined by the periodic booms and recessions. But even during acute recessionary conditions about 25% of the mills earn very good profits. The common feature of all these mills is found to be the very high levels of labour and machine productivity.

In the long run, the profitability of a unit is the ability of the management to bring down the real cost of production by obtaining a high level of labour and machine productivity.

In countries where wage levels, standard of living are high it is necessary to economise on manpower and introduce automation. In such situation labour productivity will be high. As wages begin to rise, it becomes more and more imperative that the input of labour should be reduced relative to other factors by introducing higher level of automation. So, industries must work to reduce the cost of production through higher productivity and improved quality so as to compete in a challenging global market.

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