In this chapter, utmost care has been taken in briefing the outstanding literatures connected with the subject. In literature, many studies have been reported indicating measures of and explanations for variation in labour and Total Factor Productivity (TFP) across industries. Studies are also found particularly in the subject of labour productivity. However, a detailed study on role of incentive in labour productivity based on the Kerala industrial sector was not found. Majority of the researchers agree that there is relation between reward and labour productivity. But most of the studies were not able to explain an optimum level of reward payment system in various situations.

Wages is the consideration for ‘labour’ put in by a ‘labourer’, and this practise was in existence from time immemorial. The first book in the Holy Bible Genesis has reference regarding the payment of wages. The Genesis 29 verse 15 says that, “just because we are relatives is no reason for you to work for me without pay”.

In the Holy Bible, the Gospel according to St. Matthew 20:1-2 verses say ‘For the kingdom of heaven is like a landowner who went out in early morning to hire men to work in his vineyard. He agreed to pay them a denarius for the day and sent them into his vineyard’. Again in Deuteronomy 24:14 and 15 verses say ‘Never oppress a poor hired man, whether a fellow Israelite or a foreigner living in your
town. Pay him his wage each day before sunset for since he is poor he needs it right away...

Howard E. Houston (1954) conducted a study on productivity.¹ The study reveals that productivity improvements really can be implemented only at the level of individual firms or organizations. He pointed out the importance of an organised national efficiency-promotion programme to take advantage of the better methods and ideas. He opined that such national programmes do not guarantee increase in productivity. It is up to the individuals in industry to awaken to this opportunity and to progress continually in improving the performance of their various functions.

H.P. Dasture (1959) conducted a study on productivity and Industrial medicine.² The study reveals that the cause for lower levels of productivity is the failure to solve the growing problem of industrial ill-health. He opined that modern industry has social and moral aspects, besides economic and technological. The integration of all these aspects into one whole unit of production is necessary for increased productivity. It is also viewed that most of the people have 'childish minds in adult bodies', and to grow mentally, everyone need to be handled with care and understanding.

The Editorial of the Productivity Journal, published by the National Productivity Council Vol.1, No.2, December 1959- January 1960, it was mentioned that the early experiments in productivity revealed that, to the employer productivity means lower and lower costs. To the employee it means harder and harder work; and, therefore, less and less real wage for work of equal intensity. But the later studies reveal that, for increased productivity the first essential thing is to
treat a human being as a human being to make him feel that he is a human with all the rights and privileges. It is also mentioned that, a better treated worker, a better educated worker and a more comfortably placed worker will be productive worker. Finally, it was concluded that productivity does not necessarily mean harder work; it may actually mean lesser pleasanter work done in surroundings not only of comfort but of group solidarity and fellow feeling.

M.C. Mitter (1960) conducted a study on incentives and productivity. The study reveals that the primary purpose of an incentive system is to create a ‘will to produce more’. He opined that the first requirement for the success of a system of incentives is that it should have the co-operation of workers which pre-supposes the existence of good industrial relations and mutual confidence. If incentives are to be provided for increasing productivity, the latter must be accurately measured and recorded. The exact task of the worker and the quality of the product he is to turn out must be defined in advance. He points out that the incentives must be linked to productivity. It is also revealed that the substantial contribution that a properly designed incentive scheme makes to the increasing of productivity, reduction of cost of production, increased earnings for workers, requirement of less direct supervision and effective use of time and available resources. Finally, it was concluded that higher money rewards are, of course, necessary and they will come alongside higher productivity.

R.B. Billimoria (1963) conducted a study regarding productivity and the Indian worker. The study reveals that for higher productivity, ‘induction’ is very important. The supervisor concerned emphasises the value of factors governing
productivity such as, optimum utilisation of physical and mental energy, attention to correct work processes and cost consciousness. The worker should also inform of his conditions of service and amenities and facilities available to him; also covered are incentive schemes and maximum bonuses that can be earned.

He pointed out the importance of on-the-job training by senior colleagues and by supervisors. Merely training a worker will not increase productivity. Sufficient incentives should be assured from the gains of higher productivity. He expressed that in the Indian condition it is proved that the incentive schemes are worth enough in increasing production and productivity. The surplus workers in one trade have to be re-trained and absorbed in other designations. He called it as 'rationalisation without tears'.

In his view, for increased productivity increased association of workers with management is essential. Though the office workers are not directly connected with production, their co-operation is inevitable. So the fruit of the increased productivity should be shared to them also. Another view is that worker-productivity alone not enough, because productivity depends on capital, management and labour and only the most effective use of all three will ensure positive progress. He also pointed out that there should be a climate for higher productivity. Finally, it was concluded that there should be a productivity movement to eliminate waste of man-power and material.

Donald Clark Hodges (1963), in his study reveals the traditional philosophy of labour and also the futuristic philosophy of labour. In his opinion, work is an activity performed not for the pleasure of acting, but for the sake of a result beyond
the action, such that we would be unwilling to act unless we expected the result to follow. Another philosophical conception is that, although some modes of work, especially professional, are intrinsically rewarding and worthy of pursuit without remuneration, the need to survive compels most individuals to labour for a living. He opined that in the early days labour was not meant to be self-fulfilling but to provide self-fulfilment for others. The more he put into his products, the less he had left for himself; the more energy expended in labour the poorer he became as a person. The first Industrial Revolution heralded the beginning of the end of labour under this old dispensation. By the passing of various labour legislations, labourer’s standard of living has been increased; they got vacations with pay, greater opportunities for leisure, social security as a guaranteed annual wage. But after that a serious labour problem was seen that, the tendency of powerful trade unions to demand and obtain wage increases in excess of labour productivity, thereby contributing to inflation. The same can be seen in the present situation also.

In his modernistic perspective, he pointed out that the labourer’s wages should be increased in proportion to their greater value to society. Modern technology has the power to alter the conditions of labourers and most labourers should steadily but slowly improve with increasing productivity. Finally, it was also concluded that, traditionalists also believe in a gradual improvement in the conditions of labour, in the form of better working conditions and a higher standard of living.

A. Fonseca (1963) conducted a study to examine the relationship between productivity and wages. The study reveals that the increase in productivity is a
measure of the increase in labour efficiency. He pointed out that the productivity must be measured in physical volume terms, and the ratio of gross output to units of labour input. He opined that a somewhat striking relationship arises when the money wages and productivity index series are statistically correlated, although in this instance the two variables have not been correlated directly with each other but together with the two other variables, viz, the degree of unionization and the cost of living. He also developed a linear equation by the method of least squares, 

\[ x_1 = 0.234x_2 + 0.874x_3 + 2.166x_4 \]

where, \( x_1 \) = money wages, \( x_2 \) = degree of unionization, \( x_3 \) = cost of living, and \( x_4 \) = productivity. The equation reveals that every one percent increase in the unionization, a rise of 0.234% would take place in money wages. In a similar way, for every one percent increase in the cost of living, money wages will rise by 0.874 percent and for every one percent increase in productivity, money wages will raise by 2.166 percent. Finally, it was concluded that when productivity fell, though money wages may have raised due to the phenomenal rise in the cost of living, real wages fell almost in unison with productivity, and rose as productivity rose. It is also concluded that when an incentive scheme is started for people living at a very low standard or life, there will be a spurt in productivity leading to a rapid increase in their earnings.

George V Haythorne (1963) conducted a study to examine what can employers and Government do to assist workers in improving productivity and what can workers themselves do. In his view the productivity improvement can best take place in the context of economic growth. The study reveals that many workers face the problems of change and insecurity. This can be overcome by training and re-
training programmes and adequate provision for workers to move to other work with in the same industry. Such measures should be initiated by the employers and Government. He opined that the productivity can only be achieved through effective teamwork and the fruits of increased productivity should be shared fairly among employers, workers and the public generally. He is of the view that the employers and Governments through recognizing the importance of collective action can assist both the position of the individual worker and the promotion of improved productivity. He pointed out the importance of some special Government incentive to encourage the employers is essential for increased productivity. He also stressed the importance of raising a job security fund by the employers. When there is assurance in advance that workers will receive a reasonable measure of protection, they can be expected to adopt a different attitude towards productivity improvements. Finally, it was concluded that the identification of the interests of workers and of their unions with the wider interests of the larger communities of which they are a part is helpful in bringing about greater labour-management-Government co-operation which in turn, helps to ensure increased economic and social growth.

R.S.Gupta (1963), in his article ‘Labour productivity-its significance’, reveals that the maximum utilisation of materials and machines is dependent on the skill and active willingness of the operatives. The increasing productivity is the joint responsibility of management and labour. Both desire to have maximum returns from industry in the form of profits and wages. In order to achieve this desire, increased productivity is essential. For increased productivity labour-
management co-operation is inevitable. He is of the view that the labour is responsible to do a fair day's work for a fair day's pay. They must ensure minimum wastage, better quality of products and full use of machines and equipments. They should be ready to accept the changes leading to higher productivity, without affecting their interest. He opined that for increasing productivity, appointment of plant level productivity committee which will foster the co-operation between the management and labour is advisable. Finally, it was also concluded that increase in productivity means, increase in savings. Part of these savings can be employed to the industry and part of these savings can be distributed among workers and consumers. In his view, productivity starts a chain reaction: higher the productivity the higher will be the standard of living.

Harry F. Evarts (1963) conducted a study on production technology and worker productivity. The study reveals that two important factors such as
(1) physical equipments and
(2) wants and needs of workers which significantly affect workforce productivity.

He describes the importance of technology and worker reaction to technology. He agrees with the theory of Prof. Douglas Mc Gregor's that man is a wanting animal and it affects his productivity also. He opined that one of the most important factors in workforce productivity is the production technology. Consideration of the workers who operate the equipment is at most, incidental. So the management must take action to meliorate production technology and satisfy worker wants and desires. Finally, it was concluded that, production technology is
an awesome foe, but its deleterious effects on workforce productivity can be limited by managers who properly gauge the needs and wants of the workforce and take action to satisfy those wants which have been frustrated by technology.

Kalathil A Zachariah (1963), in his article ‘guidelines o Productivity’, reveals that poor productivity is particularly due to poor planning and poor organisation.\textsuperscript{10} It is the function of the management to use the manpower properly. He opined that, no matter how far and how fast technology progresses, labour is absolutely indispensable and rise of fall in labour productivity is the result of entrepreneurial action. He is of the view that the low productivity of the industrial system is due to lack of inter-factorial harmony, making team work nearly impossible. When the productivity of labour improves, the capacity of industry to pay will also increase. He opined that ‘of all the people in this country, the worker should be the person most enthusiastic about productivity; for productivity holds the key to the prosperity of the working class”. Finally, it was also concluded that the entrepreneurial responsibility for productivity is supreme. The sad conditions of the labour movement, the bad entrepreneurial practices and state policies have together produced a situation of low productivity.

Michael John (1963) in his study pointed out that productivity has two contributing side, one direct and the other indirect.\textsuperscript{11} The direct side consists of efforts for increased production through technological improvements in machines and working methods, lightening of work loads, economising etc., by good and systematic planning of work, technical ability and managerial (administrative) acumen: all of these are comes under management’s activities. The indirect aspect
is the elimination of wastage in labour, materials etc. These wastages result from bad planning of work, unhealthy labour policy, bad and inadequate maintenance of machinery, accidents, strikes, slowdowns, lockouts, etc. He stressed the importance of a labour policy to enable association of the workers in management at every stage. He criticised the attitude of some managements that treating the labour as a commodity. Finally it was concluded that in the democratic industrial world the management, workers and trade union organisation having no conflicting interests instead they are the travellers of the same path with an identical goal, each ones activities are supplementary and complementary.

K.S. Parameswaran (1963) conducted a study on productivity pointed out that it is of the common belief that low productivity is due to low efficiency of the workers. But at least in six out of ten cases, lapses have been due to ineffective and inadequate work-preparations. Any job can be done only as good as it has been planned. Even where the efforts of the workers are satisfactory, the productivity can still be lower due to bad planning such as over investment, inharmonious plant capacity, idle facilities, inefficient layout etc., resulting in wastage of the various factors of production. Finally, it was concluded that this can only be achieved by a two-way assault, that is, by educating, training and rewarding the worker with proper incentives and by ensuring that proper and timely attention is given to the very many important aspects involved in the planning or work-preparation in its very broad sense.

Quader Nowaz (1963) conducted a study about productivity and labour. The study reveals that for increased productivity the employer should first ensure
higher wages, better terms of employment and security of employment; or make it clear to the workers that these good things can only follow—cannot precede—higher productivity. As far as old industries are concerned, it is not possible to arrange so that either productivity or wage increase should precede the other. Both will have to increase simultaneously and wages at a slightly higher speed. He opined that better productivity can't be obtained only by trying to get the best from labour. The other conditions such as adequate training facilities to workmen, properly trained supervisory staff, proper maintenance of machinery and regular supply of raw materials etc., must be there. Finally, it was concluded that the workers should be educated not only of their rights but also of their due obligations.

Russell M Currie (1963) in his study expressed the importance of proper rewards to the labourers. He is of the view that money alone will never ensure confidence between men and management. He pointed out that the common understanding that work study is '10 percent technical and 90 percent psychological'. So he viewed that to stimulate the human factor, incentive scheme is essential. It will ensure the increase of productivity growth rapidly as possible. Every worker must know about the opportunities for personal advancement and monetary reward. He opined that the individual betterment must be based as far as possible, on personal merit, and on the contribution of the individual to the collective purpose. In his view, a human being has two prime motivations. One is the hope of gaining something; the other is the fear of losing something. On the 'gain side', a man's hopes and desires may be summarised in one word; self-respect, which is the true purpose of incentives in industry. He opined that in order
to get maximum effectiveness, each incentive scheme must be tailor-made for a particular department and indeed for a particular job. He enlisted three main purposes of financial incentive schemes.

a) The improvement of the average rate of working and effectiveness of employees.

b) The improvement of methods of working.

c) The improvement of co-operation and sense of common interest.

In his view, in order to achieve the third purpose above direct individual incentive schemes may not have any influence. He is also opined that there is no single form of incentive scheme for all situations. A combination of different schemes should be used in different situations. Finally, it was concluded that in order to get co-operation and common interest among the workers, some form of profit sharing arrangement is effective.

K.C. Sekharan (1963) conducted a study to examine the dynamics of human personality in a manner which has a distinct bearing on the dynamics of productivity.\(^{15}\) The study reveals that especially in large industries, in order to get its optimum level of productivity, the workers have to be led appropriately by managers who combine a balanced personality with imagination and drive. He opined that persons with high personality are highly productive.

S.N. Sinha (1963) in his study pointed out that for increased productivity Induction Courses should be arranged for the workers.\(^{16}\) He also enlisted a four point plan for in-plant Induction.

i) Visit to the plant and meet appropriate personnel

ii) First-hand information through meeting should be provided
iii) Introduction to the department and

iv) Follow-up Induction.

Finally, it was concluded that attitude-building among the workers is one of the important tool for higher productivity.

Subratesh Ghosh (1963) in his study on labour and productivity, analysed various factors which affect labour productivity. He classified it under two groups; firstly, economic and institutional and secondly, psychological. Among the first group the most important ones are the size of the market, the level of economic activity, mobility of resources, quality and availability of fixed capital goods and also of materials and fuels, education and training of workers and the taxation policy of the Government. In his view among the two groups, in a movement for improving labour productivity the relative significance of the first group is lower than the psychological factors. He pointed out that for increased labour productivity, one psychological factor is very important; whether the workers sincerely believe in the possibilities of adequately sharing in the gains of productivity improvements. For this, suitable provision must be made to link up the changes in wage-rates with changes in productivity. In his opinion instead of making the rate of increase in workers earnings equal to the rate of increase in productivity, it should be some what less than the latter, the balance being devoted to capital formation. Another notable point is that whether to link up money-wages with productivity increases in individual industries or that of the average increase in productivity of the economy as a whole. He believed that though each of these alternatives has merits as well as shortcomings, comparatively the first alternative is
superior. Finally, it was concluded that for raising labour productivity steps should be taken to remove fears of retrenchment from the minds of workers.

Wilfried Schaeffer (1963) conducted a study about productivity and labour. The study reveals that the first step that an enterprise should do for increased productivity is to train and to educate the worker. He pointed out that there should be a minimum wage level in relation to the price level which includes enough food, drink, clothing, housing etc., This will be the first step to make sure the increase of productivity. There should be a wage differentiation based on different grades of skill and experience in work. Regarding wage incentive it should not only be applied to the qualification but as well to the quantity which is produced by a worker or a small group of workers. Another notable point is that, sometimes more production may get without paying an incentive. But it will not go for a longtime. It is also viewed that the performance capacity changes with knowledge, skill and age. So in fixing an incentive average performance should only need to consider. Finally, it was concluded that the worker would agree to increase productivity, if the working condition and his wage are satisfactory.

National Institute for Training in Industrial Engineering (NITIE) (1971) conducted a study of 16 industrial units in Bombay. The study clearly brought out the fact that it was not mere wages but high wages through wage incentives that had resulted in higher efficiency among worker. While a relationship between wage rates (or levels) and productivity may imply a casual relationship in either direction, the relationship of methods of payment with productivity and effectiveness of wage incentive plans in Indian Industry.
B.P. Guba and M.M. Nampoothiry (1989) conducted a study on the national perspective of wage-productivity link. The study reveals that in the case of the employees in the unorganised sector, ‘wage-price’ link is more important than ‘wage-productivity’ link. Finally, it was concluded that though bargaining for higher wages may be more common at industry and establishment levels than at the national level, the national perspective discernible through the statistics of prices, poverty and unemployment should form the basis of any formula for linking wages with productivity. The aim should be to transfer a part of the gain in productivity to employees on the basis of their performance in such a way as to ensure further increase in productivity. It is also mentioned that there should be uniform concepts, definitions and methodology for the computation of productivity both for individual industries and for the whole economy.

K.V. Ramakrishnan (1989) conducted a study to analyse the link between wages and productivity in public sector enterprises. The study reveals that a survey of capacity utilization in 175 enterprises during 1986-87 indicated that 51% achieved capacity utilisation above 75%, 32% between 50% to 75% and 17% below 50%. He opined that not only the public sector enterprises, but the Government departments also, wage increase is not based on productivity. In public sector enterprises, the workers get attendance bonus just for attending office. They get paid whether they produce anything or not. Finally, it was concluded that in a situation where wages are linked to productivity there can’t be separate incentive scheme. It is also opined that one way to enthuse workers to increase production in
physical terms is to distribute a percentage of increase in profits related to increase in production.

C.V.C Rao (1989) in his article ‘Productivity Technology and Industrial Relations in the Textile Industry’ pointed out that a sizeable number of industrial disputes are related to wages and wage structure.

Shozo Inouye (1989) in his effort to link wages with productivity reveals that there are two principal factors that decide productivity of a firm: (1) The organization’s technology and (2) The job performance of its employees. Employees’ performance is the product of ability and motivation, that is, performance = Ability x Motivation. He opined that for the full utilisation ability and high motivation proper reward system is essential. In order to connect the wages with productivity he classified the pay systems into three groups, such as, piece rate, pay-by-job and pay-for-knowledge.

Ashok K. Aggarwal and D. Durga Prasad (1992) conducted a study to explore productivity of labour from the view point of labour markets. By using two different measures of labour productivity, such as Gross Value added or output per person and the contribution of labour per rupee of wages paid, it has been argued that both measures should give similar results if labour market were perfect. It is also revealed that the output per worker and output per rupee of wages paid is much closer in the larger industries as compared to the smaller industries. It is also pointed out that the wage growth has kept pace with growth in labour productivity. Another finding of the study was that for high public sector intensive industries, the public sector industries show higher coefficients. In the case of high private sector
intensity, there is no clear-cut trend as the strength of relationship keeps shifting across sectors, whereas, in the case of both sectors having almost equal intensity, the coefficients for the public sector are higher for all the years.

Subratesh Ghosh (1992) in his study reveals that the Quality of Working Life (QWL) is an important factor that affects motivation to work. It will ultimately affect the productivity and the quality of the product.24

Dr. K.P. Muraleedharan (1994),25 conducted a study to examine the relationship between the labour productivity and the antecedents of workers i.e., whether the productivity of employees with the same Socio-economic background is same or not. The study reveals that the aggregate productivity of the employees is neither very high nor very low. Sex wise, man is superior to woman in productivity and the marital status does have some correspondence with the labour productivity. He opined that, no close relation exist between the religion to which the worker belongs and his productivity. As per the study, job satisfaction and the satisfaction with the work environment do have significant relation with the productivity of workers. Finally, it was also concluded that economic conditions of the workers have no marked impact of productivity.

OM Prakash Brahmachary (1995) in his book reveals that the three elements that influence productivity are capital, technology and people.26 All of these are vital in productivity. He pointed out that the failure to recognise and motivate human resources has been the main cause of India's failure to achieve higher level of productivity. He is of the view that the level of modernisation and technology in the unit, worker's participation and management relationship with labour affect the
productivity. According to him the most important cause of low productivity is the lack of managerial skill.

B.H. Walley (1995) in his study on labour productivity reveals that a useful measurement of productivity is the standard cost of output as a proportion of actual wages paid. The standard cost includes all costs which should have been incurred in making a product. Dividing this figure by the actual wages which have been paid will provide a good indication of labour productivity. He opined that a great danger with incentives is that they can constrain production at levels well below standard capacity.

Martin Fisher (1996) in his book reveals that people only work harder if employer offers them more money. It is also essential for attracting and retaining high quality people. He opined that pay for performance schemes can be better at de-motivating than motivating people. People will only be motivated by worthwhile rewards which they expect to get. He is of the view that the non-financial rewards are long-lasting than the financial incentives. For some people, long-term security or job satisfaction may be more important than financial rewards. Although, money is the key motivator for many people but unless the pay system is fair and carefully managed (felt-fair principle) it can be a de-motivating factor. In any case, its impact will be considerably re-inforced if other non-financial motivators are used. Finally, it was concluded that in an organisation some people will be self motivated while others may not be. People in the former category need not to be motivated by management but they should still be rewarded in line with their contribution. Those
in the latter category will need encouragement with incentives and rewards which are focused on their particular needs.

A.S. Kohli and S.R. Sharma (1997) opined that labour welfare facilities play vital role in promoting labour productivity. He is of the view that there is close association between labour efficiency and welfare.

S.N. Chary (1998) in his book reveals that the objective of incentive wage payment is to improve the productivity and this is expected to be achieved by relating increased wage payment with increased productivity. He broadly classified the incentive wage schemes into Individual, Group and Plant-wide/company wide incentive schemes. Finally, it was concluded that financial incentive's are, only one of the many ways of enhancing sagging employee productivity.

KSPC News, Quarterly publication of the Kerala State Productivity Council (Jan-Mar-1999) reveals that labour productivity is a useful indicator of the prospective returns or yield that can be obtained from each unit of labour employed. It is also revealed that labour productivity is the appropriate measure of productivity when the concern is with economic welfare. Finally, it was concluded that Total Factor Productivity is a key component of labour productivity, and increase in the former would lead to an increase in the latter as well.

Michael Armstrong and Helen Murlis (1999) in their book revealed that non-financial rewards are more powerful and it should be integrated with financial rewards. They opined that the needs of individuals vary almost infinitely depending upon their psychological make up, back ground, experience, occupation and position in the organisation. It is therefore dangerous to generalize about which mix
of motivators is likely to be most effective in individual cases. They pointed out that productivity, if it is correctly measured, is a perfectly proper basis for the payment of a bonus, usually for department or a factory.

Arun Monappa (2000)\textsuperscript{32} in his study reveals that in advanced countries increased wages do not provide a major incentive to workers to increase productivity. Sometimes they prefer leisure to increased wages. But in India where economic needs are predominant, an incentive scheme is an effective method in promoting productivity. He opined that if the performance standards are not properly fixed or if the incentive is not properly fixed or if the incentive is not commensurate with the effort or productivity, it can de-motivate the worker. The same is the case if the incentive payment is delayed also. He is of the view that once a worker is paid a certain wage for a certain level of performance, he may not increase his effort, unless a higher incentive is offered. He further adds that a scientifically devised, systematically evolved and effectively administered incentive scheme has its obvious merits and could benefit employers, employees and the community in general.

David A. Hume (2000) in his book reveals that importance of Performance Related Remuneration (PRR).\textsuperscript{33} He opined that two employee being paid identical amounts even though their levels of work performance were significantly different is not a positive sign. So establishment of an incentive scheme based on the performance of employees is essential.

Noorjahan Bava (2000) conducted a study on productivity of public sector enterprises.\textsuperscript{\textsuperscript{31}} The study reveals that the concept of productivity needs to be widened
so as to embrace not only its economic aspect (ratio between inputs and outputs) but also the political, administrative, social, cultural, national, international dimensions. He pointed out that productivity involves both quantitative and qualitative aspects, long term and short term consequences, of public policies, administrative actions, inactions, aberrations, government – citizen relationship’s, active co-operation, participation and involvement of the people. He opined that many aspects of public sector productivity are qualitative. Measuring productivity of services is a difficult task because of lack of measurement standards and the difficulty of definition. Finally, it was concluded that adoption of new management techniques, job enrichment, participative decision-making, rewards and incentives, moral building, motivation and human resource development can help increase productivity in public administration.

Arun Kumar Krishnamurthy (2001) conducted a study on Human Resources Management. The study reveals that the best service which an HR function can do to its employees is to ensure that their employees feel working in the right place, doing the right work and getting paid justly as long as the employee remains in service. He pointed out a few norms for employee compensation.

* Annual pay and perquisites
* Grade or position based remuneration
* Remuneration based on number of years of service
* Rewarding performance with increments which have a permanent impact on compensation forever.
Ashit K. Sarker (2001) conducted a study to examine the past and present managerial compensation system. In his view, with increases in age and the family size the needs will increase, which require consideration in the compensation. In the early days compensation package was based on grade, age and service, but this traditional system was challenged during the last decade by the introduction of annual increase based on performance. Finally, it was concluded that, the need to regularly carry out detailed compensation reviews both within and without, and full support and commitment from the top is essential. He opined that from the earlier grade oriented compensation system within reasonable boundaries, compensation often has to be somewhat tailor made for specialist or key contributors to retain them in the very volatile job market. The employee cost increase has to be set off through productivity and greater contribution from the resources.

S.M. Gangadhar and Madhar Keswani (2001) conducted a study on the changing nature of employment and compensation. The study reveals that with today's salaries, employees are reaching the level of hygiene on the monetary compensation front. The ability of monetary rewards to attract and retain has been reduced due to similar and better opportunities available in the market and marginal utility of money.

B.S. Prakash (2001) conducted a study to examine the productivity trends in Indian manufacturing sector. The study reveals that, Growth in Labour Productivity which reveals the 'value added output per employee' was highest for rural units during the pre-reform years of eighties for both the 'All Industries' (28.2%) as well as the Food Products Sector ('fps') units (17.5%). Their
corresponding growth rates for the urban units during the pre-reform years of eighties, though relatively lower, was more than two times higher for ‘fps’ units (8.6%) than for the ‘All Industries’ segment (3.5%). The trend in labour productivity during the post-reform years of nineties is more modest but yet significant with the growth rate registered being 8.3% for ‘All Industries’ rural and 5.1% for ‘fps’ rural units. Similar is the case for urban units in the growth rate for the ‘All Industries segment is 6.0% and that for the ‘fps’ units is 7.8%

P. Prince Dhanaraj (2001) conducted a study on impact of trade unions, employment and Technology on wages. The study reveals that productivity improvement requires not only expenditure on machines but also on the wage trends and their relationships with trade unionism, level of employment and the technology enforced with the methods of production. He opined that among the conventional factors of production, wage is highly flexible form of compensation which is universally acknowledged as an important economic variable. Finally, it was concluded that wage is an important part of the cost of production. The employer would like to restrain the wage bill from rising, so that the profit margin increases. Opposed to this, the worker would like an increase in wages. These conflicting expectations of employers and worker often result in industrial unrest. Indeed, wage structure should be such that it creates neither frustration nor discontent among the labour force.

Sanjay Kumar Singh (2001) conducted a study on the relation between productivity, prices and profitability. The study reveals that there is a direct link between productivity, prices and financial performance. He opined that any change
in the financial condition (economic profit) of the firm reflects the change in productivity and change in output prices relative to change in input factor prices. It is also pointed out that changes in the financial condition of a firm depend upon changes in its productivity relative to total price performance.

Srinivas R. Kandula (2001) conducted a study on Employees Stock Ownership Plan (ESOP) reveals that Employee Stock Ownership Plan is an essential ingredient in compensation design and has grown as a critical element of the performance management systems of new economy organizations. He opined that using stock based compensation plans allows the company to provide employee benefits with a lower cash outlay. When the company gives shares of stock or options to employees, the employees benefit from price appreciation without the company having to lay out cash individually.

M.Vanamala (2001) in her study pointed out that, traditionally, the wages of female workers have been fixed lower than the male workers in male dominated informal industries. The study also reveals that the forms of extraction of surplus are changing more to the disadvantage of workers in general and female worker in particular.

Dr. Mrityunjay Athreya in his ‘Foundation Day Productivity Lecture’ at National Productivity Council on 12th February, 2002, has spoken about the three main sources of productivity- technology, processes and people. He opined that these three sources are highly inter-related and among these the third one is more important. He focused on the importance of the vital link between productivity and team work. In his lecture another notable point was that four types of competencies
required in a productivity team player and how they can help to raise total productivity. He has done this on the basis of the ILO’s model of KASH – knowledge, attitudes, skills and habits. He also explained about managerial, capital, material and personal productivity. In his view, the highest payoff can come from the increased personal productivity of each member, each and every human resource employed in the organisation. Finally, it was concluded that although India has had a reasonable saving rate of about 24%, the economic growth rate has not been a commensurate 7% plus, because of the low managerial, capital, material and Human Resource productivity.

N.Vittan, Central Vigilance Commissioner, in his ‘Foundation Day Productivity Lecture’ at National Productivity Council on 13th February, 2002, pointed out that India is one of the countries with very low levels of productivity. He is of the view that lack of education is the key factor for low economic development. Although, China which is comparable in size with ours, they are having 80% literacy (ours is only 62%) and our productivity is much less than that country. He pointed out that productivity involves making optimum use of physical, financial and human resources and time. In his view we are the great wasters of the precious resource ‘time’. He opined that lack of productivity means lack of good governance. In our country judicial delay is one factor for the lack of good governance. Another important factor is corruption. He focussed the importance of Information Technology for improved E-governance. He also focused the importance of better productivity in Resources and Development.
David J. Sumanth in his book reveals that production improvement does not necessarily mean productivity improvement. Production is essentially the output generated, but productivity is a ratio of that output to some input(s) consumed. He also pointed out that improvement in efficiency and sales revenue does not necessarily ensure productivity improvement. He opined that the quality improvement does not have to be at the expense of productivity. He is of the view that the ineffective incentive programme is one of the reasons for low productivity.

P. Rameshan in his book reveals that the role of organisational efficiency is highly relevant and crucial for improving productivity of industrial firm. The degree of organisational efficiency is a joint outcome of a combination of factors that are internal as well as external to the production system of the firm. He represented the finding of his study in the form of a flow diagram. It can be seen that, there is a long process between investing organisational effort and realising productivity improvement. However, at the end, effective effort ensures organisational efficiency and corresponding improvement in productivity.

Robert A. Sutermeister in his study reveals that the human contribution to productivity, or employee's job performance, is considered to result from ability and motivation. He opined that most studies show that high employee satisfaction does contribute to long run productivity by reducing, turnover, absenteeism, sabotage, theft, and worker alienation. But the evidence on short-run productivity, or output per employee hour, is not so clear. Sometimes high employee satisfaction leads to higher short-run productivity, but there is no assurance that this is always true. Regarding the relationship between satisfaction and productivity, it was
concluded that effort and performance affect satisfaction, and that satisfaction by its influence on level of aspiration affect satisfaction and that satisfaction by its influence on level of aspiration affects subsequent effort and performance. He expressed that the satisfaction – productivity relationship is circular.

J. Sathyanarayana in his study Incentives and productivity in public enterprises reveals that in the Indian public enterprises context, it is essential that the incentives to workers should be based upon labour productivity and also linked up with absenteeism. He opined that if an incentive scheme is introduced at too low a level of performance, a considerable amount of incentive is to be given for attaining even the normal level of efficiency. In his view an incentive scheme may not be desirable to introduce before achieving 50% of the standard performance. He pointed out that the basis of paying incentives for the managerial staff will have to be different from the basis on which the workers are paid, as they should be concerned not only with the achievement of increased levels of production or productivity, but also with the quality of output, inventory reduction, safety etc.

N.R. Sheth reveals that incentive schemes are regarded as beneficial to both employers and worker. For employers the need for rigorous supervision is reduced and consequently there is a cut in the expenditure on supervision. Moreover, incentives can be regarded as a step in the direction of linking worker’s compensation with productivity, which is an important prerequisite of economic development.

R. Srinivasan reveals that indirect financial incentives such as fringe benefits are by and large taken for granted and do not provide necessary motivation
to improve productivity. Non-financial incentives such as recognition of work, importance of job etc., may not be considered significant among lower income groups. He opined that reaching a reasonable level of production is a prerequisite for the installation of incentive schemes. In his view the incentive scheme should as far as possible be based on each individual's effort and contribution. If it is not possible, it should be based on the performance of as small a group as possible. Finally, it was concluded that an incentive scheme can't be a substitute for good management.

G.K. Suri in his study reveals that additional money will make the goal of productivity more attractive for a worker and will induce him to increase the rate of effort in order to qualify for a monetary reward. He pointed out that the monetary incentives need to be supplemented with non-monetary incentives.

Another study by the same author (Wage incentives and productivity) reveals that wage incentives offer a relatively easy way to pull up the efficiency to a higher level. He defined, 'a wage incentive scheme is essentially a managerial device of increasing worker's productivity'. Finally, it was concluded that wage incentives can play only a very limited role in improving productivity. Productivity is a much large phenomenon and depends on various factors both external and internal. He also pointed out that the effectiveness of wage incentive schemes declines gradually after the initial spurt.

Apart from the above, a number of studies have been performed to investigate the effect of various factors in improving productivity. The following
table shows a list of authors who argue that the technological factors as fully or partially responsible for the productivity improvement (Table 3.1).

**Table 3.1**

**Studies on Role of Technology**

<table>
<thead>
<tr>
<th>Studies Abroad</th>
<th>Studies in India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Year</td>
</tr>
<tr>
<td>Solow R M</td>
<td>1957</td>
</tr>
<tr>
<td>Salter W F G</td>
<td>1960</td>
</tr>
<tr>
<td>Johansen I.</td>
<td>1960</td>
</tr>
<tr>
<td>Lave L B</td>
<td>1966</td>
</tr>
<tr>
<td>Shen T Y</td>
<td>1973</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sibson R E</td>
<td>1976</td>
</tr>
<tr>
<td>Dollar D &amp; Sokoloof K</td>
<td>1990</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

Authors like Solow (1957), Saltar (1960), and Johansen Lave (1960) have given full credit to technological factors. Solow and Salter had examined the existence of other influences such as work methods and quality of labour. But, they declined to assign any weightage to their influence either because they considered them as determined by the technological progress itself or because they felt their influence as too insignificant to warrant a study. Accordingly, all variations in the net output have been ascribed to variations in the technology. For many other researchers, the capital intensity or technological progress, or both, constituted major causes of productivity growth, with their contributions estimated at over a half of the total increment (Sibson, Dollar and Sokoloff).

In most of the studies in India (e.g., Arya (1983), Ahluwalia (1991), Gangopadhyay & Wadhwa (1998)), the major chunk of productivity growth has been attributed to either or both of the twin factors, viz., capital deepening and technological progress. This characterisation seems to be a reflection on the general Indian perception that increasing capital-output ratio and/or modernisation would be single-handedly capable of expanding productivity. What these studies, however, failed to address has been the low-productivity dilemma of the highly capital intensive industries in India.

Some researchers have denounced the capital dominance of the productivity scenario in certain cases. They instead, suggest the labour factor as the main instrument of productivity changes in those areas (Meht (1980), Singh & Singhal (1987)).
The following table shows the name of some of the authors who studied about the role of non-technological factors for improving productivity (Table 3.2).

**Table 3.2**

**Studies on the Role of Non-Technological Factors**

<table>
<thead>
<tr>
<th>Studies Abroad</th>
<th>Studies in India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Year</td>
</tr>
<tr>
<td>Scoff R M</td>
<td>1950</td>
</tr>
<tr>
<td>Harbison F</td>
<td>1964</td>
</tr>
<tr>
<td>Shen T Y</td>
<td>1973</td>
</tr>
<tr>
<td>Fabrican S</td>
<td>1974</td>
</tr>
<tr>
<td>Bain D</td>
<td>1982</td>
</tr>
<tr>
<td>Gollop F M &amp; Roberts M J</td>
<td>1983</td>
</tr>
<tr>
<td>Daughety A F</td>
<td>1984</td>
</tr>
<tr>
<td>Cable J &amp; Wilson N</td>
<td>1989</td>
</tr>
<tr>
<td>Jefferson G H</td>
<td>1990</td>
</tr>
<tr>
<td>Wadhwani S &amp; Wall M</td>
<td>1990</td>
</tr>
<tr>
<td>Kaufman</td>
<td>1992</td>
</tr>
</tbody>
</table>


These studies suggest the relevance of various non-technological inputs, most prominent among those elements noted are; (a) effective work methods (Scoff...
(1950), Mehta (1955), Solomon (1963), Sibson (1976) and Bain (1982)), (b) production practices (Sibson (1976), Gollop & Roberts (1983), Doughety (1984)) and (c) better use of human resources, an area of ever growing importance (Solomon (1963), Bain (1982) and Rosen (1984)).

Mr. Bain pointed out that the human resource is in the highest order of resources. He is responsible for controlling and husbanding all other resources. The better utilisation of human resources requires a pronounced stress on various incentives and their motivating power. As a matter of fact, Anita (1993) notes that in the Indian context during the 1970s and 1980s unsatisfactory labour-management relations had adversely affected productivity of public enterprises.52

Reference to Role of Organisation

Harbison (1956) defined Organisation as “a constellation of functions, the persons and the abilities necessary to perform these functions, plus the integration of persons and functions in a common undertaking”. He, then, observed that large expenditure for equipment and machinery could remain unproductive, unless there was a concurrent investment in organisation as well. Further, assuming free supply of capital, natural resources and labour productivity, it has been presumed and determined principally by organisation. Thus, for Harbison, organisation was the prime factor in enhancement of productivity. But, he believed that inefficiency could set in a firm, as a result of some non-economic factors.53

The following table shows the studies implying role of organisation in improving productivity (Table 3.3)
Table 3.3
Studies Implying Role of Organisation

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Author</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harbison, F</td>
<td>1956</td>
<td>Burley, H. T.</td>
<td>1980</td>
</tr>
<tr>
<td>Marris, R</td>
<td>1963</td>
<td>Leibenstein, H</td>
<td>1980a</td>
</tr>
<tr>
<td>Williamson, O. E</td>
<td>1964</td>
<td>Leibenstein, H</td>
<td>1980b</td>
</tr>
<tr>
<td>Bakke, E.W</td>
<td>1964</td>
<td>Link, A.N.</td>
<td>1980</td>
</tr>
<tr>
<td>Myers, E.W</td>
<td>1964</td>
<td>Prescott, E. C &amp; Visscher</td>
<td>1980</td>
</tr>
<tr>
<td>Leibenstein, H</td>
<td>1969</td>
<td>De Alessi, L</td>
<td>1983</td>
</tr>
<tr>
<td>Blois, K.J</td>
<td>1972</td>
<td>Leibenstein, H</td>
<td>1983</td>
</tr>
<tr>
<td>Leibenstein, H</td>
<td>1975</td>
<td>Mefford, R.N.</td>
<td>1986</td>
</tr>
<tr>
<td>Spence, A.M</td>
<td>1975</td>
<td>Wintrobe, R &amp; A. Breton</td>
<td>1986</td>
</tr>
<tr>
<td>Stigler, G.J</td>
<td>1976</td>
<td>Leibenstein, H</td>
<td>1987</td>
</tr>
<tr>
<td>Williamson, O.E</td>
<td>1976</td>
<td>Marschak, T</td>
<td>1987</td>
</tr>
<tr>
<td>Leibenstein, H</td>
<td>1979</td>
<td>Hausman, W.J. &amp; Neufeld</td>
<td>1991</td>
</tr>
<tr>
<td>Shen T.Y</td>
<td>1979</td>
<td>Stole, L.A &amp; J. Zwiebel</td>
<td>1996</td>
</tr>
</tbody>
</table>


Several other studies have pointed out that organisational climate such as job satisfaction (Maslow 1943), working conditions (Herzberg 1959), feeling of belonging (Mulder 1960) and decision making opportunity (Mulder 1971) have close correspondence with labour productivity.

Mohoney and Jones (1957) pointed out that economic benefits such as wages and salary has close correspondence with labour productivity. At the same time Alfie John in his book argues that paying for performance is actually de
motivating (Houghton Miflin, 1993). Steven E. Gross Kohn has said that rewards create unhealthy competition among workers.

Since 1940s, we can see a number of studies to investigate the effect of financial incentives on organisation and performance. Some of the studies reported from United States and UK are Argule (1989), Daviedson (1958) and Bowey (1982)(UK). Study between 1977 and 1980 were revealed that operation of incentive schemes increases productivity and effort and earnings of workforce.

In India several studies were conducted by the National Productivity Council’s Research wing. Some of the studies agree with the dominant role of incentives in labour productivity. But some others are not fully agreed with it. Here, it is important to note that a specific study on role of incentives in labour productivity, based on the Kerala’s Public Sector was not found in the literature.
Foot Notes


34. 'Productivity in Public Administration: Concept & Application in India', Productivity, Vol. 41, No. 1 April/ June 2000.p. 24


44. 'Organisational Efficiency and Productivity Improvement. The Indian Industry Context', Vikas Publishing House (P) Ltd.
46. 'Incentives and Productivity in Public Enterprises’, Bombay Popular Prakashan.
48. 'Wage Incentives: Two Views’. “Wage Incentives Theory and Practice”, Editor G.K. Suri, Shri Ram Centre. For Industrial Relations and Human Resources, Delhi. P.186