CHAPTER 4

RESEARCH FINDINGS AND CONCLUSIONS
CHAPTER 4

RESEARCH FINDINGS AND CONCLUSIONS

This chapter, being the concluding one, contains the findings of the present research, discussions on the statistically investigated relationships between the various variables under study, the concluding observations and some research issues for the succeeding scholars and researchers interested in working on the theme of productivity management in small-scale industries.

4.1 Findings of the Study:

Since the five objectives of the study were classified as either primary or secondary, their findings are accordingly grouped, presented, and discussed in the following sub-sections.

4.1.1 Awareness About Productivity Management: To probe the awareness of SSI units about the importance of productivity, its measurement and improvement was the first primary objective to be achieved.

Nearly 50 per cent of the units surveyed are found measuring their productivity for one or more reasons to justify the measurement. The reasons mentioned by the majority of these 50 per cent of the units indicate that they are quite aware of the conceptual and practical meaning of productivity and its role in making them competitive in the
market. However, conversations with some of them reflected a total ignorance of the word productivity. A majority of the remaining 50 per cent units, which are not measuring productivity, show the same type of ignorance. Sometimes even its explanation was not found sufficient to make them understand and respond to the questionnaire. The units not measuring the productivity either found it difficult to measure or felt no need of such measurement as data on productivity was of no use for them. Resistance offered by workers also prevents some of the units from measuring the productivity. This might be due to a general misconception prevailing amongst workers that any measurement and evaluation of their performance may lead the management to reduce the workforce. It was interesting to know that 55 per cent of those owners/managers who do not measure the productivity as such are at the same time showing some kind of ratio (while replying to another question) for measuring the productivity of their unit. This inconsistency in their response may simply be attributed to two reasons. One, the confusion they have between production and productivity. Second, the fact that each business organisation, however small or big it may be, measures its performance which may not necessarily be in terms of productivity.

Profit per rupee of investment was found as the most commonly used productivity index in SSIs. Similarly, it was again higher profit which got the highest score amongst the various benefits of improving productivity. Although high profitability is a logical ultimate goal of all profit-type organisations, SSIs are found more amenable to this
parameter of performance. Through informal discussions with some SSI
owners known to the researcher it was revealed that small units generally
tend to overutilise their human and machine resources in order to
generate more profits. Improved quality of worklife of workers was
reported to be among the benefits of enhanced productivity by only 22
per cent of the units.

Regarding methods of productivity improvement, 20 per cent units
mentioned 'incentives' as the best way to increase productivity.

Productivity has got fourth place on the relative-importance scale
when compared with production volume (third), profitability (second),
product quality (first), and market share (fifth) as performance
measurement parameters. This rating of each parameter seems to be
justified in the context of its use. Product quality has its own importance
in the competitive market. Moreover, some bias towards quality, it being
a buzzword today, is also possible. The next important parameter then
is profitability the prime objective of SSIs, followed by production volume,
which is directly related to the profitability. SSIs, due to their typical
set-ups, have rightly considered market share as a matter of least
concern for them. When compared separately based on whether
measuring productivity or not, the units had ranked productivity
differently-second and fourth, respectively. The Spearman rank correlation
test, later on, found no significant reason for this difference between
the groups. Nevertheless, it was logically assumed that the units which
measure productivity are more aware of its importance and hence ranked
it higher than those which do not measure the same.

The data indicates some kind of relationship between the productivity awareness of units and their age. In the high awareness group, ratio of younger to older units is 2:1 which is only 1.2:1 in the low awareness group. And since the overall ratio of the units in the two awareness groups is almost 1:1, it can be presumed that the younger units are more conscious of productivity aspects than the older ones.

This difference is probably existing because younger units are relatively unstable as they do not have the advantages which come naturally to the older units owing to their longer standing in the business world. Hence it becomes more important for younger units to manage their resources more effectively and efficiently. Also, the owners/managers of younger age-group being formally educated, particularly those in technical streams, are able to understand and practice the concept of productivity in a better way. Further, the education-business interaction, which is being greatly emphasized nowadays, certainly influences the role of productivity in SSIs.

However, no significant relationship between age and productivity awareness was statistically confirmed.

A similar test of independence between productivity awareness and investment on plant and machinery inferred that the higher the investment of a unit the more is its awareness on productivity. Units in low awareness group showed dominance (72%) of low investment units and
that in the high awareness group include 55 per cent of high investment units.

Interviews with owners/managers have also confirmed that investment is indeed a vital factor for productivity measurement and improvement. For instance, owners of SSI units found that neither their margin was good enough to afford the application of such managerial approaches nor did they need to measure the performance except in terms of profit.

Although a direct relationship between productivity awareness and investment is observed yet there are some exceptions where not all high investment units are necessarily more aware about productivity than all low investment units. The findings are summarised below:

* The median age of the units is found to be 21 years and the median amount invested on plant and machinery in the units is Rs. 45 lakh. Each unit, on an average, employs 50 workers of different categories.

* One-fourth of the responding owners/managers are qualified in technical streams like engineering and management while the rest include those from other non-technical disciplines. The average experience of the respondents in their present units is 13 years. Not more than ten per cent of them have undergone any professional training.

* Productivity management in SSIs is still in its infancy. It is considered more as a theoretical aspect rather than a practical approach.
Although 50 per cent of the units are found measuring productivity, only few owners/managers understand productivity in its real sense.

Among the five commonly used performance measurement parameters (product quality, production volume, productivity, profitability and market share), productivity has been found as only the fourth important parameter.

Not all units which are aware of the benefits of productivity improvement are measuring their productivity. Also, all units which do not measure productivity are not necessarily unaware of the benefits. Here it would not be out of place to point out that, generally speaking, the role of productivity is not being fully understood and appreciated by the SSIs.

Profit per rupee of investment is the major index of performance used in SSIs.

Measurement of productivity and its awareness in a unit does not depend on how old the unit is. It depends, however, on the investment.

4.1.2 Role of Financial Incentives in Productivity Improvement:
Another primary objective of the study was to investigate the role of incentives, particularly financial incentives, in improving labour productivity.

At the outset of such investigation it was found that 86 units, out of 93 (92%), are providing incentives to their workers for different purposes
which ultimately lead to some gain in labour productivity. Though the study suggests a positive relationship between financial incentives and productivity, still, some contradictory results are also obtained by previous researchers. The reason being that linking productivity with incentives in fact, depends on the type of the workers (blue-collar or white-collar), their psychology and needs, and the work environment. A total of 72 out of these 86 units give financial incentives either alone or in combination with non-financial incentives. Cross-classification of relevant data and its statistical testing revealed that the type of incentive is significant with respect to the trend of labour productivity in SSIs over time.

Mostly the units provide incentives for an increase in production volume, or in some cases to improve the product's quality. Although high absenteeism is a common feature of the SSIs, incentives in only 23 per cent units were aimed at reducing absenteeism. It appears contradictory to the general practice of using some monetary means in small units to make workers loyal to their employers. Dominance of traditional units in the sample, facing not much competition, could have been a reason for this low percentage of units giving incentives to reduce the absenteeism.

Since small-scale enterprises are generally not managed by well-trained and professional managers, incentives were also thought to be a way out to compensate for managerial deficiencies in such units. No owner/manager has, however, agreed to this opinion.

Regarding the extent to which incentives were able to enhance labour
productivity, 50 per cent of the sampled units felt great satisfaction and the remaining ones were satisfied only to a small extent. Majority of the units (63%) use financial incentives as a short-term measure to achieve the immediate production target, whereas, 21 per cent adopt a long-term incentive policy. There are still few units (16%) which claim that they provide incentives on a regular basis apart from what profit they share with the workers for the extra efforts made to meet the additional demands.

Considering the SSIs culture in India and their common features, workers are invariably supposed to get motivated to work harder for some financial gains. A possible relationship was, therefore, examined between the period of incentives and the satisfaction to the owners/managers about the achievement of their objectives. It was concluded that the extent to which an incentive serves its purpose does not depend on the duration for which the incentive scheme was implemented.

On further analysing the issue of productivity improvement through financial incentives, no special effect of any particular schedule of financial incentives was noticed on the level of satisfaction the SSI units could achieve about the gain in productivity.

The findings concerning the relationship of the level of satisfaction to the workers and to the managers, for that matter, with the period and the type of financial incentive scheme would have been more reliable and easy to visualise if it were examined experimentally. The reason being that the present data pertains to the units which are different in their products, processes, markets, etc. Moreover, workers from different units do not have
any common platform and hence no direct means to compare their relative efforts and benefits. For instance, if workers of a unit are exposed to a variety of incentive schemes and then the change in labour productivity over the period is observed, more significant results could be possible to obtain. In the absence of such comparative experiments, workers are likely to improve their performance in their respective units for some financial returns irrespective of the units' policies on productivity-linked incentive plans. Thus making it difficult to study the effects of such policies on improvement of productivity.

Following points summarise the findings discussed in this subsection.

* The practice of providing financial incentives to workers is very common in SSIs, but with different objectives. The main purpose of financial incentives is to increase production. Improving quality of the product has also been the objective of giving incentives in some units. Such incentives are mostly used as a short-term measure only.

* Financial incentives also improve the quality of work even if they are meant for increase in production.

* The amount of gain in labour productivity over time depends on the type of incentive. Financial incentives are generally found as the most effective means of increasing productivity.

* Increase in productivity is not affected by whether financial
incentives are combined with piece-rate or time-rate system of wage payment.

* The extent to which financial incentives serve their purpose is independent of the type of scheme and the duration for which the incentives are given.

4.1.3 System of Wage Payment and Trend of Labour Productivity:
The secondary objectives were basically specified to study those aspects of SSIs which could support the process of achieving the main objectives. One of the secondary objectives was to study the common practices of SSIs regarding wage payments. Approximately 60 per cent of the units were following a time-rate system of wage payment for their regular workers as against a piece-rate basis which was practiced by the remaining units. Both the systems have their own merits and demerits which, in some way or the other, have an impact on the production volume, product quality and the manager-worker relations. But as high labour turnover has been a common phenomenon in small units, it was unexpected to learn that more units preferred time-rate rather than piece-rate system of wage payments. For casual workers, daily wage system was found most popular followed by piece-rate. In most of the units, the basis for following a particular wage system was either industry norms or negotiations with the workers. For increment in wages, annual system was found more common than others like revision of statutory norms and worker's demand. An attempt was made to study the effect of financial incentives on labour productivity when incentive is combined with the two
systems of wage payment. It resulted in the conclusion that wage-incentive combinations do not have any significant effect on labour productivity.

Study of the trend of labour productivity in SSIs was another secondary objective of the present research. About 80 per cent of the units were reported to be measuring labour productivity as they have shown some kind of ratio for its measurement. Number of units produced per worker and that per labour-hour were observed as the two main indicators of labour productivity in SSI units. Labour productivity, in 47 per cent of the units, has shown an increasing trend during the last few years. The remaining units have noticed either a decreasing trend (19%), no change in labour productivity over the time (23%), or an inconsistent performance (11%). Workers' inefficiency and lower grade of technology were found as the two main causes of decline in labour productivity in the SSI units.

Surprisingly only 30 per cent units considered shortage of working capital as a factor responsible for low productivity of SSIs.

The point-wise summary of the findings is given below:

* Wages in SSIs are fixed according to either industry norms or through negotiations between the workers and owners.

* Time-rate system of wage payment to regular workers is more common as compared to piece-rate system, particularly in the units which follow industry norms for wage payment.

* Casual workers are generally paid on daily-wage basis.
* Wages are usually increased annually.
* Workers performance is generally measured as number of units produced per worker or per labour-hour.
* The trend of labour productivity over the years has been either increasing, constant, decreasing or erratic in different units irrespective of the industry a unit belongs to or its location.
* Low efficiency of workers and lower grade of technology are identified as the two main factors resulting in a decreasing trend of productivity in any SSI unit.

4.1.4 Peripheral Issues: Product quality is also a vital constituent of the overall performance of any enterprise. The government is considering to provide incentives to those small-scale undertakings which acquire ISO-9000 certification. The sample of the study in general, did not seem prepared for acquiring such certification.

The respondent's opinion about the impact of liberalisation on their attitude towards productivity was also indifferent.

On the role of NPC in propagating the concept of productivity and assisting its improvement, the owners' views were negative. They were, however, complaining about the overall assistance from the government.

The following points summarises the major findings of this portion of the study.

* No positive impact of liberalisation on productivity aspects is
observed at the grass-root level in SSIs.

* The small number of owners/managers who are aware of ISO-9000 feel that going for this certification is expected to bring some positive change in the attitudes of manager as well as workers toward productivity.

* Almost all units are found to be unaware about the existence of the National Productivity Council and its role.

* SSIs are generally not satisfied with the government's assistance and incentives to them as even their basic requirements, like that of power, are not readily fulfilled.

* Despite some favourable recommendations of the Abid Husain Committee, small-scale sector has strong apprehensions about its future particularly in view of the current economic policy and the contentious issue of MNCs entry.

4.2 Conclusions and Suggestions:

Higher productivity means reduced wastage of resources, which in turn, brings the cost down. Lower cost then leads to reduced price and hence higher demand. When demand goes up, the production volume is increased. Producing and selling more ultimately generates more profits.

Productivity of a business enterprise is the ratio of its output to the input. Output of an enterprise, that include goods and services, when expressed in financial terms is generally measured as profit, production
(value), and sales. The input, on the other hand, has three components and is expressed as fixed assets, working capital, wages and salaries, and other miscellaneous heads of the budget.

The first category of input components include product design and development, product-mix, process design, tools and equipments, production planning and scheduling, plant layout, plant maintenance, supply of raw material, and working conditions etc. The second category is that of working capital and other financial elements necessary to operate the unit. The third, and perhaps the most vital, element is the workforce.

So far as the first category of elements are concerned, the owners/managers of SSI units, generally not being professional and trained, are less capable of selecting and utilising them properly. Also, they do not prefer to hire consultants and experts in this regard because of their being almost unaffordable for small units. To make the required working capital available at the right time has also been a difficult task for the SSIs for various reasons like credit problems, limited access to the capital markets, and ineligibility for listing on the BSE, NSE and other exchanges. The only resource then is manpower, particularly in labour-intensive units, which if managed and motivated properly can contribute towards productivity improvement of small-scale industrial units. For the reasons related to the management, or otherwise, workers performance is adversely affected mainly by their absenteeism, lateness and carelessness.
It is, therefore, imperative for SSIs to focus more on labour productivity and its continuous improvement so that they can generate enough profit required for their survival and smooth functioning.

Among the various means of improving productivity, the non-incentive based techniques, which are product or process-oriented, hardly suit the SSIs requirements. The only option left to SSIs is then using incentives for workers. Moreover as revealed by the study, financial incentives produce a greater impact because the workers are usually at that stage of human needs hierarchy where non-financial incentives seem to be relatively ineffective.

The above discussion leads to the conclusion that in order to survive and compete in the present business scenario, SSIs must concentrate on productivity which can effectively be improved through financial incentives to the workers.

However, there are certain limitations and weaknesses of SSIs which when put together are found responsible for low productivity and high absenteeism in this sector. The findings of the present study thus identify some gaps between the desired goals of high productivity and the present performance of SSIs.
Each unit should be provided with a specific format to record its performance on an annual basis so that the unit's productivity can be measured and compared with the past years' index.

Units should be encouraged to win the NPC award by giving the awardee some extra incentives.

Inter-unit and inter-industry comparisons of the units' productivity should be made by some competent body, like local centres of the NPC, so that the units put extra efforts to maintain the data on productivity.

Institution-Industry meets should be arranged regularly for an updated communication between them.

Proper and regular supply of the required inputs to the industry should be ensured by the local governments.

All schemes and incentives concerning SSIs should be revised and implemented in accordance with the present needs and past performance of units.

For better performance of workers, their quality of work life including the working conditions should be improved and both the management as well as workers must be accountable to each other.

4.3 Direction for future Research:

Various constraints like that of time, financial, administrative, academic and personal fix-up the boundaries of a particular research
work. The work may otherwise have a multi-directional expansion with focus on different issues. The present study too had defined its scope and limitations and hence provides room for its further improvement and enrichment. Based on the experience gained during the study the following issues are identified as relevant and important for future researches in the area of productivity management in small-scale sector.

(i) **Productivity Management in Exporting Units:** The units which earn foreign exchange by means of selling their products directly or indirectly through any agency in the foreign market are classified as exporting units. The exporting units of the small-scale sector have been contributing significantly to the country's total exports during the last two decades. For instance, in the year 1993-94 the share of SSIs in the total export was about 35 per cent. Readymade garments, sports goods, processed food and leather products are the major exporting items being produced by these units. Despite of such an impressive performance by the SSIs the country's total exports has been very low and therefore SSIs, being a major contributor, need special attention for making further improvements. And since productivity management emphasizes lesser wastage of resources, exporting units should be studied in detail for measurement and improvement of their productivity. Also, the outlook of the owners/managers of such units about productivity related issues is expected to be somewhat different, rather positive, from their non-exporting counterparts. A comparative study on productivity of these two classes of SSIs could also be a great contribution to the industry.
(ii) Productivity Improvement and Schemes of Financial Incentives:
Through the present study the use of financial incentives has emerged as an effective tool for motivating the SSIs workforce to improve its performance quantitatively and, sometimes, qualitatively as well. It was also found that though financial incentives increase labour productivity, no single scheme could be identified as being more effective than others. Insufficient data pertaining to the production (value), and wages for the last few years in the sampled units was one reason which made it impossible to determine the trends of labour productivity in the sector and the effect of the financial incentives on those trends. Such data, if made available in future, may prove its worth for proposing some concrete guidance to the SSIs in regard to incentives to the workers linking them with enhanced productivity.

Another approach for conducting similar study on the effects of various types and schemes of incentives on labour productivity may be based on experiment. Workers from selected units may be identified as subjects for an experiment to study the behavioural and attitudinal changes with respect to various schemes introduced and applied for different time periods.

(iii) Downsizing and Technological Upgradation in SSIs for Productivity Enhancement: Labour inefficiency and lower grade of technology in SSIs particularly in traditional units, are two important productivity bottlenecks. Can the upgradation of technology and
elimination of the resources, whose returns are not covering their costs, improve the productivity? Finding an answer to this question is an interesting proposed topic for research in the area of productivity improvement in SSIs.

(iv) Education, Training and Entrepreneurial Skills of the Owners/Managers vis-a-vis the Units' Performance: Apart from the common technological and institutional constraints of SSIs, the education, attitude and professional skills of their owners are also supposed to influence the performance. Findings of some study on the extent to which such factors may affect the productivity of a unit may be helpful in the betterment of SSIs.

(v) Inter-state and Inter-industry Comparative Study on Productivity Measurement and Improvement: Units belonging to the small industry are spread over different states in the country producing various items for societal use. The 138 clusters of SSIs in India, located in different cities and towns, are classified according to their potential of producing specific items. Location-wise and product-wise study of such units with variations, if any, in the incentives and facilities being provided to them may contribute in planning, controlling and improving the performance of small-scale industrial units in the country.

The domain of the present study along with the suggested topics for future research does not claim to encompass the entire gamut of planning and policy-making activities for productivity enhancement in the small-scale
sector. They are simply the milestones on the way to productivity improvement.

While the debate on productivity-linked incentives is still inconclusive because of its multi-dimensional effects on the workers performance at the workplace, the blue-collar's output in the small business organisations is, however, found to be linked with monetary rewards to a great extent.