CHAPTER 2

RESEARCH OBJECTIVES AND METHODOLOGY
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This chapter deals with the literature review in its first section followed by the objectives of the study, its methodology and the limitations. Relevant findings and excerpts of the literature reviewed are classified and presented under the section 2.1 with the aim of identifying the research gap and attempting to formulate the research objectives. Need for studying the present issue is then briefly described before specifying the research objectives. A comprehensive note on the research guidelines, its methodology, and the limitations conclude the chapter.

2.1 Review of Literature:

Productivity as a performance criterion is too complex to be conceptualised and measured because of the wide spectrum of its definition that changes from resource to resource and from industry to industry. For instance, measurement of labour productivity in a manufacturing organisation is different from that in a service organisation and even within the same organisation white-collar productivity differs from the blue-collar productivity. An attempt in this context is made here to review the studies and practices of previous academicians and practitioners available in literature.
2.1.1 Productivity-Large vs Small Units: Strategic planning, a crucial step toward a successful Productivity Management Program (Sink, 1985), in small business organisations is different from that in large units because of their limitations related to the product, technology, market, economy, and human resource development. Such differences, however, do not draw any firm line of demarcation between them so far as productivity planning and its implementation are concerned.

Given below are the concepts and research findings, revealed by this review, on various issues related to total productivity, labour productivity and financial incentives.

2.1.2 Productivity in Manufacturing and Service Organisations: Mundel describes productivity ratio as an index which is mathematically given by: (Hicks, 1994)

\[
\frac{(AOMP/RIMP)}{(AOBP/RIBP)} \times 100
\]

Where:

- AOMP = aggregate output, measured period
- AOBP = aggregate output, base period
- RIMP = resource input, measured period
- RIBP = resource input, base period

In the expression, the numerator is called the current performance index, whereas the denominator is referred to as the base performance index. Mali (1978) has, however, suggested five categories of ratios representing the productivity index.
namely, overall indices, objective ratios, cost ratios, work standards, and time standards ratio.

A study conducted by Cosmetators et al. (1983) reveals that performance evaluation is highly dependent on the definition of productivity and its measurement. For a multi-product manufacturing firm a systematic procedure for developing a product-wise productivity measurement was described by Ray et al. in 1987. They have developed such a model for effective monitoring and controlling of various input factors to take care of the interdependency among various stages of production.

Aboganda (1994) has suggested a methodology for productivity measurement that could be used to determine the impact of productivity on profitability in strategic or long range plans. According to him, change in quantity of resources used from the base period to the review period is due to change in productivity and change in the level of production activities.

Computer-aided productivity measurement was proposed by Oden (1988) with a series of interactive computer software developed in Lotus 1-2-3.

Measurement of productivity in service organisations has always been a difficult task due to their output being intangible and which cannot be quantified easily. However, researchers continued their efforts in this direction and suggested various approaches for different organisations. Golany et al. (1990), for
example, outlined a productivity assessment based on Data Envelopment Analysis (DEA) methodology. DEA offers the first satisfactory multi-input, multi-output measure of productivity, and allows for productivity management at the intra-firm and inter-firm levels with particular application in marketing.

Another article, by Sherman (1984), describes an approach to help evaluate and improve the productivity, identify inefficiencies and ways to improve productivity with special reference to banks and hospitals. A simple ratio of patient-bed-days to staffing-hours is given by Riggs (1984) for hospital’s productivity. Also he has highlighted 'employee accountability' as a means of productivity improvement in service organisations. The approaches to achieve this goal include improving communication between supervisors and subordinates, motivating employees, assisting administrative decisions on wages etc., and establishing a database for productivity improvement. In a NPC research division publication (1993), the labour productivity of a transport undertaking is defined as the ratio of output (passenger-kilometers) to the number of employees.

Once the management of an organisation has established its productivity ratio, the next step then is an attempt to enhance it on a regular basis. According to Woodruff (1984), adopting an open attitude towards employees, seeking suggestions from the rank-and-file and caring about problems, have been shown to
improve morale and increase overall productivity. Innovation and involvement on the part of all concerned are the requirements of the perpetual research for improvement concluded Worrall (1987). He said, productivity improvement was not a one-time cost reduction exercise but a continuous ongoing operation. Suzaki's study, conducted in 1985, of Japanese automobile manufacturers, has focussed the work-in-process inventory levels as the key to productive factory operations.

Wrennall (1994), however, has realised that approaches to productivity improvement developed early in this century are inadequate now and, therefore, the need of the hour is to address productivity in the areas covered under the banner of Business Process Re-engineering, e.g., operations strategy development, resource renewal, time compression and timeliness, total quality management, and information systems.

Roach (1996) in his study on productivity-led recovery in the US had discussed the roles of information technology and the policy of downsizing, the two measures of productivity and efficiency improvement. He believes that the pace of technological innovation is correlated with expenditure on research and development which, in turn, improves the organisations' competitiveness. Downsizing, on the other hand, can simply increase the efficiency for a short-term period by "eliminating resources whose returns are no longer covering their costs."
2.1.3 Measurement of White-Collar Productivity: Human resource, according to the job they perform, are broadly classified as white-collar and blue-collar workers. The former class is professional and service-oriented, whereas, the later is non-professional and equipment-oriented. Moreover, white-collar's output possesses the characteristics of services, and that of the blue-collar possesses the characteristics of goods. A productivity management programme designed for blue-collar workers, therefore, should not be applied for white-collars without modifying its features. Sometimes, it becomes rather imperative to have an entirely different programme for their productivity measurement and improvement.

Mali (1978) has proposed seven strategies for white-collar productivity improvement, development of productivity mindedness among the workers, use of equipment aids where possible, increase in discretionary content of jobs, use of productivity appraisals in place of performance appraisals, time-management training of the workers, their motivation and managing-productivity-by-objectives.

Hicks (1994) has summarised eleven of the white-collar productivity improvement techniques described by Lehrer in his publication entitled "White-collar Productivity". The techniques are enumerated as clerical methods/human factors/work-measurement, paper work simplification, input-output ratios, multiple-regression,
physical resource/technology structure, work-unit analysis, management-by-objectives, organisational structure analysis, operational functional analysis, overhead value analysis, and quality circles.

Schroeder (1993) also has emphasized a separate consideration to white-collar productivity as it affects all segments of society-manufacturing, service and non-profit. Giving extensive managerial input to some knowledge workers, Schroeder, et al. (1985) in a study defines ten measures of white-collar productivity in two categories. The first category, 'What is accomplished', includes client satisfaction, project success and dollars generated. 'How the work is done' is the second category listing the remaining seven measures as degree of innovation, handling of non-standard situations, degree of immersion in the job, meeting of deadlines, lack of surprises, documentation and transferability of work, and adaptability to change.

An analytical model developed by White et al. (1989) provides a basis from which management may adjust previously assessed determinants of their organisation's productivity. The organisation on which the model was tested raised productivity by an average of 17 per cent within two years. The increase was directly attributed to the organisation's use of the productivity measurement system.

2.1.4 Measurement of Labour Productivity: Labour productivity
(blue-collar productivity) is generally defined as the output per labour-hours. A value-added productivity ratio structure, conceptualised by NPC project team in 1992, computes labour productivity in terms of value added per employee per year. Later, in a study of Asian countries by NPC, the concept of 'economically active population (EAP)' was used as input measure instead of employed persons, and the 'gross domestic product (GDP)' as the output measure for productivity computations (NPC research division).

The International Labour Organisation has defined EAP as 'the group of all persons of either sex who furnish the supply of labour for the production of economic goods and services as defined by the United Nations System of National Accounts and Balances, during a specified time-reference period'.

The revised study of labour productivity in Asian countries has introduced the concept of 'purchasing power parity (PPP) adjusted GDP' in terms of a common monetary unit called the 'international dollar'. In the earlier study, it was the exchanged-rate base GDP used as the output which did not reflect the purchasing power disparities among the covered currencies (NPC research division, 1993).

Masud (1985) described labour productivity index as the ratio of standard labour-hours to the actual labour-hours, in his
study on determination of the future manpower at Cessna Aircraft Company.

Establishing a relationship between labour productivity and work-sampling, Thomas (1991) concludes that work-sampling studies show how busy the workers are, and the results can be used to predict labour productivity or to quantify inefficient work hours.

To understand labour productivity from labour market viewpoint, instead of product market, Aggarwal et al. (1992) made an attempt to examine the relationship between two measures of labour productivity, i.e. output per worker and output per rupee of wages paid, for large and small manufacturing companies. It was concluded that there is evidence to the effect that the relationship could indicate the nature and magnitude of distortions in the labour market.

Another dimension of labour productivity measure is introduced by Upendra (1995) as 'the elasticity of labour productivity with respect to wage rate', defined as the ratio of marginal labour productivity in relation to wage rate and that of average labour productivity. This ratio estimates the substitution probabilities of labour for capital.

2.1.5 Productivity Improvement through Financial Incentives: Methods for improvement of labour productivity, in general, and
incentive plans as one of them, in particular, have been the topic of much research and controversy.

Vroom (1964) regards wages to represent an almost universal form of inducement for individuals to perform work. According to him there is a positive relationship between wages and workers productivity.

On the other hand, Brown (1969) says that money has been found to be one of the least powerful incentives in case where wages are adequate. He also maintains that the law of diminishing returns applies to all material incentives: as the reward increases, the desire for further reward decreases until it reaches a vanishing point.

In an article by Thomas (1985), piece-rate systems were found to act as deterrents to development of job improvement because they include only direct labour. However, incentive plans that include all factory personnel and emphasize cooperative labour-management relations were highlighted as means to improve productivity.

An approach of quality-oriented wage incentives for production line workers was presented by Tabucanon in 1985. The plan rewards workers on the basis of the 'loss-level' of their output.
Good industrial relations and union's involvement in decision making, according to Hanlon (1985), are also important strategies for improving labour productivity. He says, union-management collaborative efforts can improve productivity promoting greater flexibility in the deployment of human resources and creating a climate favourable to shop-floor innovation. Union involvement is conditional upon assurances that productivity gains will not lead to loss of jobs.

A review of several motivational theories and the productivity gain-sharing plans by Wygant in 1987 has presented advantages and disadvantages of financial incentives. Recommendations were made concerning the installation of financial reward plans and the factors that influence their success or failure.

A comparative study of Japan and the USA on the workers' involvement in productivity and quality was done by Goodfellow in 1991. Six tested rules to improve productivity and maintain high quality were presented. The aspects addressed in those rules are management goals, customer needs, meaningful goals, vivid illustrations and explanations of customer needs, and management philosophy.

Emphasizing the need of a good incentive scheme to motivate workers towards increased productivity, Rai (1979) said that regular wages bought the time of an employee but not his
output and motivation without which his tangible and intangible outputs were not available to the company. He, however, suggested never to apply any incentive scheme aiming at covering the management's shortcomings.

In 1985 Lane conducted a survey of industrial engineers in the USA to find out their views about a certain productivity programme. When he asked the respondents to mention the single most important benefit resulting from a formal incentive programme, 55.5 per cent said "increased workers efficiency", 18.8 per cent mentioned "improved quality of output", "increased company loyalty" was the response of 12.3 per cent, and "a combination of all of these" said the remaining 13.4 per cent.

Whitman (1990) concludes that incentives are an important aspect of increase in production if it is true that increase in productivity is "what management labours to raise, but what labour cannot manage without a raise."

Employee-trust is described by Carmody (1994) as one of the most valuable and hand-won productivity aspects of any corporate culture. And according to him the risk of damaging this very aspect is high in the absence of a proper employee motivation programme.

Advocating against the time-based reward structure, McGrath (1994) concludes that an incentive plan which pays employees for quantity and disregards quality can easily become
self-defeating. Therefore, managers must begin to tie employee renumeration directly to employee productivity in a manner that can be effectively measured and that is easily understood by employees. He, however, suggests gain-sharing programme as one method of linking employee self-interest to overall company productivity.

Yet another important aspect related to worker's morale and productivity is the management feedback. Key (1994) points out that many companies do not give real feedback to their workers, which tends to cause the workers to lose confidence in the company's management resulting in frustration and hence lower productivity.

Contrary to the belief of linking productivity with financial incentives in a positive sense, Datta (1996) discussed various negative fallouts of providing incentives at the shop floor. These troubles with incentives were attributed to different 'output bases' for each section in a company, conflicting viewpoints of workers and management regarding productivity-linked incentive schemes, and merging incentives into the basic wage structure which means more incentive to seniors irrespective of their productivity. He has, however, favoured the system being adopted by the Raymond Woolen Mills Ltd. of combining disincentive for lower production with incentive for higher production.
According to Kohn (1993), "rewards do not create a lasting commitment. They merely, and temporarily, change what we do". He has presented a six-point framework that examines the true costs of an incentive program and justifies his view that rewards do motivate people but only to get awards and not to alter their attitudes towards the work. With a comprehensive review of previous studies, his discussion was basically on the white-collar's productivity linked with incentives.

Although a large body of knowledge in the form of research findings and experiences on the current issue is available but this section concludes at this point with the presentation of only relevant literature which clearly identifies the need for the present study.

2.2 Need for the Study:

Based on the research findings, practical approaches of professionals, and academic discussions on various issues of productivity and incentives, a part of which has been summarised in the previous section, the inferences made are described in the paragraphs that follow.

No one method of productivity measurement and improvement has as yet been evolved to form a common basis of performance evaluation and comparison. Although incentives for workers, specifically financial incentives, have been emphasized as a major motivating factor for achieving higher productivity, no consensus on any particular scheme has been achieved.
Further, all studies referred to in the previous section have focussed on several important aspects of productivity as well as financial incentives. But no reference has been found specifically devoted to the treatment of these issues from the viewpoint of small-scale industries (SSIs). In the Indian context, where the typical problems are of a large population, under-employment and unemployment SSIs are generally accepted as a viable media to adopt labour-intensive means of production. SSIs, have also proved their worth by contributing 42 per cent in overall production, 35 per cent to exports, and 30 per cent to employment generation (SSS Today, 1996). It is, therefore, imperative that SSIs functioning be improved consistently. The Abid Hussain Committee (1997) has proposed many plans and provisions, including the enhancement of investment ceiling to Rs. 3 crore for the betterment of SSIs, still a lot more needs to be done related to the productivity aspects of the small scale enterprises (SSEs).

The facts and findings stated above give a clear indication that a study on productivity in SSIs and its improvement through financial incentives to workers may contribute positively to further reform the sector as is the need of today’s business world.

In line with the above discussion the topic of the proposed research has been decided as "Productivity Improvement in Small-Scale Industries through Financial Incentives to Workers".

2.3 The Problem Statement:

The problem thus identified and titled as above contains four
key concepts — productivity, small-scale industries, financial incentives, and workers. To better understand and work on the objectives of this study the concepts are elaborated below:

(i) **Productivity:** As discussed in the previous chapter productivity offers different dimensions when viewed in various perspectives. The common practical definition of the term productivity is, however, given as the measure of resource utilisation, generally, expressed as the ratio of output to input. Although partial productivity, by definition, is different from total productivity but in the context of SSIs, labour productivity alone is also treated as the total productivity for the purpose of analysis. It is justified with the assumption that resources other than labour, being less significant in labour-intensive organisations, may be kept constant.

(ii) **Small-scale Industries:** The group of industries consisting of small units, as defined later, is popularly known as small-scale industries (SSIs), small-scale sector, small-business and as small-scale enterprises (SSEs). SSI units are defined in terms of limits on (original) investment in plant and machinery. Till recently this limit was Rs. 60 lakh for non-exporting units and 75 lakhs for exporting and ancillary undertakings. The Abid Hussain Committee has now proposed the revised limit as Rs. 3 crore for all types of small industries named as small-scale enterprises (SSEs). The limit has again been revised and is
now Rs 1 crore. No change to this effect has, however, been made in the thesis as the revision was announced near the completion of the thesis.

(iii) Financial incentives: Psychologists call incentives as extrinsic motivators. Incentives are rewards to work better quantitatively or qualitatively or both. The motivation of employees to work harder through the introduction of incentives is linked with the hierarchy of human needs suggested by Maslow. Financial incentives like enhanced piece-rate, bonus, and other forms of monetary rewards are supposed to help workers satisfy their physiological and security needs which, in turn, motivates them to perform better.

(iv) Workers: In the context of SSIs, workers mean those working as skilled, semi-skilled or unskilled labour in the units. They are commonly known as blue-collar workers.

For improving productivity, the first requirement is to define and measure the same so that appropriate strategy for its enhancement can be developed. The study, therefore, attempts in its first few sections, to have an insight into the SSIs regarding their awareness and measurement on productivity. Productivity enhanced through financial incentives to workers is then taken in detail. Sandwitched between the two, systems of wage payments are also studied as financial incentives are supposed to work in accordance with the wages.
Objectives of the study are specified in the paragraph that follows.

2.4 Objectives of the Study:

A well-defined problem is half-solved. No problem should be dealt with as a whole, but in parts. In order to achieve the goals it is advisable to break the problem and specify the statement of the present research problem in the form of specific objectives. The objectives of the study are classified as primary and secondary and are stated below:

Primary Objectives:

(1) To probe the awareness of SSI units about the importance of productivity, its measurement and improvement.

(2) To study the role of incentives, in general, and of financial incentives, in particular, in productivity improvement.

Secondary Objectives:

(1) To study the common practices of SSI units regarding payment of wages and incentives to the workers.

(2) To study the trends of labour productivity in SSI units.

(3) To propose suggestions for productivity enhancement in SSI units.

2.5 Scope of the Study:

Multi-dimensional classification of SSI units and the wide spectrum of productivity measurement and improvement techniques made it
necessary to define the domain of the present study. Small-scale units, for example, are classified on the basis of the type of activity, the type of organisation, the type of industry they belong to, and whether they are ancillary or service enterprises. Productivity, on the other hand, may be measured as partial factor or total factor productivity. For productivity enhancement many techniques are available including financial incentives to workers. Therefore, the point-wise scope of the work is defined as follows:

(1) The study is confined to the SSI units located in Uttar Pradesh. Further only those cities/towns were selected which are either included in the clusters of SSIs (The Abid Husain Committee Report, 1997) or found convenient to approach.

(2) Major emphasis of the study is on manufacturing units as it appears to be easier and more relevant to measure productivity and study its relationship with financial incentives in manufacturing units.

(3) Units having fixed investment of less than 5 lakh on plant and machinery are not included in the study assuming them as uninterested units in productivity management owing to their size. Hence, our survey covers units of the relatively organised sector.

(4) SSI units with only proprietorship or partnership type of organisation are considered for the sample.

(5) The study concerns with only labour productivity and overall productivity.
No technique for productivity improvement other than incentives, particularly, financial incentives is considered in detail.

2.6 The Research Framework:

A framework for conducting the study was prepared in accordance with the nature of the objectives. It was divided into the following two parts:

2.6.1 Measures to Achieve the Objectives: Direct analysis and cross-classification of data are generally used as the measures for achieving the objectives of the study. Since the literature reviewed in this connection does not provide any direction to conduct study on productivity awareness, no hypothesis could be formed initially to probe this awareness of SSI units. Later on, the objective was refined into two formal hypotheses. These hypotheses along with the others stated in the next sub-section are tested statistically, using Chi-square test for independence. The remaining data was analysed directly in terms of percentage and sample proportions.

2.6.2 Research Hypotheses: The six null hypotheses tested to find the significance of studying the cross-classified data are listed below:

1. Awareness of productivity and its measurement in a unit does not depend on its age.

2. Awareness of productivity and its measurement in a unit does not depend on the amount of money invested in the unit on plant and machinery.
(3) Whether the productivity of a unit has been increasing, decreasing or otherwise over time is independent of the type of incentive the unit was giving to its workers.

(4) The effect of financial incentives on productivity does not depend on whether the incentive is combined with time-rate or piece-rate system of wage payment.

(5) The extent to which financial incentives improve labour productivity does not depend on the duration for which the incentives were provided.

(6) The owner's satisfaction level regarding gain in productivity through financial incentives does not depend on the type of financial incentive.

2.7 The Research Methodology:

This section presents an overview of how this research work is planned and completed referring to the research design, sampling process, data collection and its analysis.

2.7.1 Research Design: Exploratory, descriptive, and causal are defined as three general categories of research based on the type of information required and the volume of relevant knowledge pertaining to the subject available at hand. Since these categories of research are not mutually exclusive, any combination of them can, therefore, be applied to a research process according to the need. The nature of the present research work also suggests a similar kind of hybrid design.
To be specific, exploratory research is found appropriate for studying the first objective, descriptive for the next two objectives, and causal type of research for the fourth objective. However, the last one is based on the findings as well as the researcher's own judgement and observations.

2.7.2 Sample Design: The population under study can be defined as "all small-scale industrial units, basically of manufacturing type, working in the major industrial cities of Uttar Pradesh including the clusters of SSIs as classified by the Abid Hussain Committee, 1997" (refer appendix-3). Random sampling was not possible for this purpose due to non-availability of an up-dated and reliable sampling frame e.g. the list of SSI units supposed to be available at the District Industrial Centres (DICs). Continuing the search for any suitable sampling frame the researcher has also visited offices of the Development Commissioner (SSIs), New Delhi and the Directorate of Industries (U.P.), Kanpur. The efforts however proved futile. Convenience sampling was then found suitable for selecting a representative sample of the SSI units to provide stable results as precisely as possible.

In case of non-probability sampling the sample size decisions are made by calculating the size either as if it were a probability sample or else on an "all-you-can afford" basis (Tull and Hawkins, 1984). An estimate of the sample size is thus made using the method used for SRS sample from multinomial populations (refer appendix-2).

2.7.3 Questionnaire Design and Content: A structured questionnaire
was decided to be used as the device for data collection from a sufficiently large and representative sample of the vast population of SSI units under study. Considering those respondents who might be facing problem with English language it was thought to translate the questionnaire in Hindi also. The idea was later on dropped realising that it is actually the technical terms used in the questionnaire and not the statement of the questions which may cause this difficulty to the respondents. And since technical terms are generally more popular in English no such translation was made. However, assistance was provided in this regard wherever it was needed at the time of filling up the questionnaires.

In view of the need and objectives of the study the questionnaire contained 43 questions designed to gather information regarding the concepts and practices of SSIs related to productivity management. These questions were divided into eight sections which include profile of the responding units, profile of the respondents, productivity awareness and measurement, productivity improvement, measurement of labour productivity, systems of wage payment, incentive plans, and other related issues. The last section of the questionnaire deals with some opinion based open-ended questions to know the respondents' views on various productivity-related issues.

Questions in other sections were designed as either open-ended or close-ended depending upon the nature of the response expected. However, to make the response quick and precise, closed-ended questions were generally preferred.
The section on profile of the units contains questions regarding the location, year of establishment, major products, and investment on plant and machinery. To know the profile of the responding owners/managers information on their educational background, past and present experience, nature of responsibility, and training was gathered.

The other section of the questionnaire dealing with productivity awareness of the units consists of questions related to productivity ranking as a performance measurement parameter, reasons for measuring or not measuring productivity, and ratio of productivity. Productivity improvement methods being applied in the units and their benefits are dealt in the section on productivity improvement. Another section designed to collect data on labour productivity aspects of SSIs include labour productivity index, its trend over the years, and factors responsible for any decrease in labour productivity.

To study the structure of wage payments, questions were designed to obtain information on wage payment systems for regular and casual workers, basis of selecting a particular system, and policy of investments in wages. The major section of the questionnaire contained questions on incentive plans which include types of incentives, purpose for providing the incentives, the extent to which these incentives serve their purpose, their duration, effect on product's quality and schemes of financial incentives.

2.7.4 Data Collection: It was decided to cover as many cities and towns of Uttar Pradesh as possible from the list of those ten which are listed
as the clusters of SSI in U.P. by the Abid Husain Committee. In addition to this other cities were included in the sample where approach by any means was possible. Considering the expected reluctant response influenced by inhibitions in research studies in India a need was felt to first identify those friendly associates who had personal or professional contacts in SSIs. Those persons were then briefed about the research and method of data collection.

As a part of pilot study the questionnaires were distributed personally in Aligarh to the owners of few SSI units. After completing the pilot study, questionnaires were administered to various units through either the friends and relatives identified for the purpose or personally where direct approach was possible. In all 150 units were contacted for data collection. Only those 93 responses were considered for the study which were received by the target date set for data collection.

Along with the questionnaire a formatted sheet to obtain the figures on production and wages of the units for the last ten years was enclosed. However, except a few, the respondents did not complete the sheet because of either lack of time, non-availability of such data or simply not to disclose those figures.

2.8 Limitations of the Study:

Academic research on any topic is itself a continuous and,
perhaps, an endless process. Each part of that research, therefore, has to have some limitations in the form of either the resource constraints like that of time and money, or the self-defined scope of the study. This work too has some such constraints which, in fact, were not confined to any particular stage of the work.

The major limitations of the study are described below:

(1) While reviewing literature the researcher has tried his best to explore as many sources as possible for enrichment of the review, yet some matter may have been inadvertently overlooked. Such matter would have enabled a more critical identification of the research gap and setting of the objectives of this study.

(2) The sample size has been just sufficient to estimate population parameters with no more than 90 per cent confidence interval because the geographic distribution of the population was too wide to be covered within the time and financial constraints.

(3) Generally industrialists are found to be apprehensive of any possible misuse of the information a researcher seeks from them about their business. Further, the word 'productivity' and the meaning in its real sense is found uncommon among the SSI owners/managers which made them more reluctant in answering the questions.
It would indeed be fair to say that the number of units contacted were small, but it was not for lack of effort, but for want of time, *financial resources* and *informational support*.

This completes the overview of the framework within which the data is analysed to meet the objectives. The next chapter presents the analysis and interpretation of data.
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