CHAPTER-2
REVIEW OF LITERATURE

2.1Introduction

Manufacturing sector is very important to both the developing and advanced economies. In developing economies, it provides a pathway from subsistence agriculture to rising incomes and living standards. In advanced economies, it is a vital source of innovation and competitiveness, making outsized contributions to research and development, productivity growth and exports. But now the manufacturing sector is changing. It is bringing both opportunities and challenges. Literature review is very essential part of any research work. Literature finds gaps in current knowledge. Literature increases knowledge in a particular area of research. It helps you to discover research methods which may be applicable to your research work. This chapter deals with the existing literature related to the topic of this study. Many studies related to manufacturing sector have been reviewed in this chapter. The reviewed literature is divided under the following heads:

❖ **Studies in World context**
❖ **Studies in Indian context**
❖ **Inter-State studies**

2.2 Studies in world context

Adam (2012) examined the role of structural dynamics and transformation, especially in the form of increased manufacturing share in aggregate output, in accelerating growth and reducing growth volatility in Africa. Using data from 36 African countries, examined the key determinants of manufacturing share in aggregate output and its relationship with real GDP growth and growth volatility. The analysis covers the crisis period of the 1980s, the post -adjustment era of the 1990s, and the recent and ongoing

recovery period of the 21st century. Each of these periods is characterized by a specific development orientation and has experienced broadly different outcomes especially in terms of growth and social development. For estimating a modified form of the Chenery-Syrquin model of economic transformation to show the pattern of manufacturing transformation in African countries cross-section as well as time -series data has been used in econometric methodology of this paper. To study the relationship between the share of manufacturing value added in GDP and GDP growth, the investment rate, labour force, official development assistance relative to GDP, public expenditure as a percentage of GDP and growth in Africa's major trading partners, namely OECD countries are taken as the major determinants of growth in the model. He explained that economic transformation by increased share of manufacturing value added in aggregate output has the capacity to accelerate growth and reduce growth volatility. Strong backward and forward linkages between manufacturing and other sectors, promoting manufacturing can foster economic transformation, employment as well as wealth creation for poverty reduction. He suggested that industrial policy should not focus on specific sectors but rather continuously search for new and high profitable activities for productive diversification in manufacturing, agriculture or services. Alternative for effective industrial policy should endeavor to create a process that ensures continuous collaboration between the private sector and the government to identify constrains and remedies to structural transformation, rather than concentrating on outcomes. Promoting regionally integrated value chains and markets can be the most powerful tool for widen the scope of profitable investment opportunities, increase productivity by scale economies and enhance international competitiveness.

Gomes (2004) analyzed the literature concerned with issues related to the different facets of manufacturing organizational performance. This literature review is concluded by presenting a conceptual framework outlining the evolution of manufacturing performance measures and measurement in an organizational context. The conclusion of this study is that in the context of manufacturing performance measurement, practitioners and scholars need combine their efforts in order to validate what is known and build on it. The results of this join effort may lead to the development of practical

philosophies, systems and measures, which the practice of manufacturing performance measurement badly need.

Sengupta (2006) explained that as the economy evolves from manufacturing to services, it is important to understand whether the lesson learned in the manufacturing sector can be directly extrapolated to service supply chains. Unfortunately, the majority of existing supply chain research focuses exclusively on the manufacturing sector. To address this deficiency, the article compares the effort of traditional manufacturing-oriented supply chain strategies on the operational and financial performance of firms in both services and manufacturing sector. This study is a part of a larger research project exploring supply chain-related practices, their relevance to managers, and their impact on firm performance. In this study, data were collected from both primary and secondary resources. The primary data was collected using a traditional mail survey to capture several items of interest, including the SCM strategies, and the operational and financial performance metrics. The possibility of non-response bias was investigated through a series of t-tests comparing the responses from the first and second mailing. The results indicate there are several differences in the relative important of the strategies across the industry sector and have disparate impacts on perceived performance.

Cheng (2011) constructed a theoretical framework on the relationship among government regulations, manufacturing strategy and performance, based on the environment-strategy –performance paradigm. Using structural equation model and a sample of 135 SME of JIANGSU Province, he examined the relationship among government regulations, manufacturing strategy and performance, the result of which shows that government regulations have a significant positive effect on cost, quality and innovation; cost, quality and innovation influence financial performance significantly and positively; quality and innovation have a significant positive effect on non-financial performance, whereas cost has not. Finally, suggestions for SME-Development promoting policy and manufacturing strategy selection are putting forward.

Kasie (2013) investigated the relationship between multi-criteria performance measurement (MCPM) practice and business performance improvement using the raw data collected from 33 selected manufacturing companies. He used questionnaire survey, interview and observation of records for primary and secondary data collection. He applied a combination of both qualitative and quantitative research approaches in his study. His study finds out that companies which measure their performance using important financial and non-financial measures achieve better business performance. His study have provided significant indications that traditional performance measures which are solely relying on financial goals and indicators fail to enhance business performance of manufacturing companies. Strong emphasis has been provided for employee satisfaction perspective and employee training and development perspective as compared to other models devised before.

Arnold (2012) demonstrated the significant impact of a neglected factor: India's policy reforms in services. He examined the link between those reforms and the productivity of manufacturing firms using Panel data for about four thousand Indian firms from 1993 to 2005.Paper states that Banking, Telecommunications, Insurance and Transport reforms all had significant, positive effects on the productivity of manufacturing firms. Services reforms benefited both foreign and locally-owned manufacturing firms, but the effects on foreign firms tended to be stronger. A one-standard-deviation increase in the aggregate index of services liberalization resulted in the productivity increase of 11.7% for domestic firms and 13.2% for foreign enterprises.

Sola (2013) examined manufacturing performance for sustainable economic development in Nigeria with some objectives, those are to look at the growth rate and contribution of manufacturing to GDP, to examine trend in both manufacturing and employment, to determine the structure of capacity utilization, to determine factors influencing manufacturing performance. Panel data analysis was used on secondary data from 1980-2008 that was extracted from CBN Statistical Bulletin. The results indicate positive relationship between manufacturing and each of capacity utilization and import as 1 percent change in capacity utilization and import lead to 43081 and 3.8

percent change in manufacturing respectively. However, there is a negative relationship between manufacturing and each of investment, exchange rate, and export. A 1% change in investment, exchange rate and export lead to 0.04, 12729, 0.3 percent reduction in manufacturing respectively. This showed that investment, capacity utilization and import were major determinants of manufacturing performance for the period. The study concludes that the key to reversing the poor performance of Nigerian manufacturing is to provide incentives for firms to become more export oriented.

Karim (2009) presented a conceptual model proposing relationship between advanced quality practices, perceived manufacturing difficulties and manufacturing performances. A survey- based approach was adopted to test the hypothesis proposed in this study. The selection of research instruments for inclusion, in this survey was based on literature review, the pilot case studies and relevant industrial experience of the author. A sample of thousands manufacturers across Australia was randomly selected.

2.3 Studies in Indian context

Babu (2013) explained the extent of regional manufacturing performance in India by analyzing the trends in labour and total factor productivity for the organized manufacturing sector of 15 major Indian states. The study calculates the levels and trends in both partial and total factor productivity to measure partial factor productivity and labour productivity. Econometric determination of total factor productivity growth has proceeded with two approaches on the assumption of the existence of production function - frontier and non-frontier. In frontier approach aim is to find the bounding function i.e., the best obtainable positions given the inputs. A 'cost frontier' traces the minimum achievable cost given input prices and output and a 'production frontier 'traces the set of maximum achievable output for a given set of inputs and technology. The study finds significant growth in labour productivity across states, for the period 1980-81 to 2007-08. The growth of labour productivity is of the range between 4 and 10 percent, in states like Bihar, Maharashtra, Andhra Pradesh and Gujarat registering highest growth rates. It also finds that the states where capital stock grew faster register

faster growth in labour productivity and slower growth in employment. Estimates of total factor productivity growth show that for the entire period total factor productivity has improved across all the states except for two states, Tamil Nadu and West Bengal. Overall, it finds that labour productivity growth and TFPG follow more or less a similar pattern.

Krishna (2004) focused on patterns and determinants of economic growth in Indian states. It brings out the difference between the patterns of growth of developing and developed countries, since instability and volatility characterize the former. The study observes the issues of growth variability and volatility in Indian states. The coefficient of variation of year-to-year growth rates for a state is used as a measure of volatility. The most volatile states in India were Orissa, Rajasthan, Gujarat and Uttar Pradesh while the least volatile states were Punjab, Maharashtra and Kerala. The author finds that the dispersion of growth rates of states increased considerably in the post reform period from 15% in 1980s to 27% in 1990s. This analysis shows that agriculture has a positive impact on industrial and service sector growth.

Virmani (2011) tested the hypothesis of the J curve of Productivity and Growth following major liberalization and find it to be broadly supported by the data: Technological obsolescence, gradual adoption of new technology and learning by doing result in negative effects on measured productivity. They have taken the data from 1981-82 to2007-08 to trace the changing impact of reforms on productivity and output growth. They concentrated only on industries having an average share of more than 2%in the aggregate manufacturing output during the study period. In this study partial as well as total factor productivity are estimated for the manufacturing industries. Degree of variability in shares of factors across manufacturing sectors is found very wide. It shows that the manufacturing sector in India is skewed in favor of just a few large industries. They were able to demonstrate quite convincingly that total factor productivity growth (TFPG) in this sector had indeed followed a J curve pattern as a consequence of the 1990s reforms. It also found that partial factor productivity of capital, materials and services followed a J-curve pattern. The study decisively rejected

the leftist hypothesis that reforms and opening of the Indian economy damaged the Indian manufacturing.

Singh (2012) explained about economic reforms and industrial concentration in Indian manufacturing sector. The study of the concentration level in Indian manufacturing sector reveals the existence of high inequalities in terms of industrial development among Indian states. The study is using Annual Survey of Industries data over the period 1979-80 to 2006-07. The concentration level have been worked out using Lorenz curve based Gini coefficients and Herschman Herfindal index of concentration for each year. He uses six alternative variables for computing concentration levels among different states. According to study in India, trickle down and learning by doing process has failed at industrial front and Indian economy is moving toward loop sided development.

Pal (2014) analyzed the contribution of the manufacturing sector in the path of inclusive growth in the Indian economy in terms of both income and employment generation. The period of analysis was from 1983-84 to 2009-10. The paper find out that although there has been acceleration in the growth rates of NSDP at all- India level in the post –reforms period as compared to the pre-reforms periods, the growth rate of NSDP in the manufacturing sector has declined over the post-reforms years. This study also finds out the decline of growth rate of employment in the manufacturing sector of several states.

Mariappan (2011) estimated the economic returns to scale, marginal productivities of labour and capital inputs for two-digit level industries in India's unorganized manufacturing sector. The data is collected from National Sample Survey Organization (NSSO)'s quinquennial enterprise survey and Central Statistical Organization. He estimated returns to scale, elasticities and marginal productivities of labour and capital by a simple Cobb- Doulas Production Function in the unorganized manufacturing sector. Alternative formulations Translog and CES have been also applied pooling the five cross section data. It also estimated the value of substitution between labour and capital to test the validity of hypothesis of unitary elasticity of substitution. The labour

productivity and the capital intensity have shown increasing trends during the post-reform period in comparison with pre-reform period in all the selected Indian states. At an aggregate level, the results of CDPF show that the rate of return to scale is greater than unity in all types at industry level. Based on the CES production function, the elasticity of substitution between labour and capital is found to be greater than one in all types at industry. He finds that the Indian unorganized manufacturing sector at aggregate level suffers from decreasing returns to scale.

Evidence indicates that product quality and reliability are the main competitive factors for manufacturers. Design and manufacturing capability and on time delivery came second. Price is considered as the least important factor for the Australian manufacturers. Results shows that collectively the advanced quality practices proposed in this study neutralize the difficulties manufacturers face and contribute to the most performance objectives of the manufacturers.

Sharma (2014) presented that Industrial sector plays a vital role in the development of Indian economy because they can solve the problems of general poverty, unemployment, backwardness, low production, low productivity and low standard of living etc. The Indian Government had undertaken policy reforms since 1980, but the most radical reforms have occurred since 1991, after the severe economic crisis in fiscal year 1990-91. These reforms mainly aimed at enhancing the efficiency and international competitiveness in Indian industry. After nearly more than two decades of reforms, a question that has engaged the attention of the economists in recent times is what has been the effect of these economic reforms measures on the performance of industrial sector in the post-reform period in India. The present paper attempts to present the industrial development of India in pre reform and post reform period, and investigate the impact of globalization on industrial sector in India. It is find that industrial development in India clearly indicate that the average annual growth rate of Indian industry has declined in the post reform period as compared with the pre reform period. The fall in the growth rate was 7.8 per cent to 6.7 per cent. A decline is also observed in the manufacturing sector. It was 7.6 per cent in pre reform period and 7.0 per cent in the post reform period. Finally, it may be concluded that although the industrial sector of

India has grown after independence, the rate is below expectations, especially after globalization. Thus, the need for accelerated growth can hardly be overemphasized.

Pathak (1975) studied the problem of small scale entrepreneurs and the study was restricted to five major industrial groups, viz., textiles, chemicals, metal-based, machinery manufacture and miscellaneous industries located in the 15 out of 19 districts in the state of Gujarat. It was found that the more important problem areas were raw materials, finance and market, followed by Central and state Government policies along with labour and competition faced by small entrepreneurs.

Alagh (1982) have analyzed Indian industrialization during the seventies. Industry-wise growth rate had been calculated to show India's industrial performance whereas the states industrial structure was analyzed with the help of coefficient of specialization for 1960, 1965 and 1978. During 1965 to 1978, it was found that the states of Tamil Nadu, Karnataka, Punjab, Haryana, Gujarat and Maharashtra have shown remarkable increase in industrial diversifications. Like Rajasthan, Madhya Pradesh, U.P and Kerala have shown high growth rate in output and employment, but their industrial economies were not diversified.

2.4 Inter-State studies

Aggarwal (2010) analyzed the trends in productivity for the Punjab manufacturing for the period of 1991 to 2007. He stated that the productivity is a key performance benchmark for firm involved in manufacturing sector and it is directly relates to increase in profitability, lowering costs and suitable competitiveness. He used secondary data from ASI. He analyzed the Trends in labour productivity, capital productivity and capital intensity at two digit level for Punjab manufacturing.

Sharma (2012) focused on performance, potential and constraints of organized manufacturing sector of Punjab. His study covers the period of 1980-81 to 2002-03; it has been divided into two periods, pre-reform period (1980-81 to 1990-91) and post-

reform period (1991-92 to 2002-03).According to this paper there was higher trend growth rate of fixed capital in post reform period as compared to pre -reform period in organized manufacturing sector of Punjab. Organized manufacturing sector has 'jobless growth' and same momentum of output was not maintained in post reform period. Growth rate of emoluments was higher than that of its employment level in organized manufacturing sector. It implies that existing skilled labour force has been paid higher wages and perks rather than creating new employment opportunities for organized manufacturing sector of Punjab. In this study trend growth rate of important variable is calculated with the help of semi log linear relationship. Regression method has been used to calculate employment and output elasticities. Labour and capital were complementary in nature for organized manufacturing sector in post-reform period. Punjab's industry sector was and continues to be export based. According to this study, the situation demands for the restructuring of industrial pattern and process, this can help to resolve the structural problems of the existing model of growth.

Sehgal (2011) analyzed total factor productivity of manufacturing sector of Haryana. He analyzed the inter-temporal and inter-industry comparison of total factor productivity measured by Malmquist productivity index. He has taken the period from 1981-82 to 2007-08.Overall, he find out a productivity regress in manufacturing sector of Haryana. Technological change has found to be greater than efficiency change in all manufacturing industries.

Aneja (2013) focused on regional industrial disparities in Haryana over the period of 1990-91 to 2010-11. He used deprivation and principal component analysis (PCA) method to measure inter-districts industrial disparities. His study concluded that regional disparities in the industrial development in the state of Haryana were increasing over time. He proved this by increasing value of coefficient of variation of the constructed indices by DIM as well as PCI Method. He discovered that most of the industrial development in Haryana was concentrating on or near NH1 or near NCR areas.