

## **Identification of Constraints to Productivity Optimization in Central India's Manufacturing SMEs**

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### **Abstract**

Through this study the author found out the factors that restrain the growth and productivity of manufacturing SMEs of Indore and around. The methodology used by the authors is - literature review followed by data collection in the form of structured questionnaire from SME owners and managers of manufacturing units located in select areas of Madhya Pradesh (MP) India and finally analysis of this data through SPSS software. The results of this study expose the most common constraints which act as barriers in SMEs growth and productivity in MP. These constraints are: unavailability of supportive business and economic environment, lack of manufacturing capabilities, ineffective HRD practices and business strategy for production flexibility. Most SMEs think that government should develop some programs to improve the business and economic environment in the state which are required to enhance the productivity of SMEs and put more efforts to enhance the capacity and capability of SMEs by removing the present barriers. The government should motivate financial institutions and banks to supply suitable credit facilities to SMEs, improve the legal infrastructure, knowledge acquisition laws, and alleviate SME through easy loans for buying supporting technology to enhance their business. Many supporting programs like road shows and fairs to promote their product, help in technological knowhow, and availability of testing laboratories are also required by SMEs for their adequate development. This study becomes important due to the fact that there are very few researchers who have explored the factors constraining the growth and productivity of SMEs in MP. Also, it offers guidance for future research in a field of research that is still in its infancy.

**Keywords:** Productivity optimization, External environment, Internal Environment, Business Strategies, Organizational pressures

**JEL Classification:** 047

**Paper Type:** Research Paper



## Introduction

Literature review shows that small and medium enterprises (SMEs) play an important role in the growth of a developing nation (Dasanayaka et al., 2011; Hessels & Parker, 2013). Countries all over the globe put emphasis on supporting and strengthening their SMEs with the help of support institutions and programmes. The development of SMEs is therefore critical for economic growth and social solidity through the development of the people of the country as well as establishment of a noteworthy number of new jobs. (Gunerergin et al., 2012; Okpara, 2011; Zaid, 2012).

MSMEs in India are hugely diverse in terms of the variety of products and services, size of the enterprises and technology. This sector not only plays a significant role in providing employment opportunities but also does it at comparatively lower capital cost than large industries. It also helps in industrialization of diffident and rural areas which reduces regional imbalances and assures better distribution of wealth. MSMEs work as ancillary units to large industries and contribute significantly to the social as well as economic development of the country.

## Few Important Characteristics of the MSME Sector

- From the total manufacturing output approximately 45% comes from MSMEs in India.
- From the total export of India approximately 40% is contributed by MSMEs.
- About 73 million people are employed in more than 31 million units of MSME sector spread across the country.
- More than 6,000 products are manufactured by MSMEs including all kinds of traditional and high tech items.
- Total production contributed by the MSME sector was projected at 10,957.6 billion for FY15, an increase of more than 11% over the previous year.

A fast changing global economic scenario has simultaneously created challenges as well as opportunities for the MSMEs of India. On one hand, various opportunities have opened up to enhance the productivity of this sector and improve and reach to new national and international markets, but at the same time, these opportunities force the SMEs to improve their competence and capability to compete with the global market. The main reason behind this competition is mushrooming of new products at an unbelievable pace with lower prices and worldwide availability within a short time.

## Key Challenges faced by the MSME sector

The MSME sector faces several barriers which hinder their growth and they are unable to realize their full potential. The key challenges faced by the sector have been highlighted in the report of Prime Minister Task Force on MSME, 2010, these include:

- Lack of availability of adequate and timely credit
- High cost of credit
- Collateral requirements for credit
- Equity capital is not accessible to everyone so easily
- Procurement of raw material at a competitive cost
- Problems of designing, storage and packaging, and product display
- Lack of access to global markets

- Inadequate infrastructure facilities, such as water, power, roads, etc
- Inaccessibility to modern technology
- Lack of availability of skilled manpower for marketing, manufacturing and services, for SMEs
- Complicated labor laws and complicated procedures associated with compliance of laws.

In today's scenario productivity optimization is a buzz word in manufacturing industries. As the competition is growing the only way to work in a profitable manner for an industry is to optimize its overall productivity, which, in turn, depends on the optimal use of the resources available to SMEs. But due to lack of resources and money crunches it is very difficult for small and medium scale industries to focus on improvement of its overall productivity.

From literature review, the authors found that the overall productivity of SMEs mostly depends on external environment available to the SMEs, internal environment of the SMEs, how SMEs handle the organizational pressures and ultimately on its business strategies. In the present paper, authors have tried to find out what are the factors working as barriers of productivity optimization of SMEs? What is the current status of external working environment available to the SMEs for their growth and survival in central India? How they manage their Internal environment? What is the status of their business pressures from market and customers? And what is their focus area when they talk about their business strategies? This paper helps industrialist, government, policy makers where they have to improve to optimize the productivity of SMEs in central India.

## Literature Review

The study is an attempt to find out the factors which affect productivity and suggest ways to remove constraints SMEs are facing to optimize their productivity.

Van Niekerk (1998) says that productivity can be articulated in various ways, such as, in physical terms: components per man-hour, in financial terms as value added per rand of labor or value added per rand of capital cost. Niekerk adds that while productivity measurement is important, the commitment of management to improve productivity is the most important element. According to Maskell (1991), individuals should not be the focus of productivity measurement, rather productivity should be a measure of a team, or a company, or a society. He emphasized that productivity improvement results in growth of the organization and in turns growth of all the people in the organization. To realize extravagant productivity growth, people should be given the chance for their personal growth; they must feel enriched at work and challenged everyday to strive for continuous improvement in their work. Kobayashi (1998) feels that "Factory revolution" for increased productivity and a stronger organization has become a prerequisite for the stable and sustainable development of manufacturing companies in today's dynamic industrial world. Fighting for survival in this competitive world, SMEs must continually set and strive for new goals.

Deshmukh et al. (2008) provided a framework, in which they revealed that the market condition will be major guiding force for deciding strategies and priorities. Based on these priorities, different processes and management practices have to be adopted. Effective implementation of these practices will ultimately lead to improvement in performance. Processes and performance have to be reviewed with respect to benchmark standards continuously in order to develop dynamic strategies.

Bruno Fabi et.al (2010) suggested that the development of HRM capabilities, particularly with regard to informing, integrating and rewarding employees, enables a manufacturing SME not only



improve its productivity but also significantly enhance the effect of its R&D and technological capabilities on the same productivity. Investments in R&D and technology cannot alone lead to superior performance, without investing in human resources. It can thus be seen as a way for SMEs to add value to their different business processes and to improve their adaptive capacity.

Chad (2011) argues that the key drivers of productivity naturally make resolution in productivity levels at plants and firms. The main key drivers include learning-by-doing, innovative efforts, investment in higher quality managerial, labor, or capital inputs. One easy way to explain this resolution is to think of these productivity enhancements through producer's investments in intangible capital in the organization, if one really could measure intangible capital. Yohanis Rante and Ari Warokka (2013) performed a study on local government behavior on firm's productivity and they argued that the effects of local culture and government's role were stronger and significant through the intermediating variable entrepreneurial behavior. This indirect influence shows that self-employed behavior was the only medium to enhance, improve and strengthen the SMEs performance.

According to Singh and Singh (2012) many organizations have demonstrated significant improvements in manufacturing sector, achieved through implementation of continuous Improvement (CI) practices. Continuous Improvement concept can be employed to accomplish fundamental improvements in manufacturing performance of the organization in the competitive world. This can facilitate the manufacturing organizations to achieve their goals.

Firstbiz (2014) published that SMEs are the powerhouse of India. The report of the survey revealed that a lot of work is to be done for their welfare, sustainability and growth. Today's SMEs are facing lot of challenges which are not only related with generating capital but also insufficient human resources, lack of modern technology, and scarcity of adequate information.

India is ranked at 100 in The Ease of Doing Business Index 2017 (with respect to 134th in 2013), amongst a total of 190 countries. The index takes into account 10 indicators, a majority of which are associated with regulatory norms. This draws attention to the potentially adverse effect of these norms on the general business environment and subsequently, on the performance of MSMEs.

Lack of information and awareness among business owners regarding governmental benefits and schemes is a major reason for their sub-optimal performance. There is a recognized and "urgent need of a dynamic and self-sustaining culture of innovation" (FICCI Summit, 2012) for the development of SMEs. According to the FICCI report, only 19 percent firms were identified to be innovating. On the Global Innovation Index, India was ranked 62nd. Most of the MSME owners underestimate the necessity of research and development, most probably due to the financial crunch. One bigger problem which is reported by most of the MSME owners is non-availability of skilled labor. Skilled and educated labors are attracted by the job security and higher wage offered by larger enterprises. Retention of labor is another challenge. Many SMEs believe that corruption is "part of the way things work in the country". SMEs pay bribes to public officials and additional payments much more frequently than larger enterprises to get things done. These payments are exorbitant when compared to their revenue, than large enterprises (UNIDO, 2007).

From the literature review it is clear that many authors talked about productivity improvement of manufacturing in different domains. Some are talking about their manufacturing strategies and some about govt. behavior and culture. Some of them emphasized on continuous improvement and automation as well as their market orientation and HRM capabilities. A few of them talked about the hurdles and barriers also which hinder the productivity of manufacturing. But synthesis

of all these factors is necessary to have a view about overall barriers, since productivity can be optimized if and only if all the areas and factors work in synchronization for productivity improvement.

### **Areas and their factors that affect Productivity of SMEs**

From the literature review it was found that the total productivity of the manufacturing SSI's depends on a wide range of aspects of the enterprise, beginning from the leader to the worker, manufacturing to marketing, market pressures to business strategy planning and many more. These aspects can be broadly classified in to the following areas.

1. **External environment** which includes social and cultural environment, technological environment, business environment and ultimately economic environment of the country/ state/district.
2. **Internal environment** which includes leadership, HRD practices and organization culture, extent of good management practices in the SSI, market orientation of the SSI and ultimately the manufacturing capabilities of the SSI.
3. **Business pressures** from the market and customers related with cost, quality, delivery, flexibility, innovations etc.
4. **Business strategies** of the SSI in order to cope up with the constraints imposed by the above three.

Most of the time SME owners act as one man army and the whole organization is influenced by their behavior, attitude and decisions. These factors are the foundations of optimization of the productivity of the SME and are entwined into the fabric of success of the organization.

### **Research Methodology**

Followed by literature review and seeking help of personal experience of few SME managers and Owners, a draft of questionnaire was initially prepared. This was followed by a pilot survey and personal meetings with a few SME entrepreneurs or managers for getting a more structured questionnaire. The main problem which authors feel occurred is that small entrepreneurs do not understand the language and terminology used in the questionnaire, which is simplified a lot after pilot survey. For example if they asked about the '5S' tool most of them are not responding, instead of this if they are asked that 'Your workplace is shiny and clean?' or 'How much time you spend to find a tool?' they are able to answer. In the second round, after considering the results of the pilot survey, resulting in modifications the modified questionnaires were filled by personally meeting entrepreneurs or through telephone. This requires taking appointments from the industry personnel and the success rate was 12 %, 58 out of 500. The most difficult part under the circumstances was to get appointments and to visit the industries. Most of the entrepreneurs were unable to give objective data due to lack of organized accounting, resources, and other issues related with privacy. As mentioned earlier in India, generally SME's are the single man driven army with the owner involved in lot of activities, so it is really difficult to get time from the targeted respondents for filling a four page long questionnaire. Data is collected through convenience sampling and snowball sampling. Here our target population is SME owners and managers of SME's in and around Indore, from the Sanwer road industrial area, and the surrounding areas Dewas and Pithampur. Due to the restrictions on entering campuses of industries and attitudinal disinclination of people for giving data snowball sampling method is the only way which was found suitable for data collection. This questionnaire is about their experiences for external environment, internal environment, business pressures and their

strategies for their SME, so the response bias is due taken care by them only since they know better about their Industry. SPSS package is used for diagrams and descriptive statistics.

## Result and Discussion

From the data given in Table 1 it can be observed that the business environment is poor in Madhya Pradesh, India. It has only value 2.7, which is just above the average. In fact except socio cultural environment, economic environment and technological environment have underprivileged performance. These are ranked by various industrialists of small and medium scale industries on various parameters.

**Table 1: Statistics provided by SPSS for different factors responsible for the Optimization of SMEs Productivity**

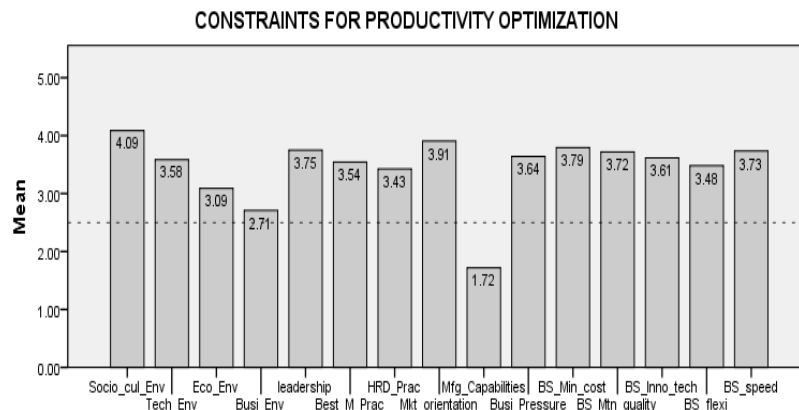
Areas responsible for productivity improvement	Factors responsible	Average of responses given by respondents
<b>External Environment</b>	Socio cultural Environment	4.0862
	Technological environment	3.5847
	Economic environment	3.0886
	Business environment	2.7097
<b>Internal Environment</b>	Leadership	3.7500
	Best Management Practices	3.5428
	HRD Practices	3.4262
	Market orientation	3.9052
	Manufacturing capabilities	1.7192
<b>Organizational Pressures</b>	Pressures from market and customers	3.6408
<b>Business Strategies</b>	BS to minimize cost	3.7931
	BS to maintain quality	3.7184
	BS for Innovation/Technology Leadership	3.6144
	BS to maintain Flexibility	3.4810
	BS to maintain speed	3.7328

Analysis shows that the manufacturing capability is the under privileged factor in internal environment. SMEs are not able to invest in manufacturing capabilities and automation, perhaps due to their financial crunches. The strong factors that come out are socio cultural environment and market orientation, which have a score of 4.08 and 3.9 respectively. This is a proud moment for the state that the socio-cultural environment is ranked as the highest, which proves that MP is good for investment and the social environment is excellent for the manufacturing industries. Perhaps marketing is thought of as first priority by small entrepreneurs, since revenue is generated by marketing only, they are good at market orientation. But at the same time manufacturing capability is their last priority, until and unless they are stuck out for some process and up gradation is necessary, they would like to work with the same infrastructure. They are very busy with their marketing and financial chaos with a lesser amount of manpower hence the manufacturing capabilities and management practices are their least attention areas. Definitely with SMEs characteristics their bread and butter is marketing and production. Afterwards if they get time and money they would like to think about the areas like manufacturing capabilities and management practices like 5S, KAIZEN, LEAN, TQM etc. Sometimes unawareness about these terms prohibits the people to adopt them. When authors talked with Managers/owners during

the data collection, the owners/managers shared that even viability of the small businesses would not support them to adopt higher level of automation like automatic QC tools, Automatic material handling equipments, ERP etc., and they have to depend on manual mode of working.

Organizational pressures also have the score of 3.64 which is not good enough. In business strategies, less concentration is on flexibility of production and innovation and technology strategies, which proves that SMEs does not strategise much for innovation and technological up gradation, which is the buzz word for corporate and others to make fast and sustainable growth. This proved as a barrier in productivity growth of SMEs, they must take initiatives in these areas of flexibility and should make strong strategy for technological up gradation, which can be studied in detail from figure 2 to 5, and clarifies the barriers graphically.

**Figure 1: Major Constraints of Productivity Optimization**



**Figure 2: Detailed Constraints from External Environment**

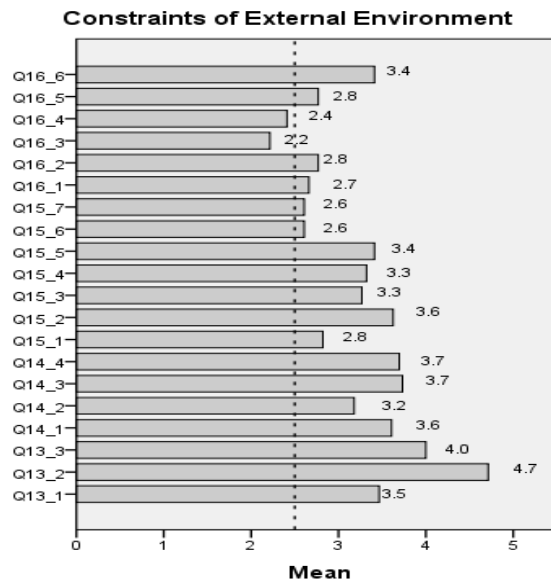


Figure 3: Detailed Constraints from Internal environment

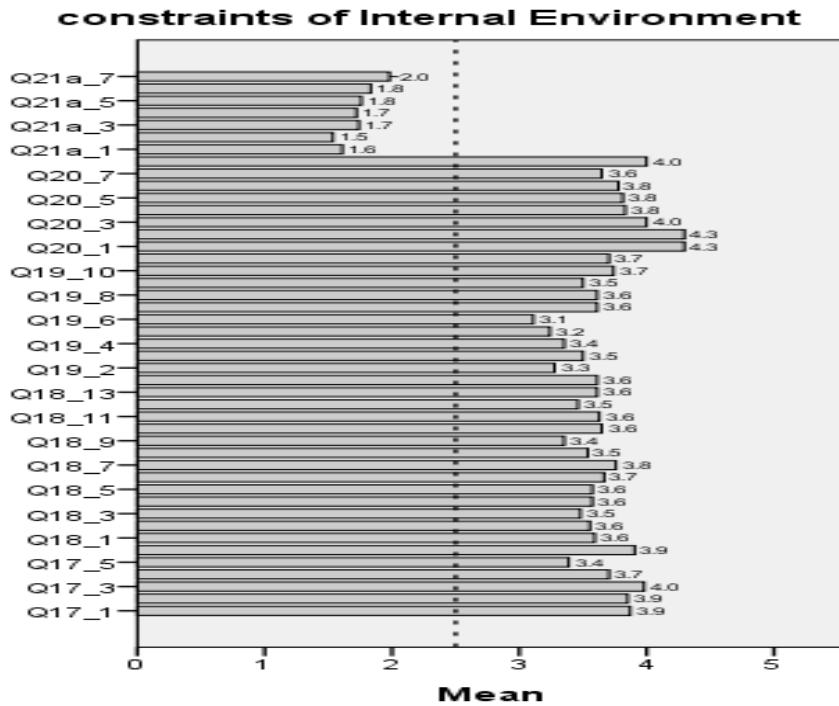
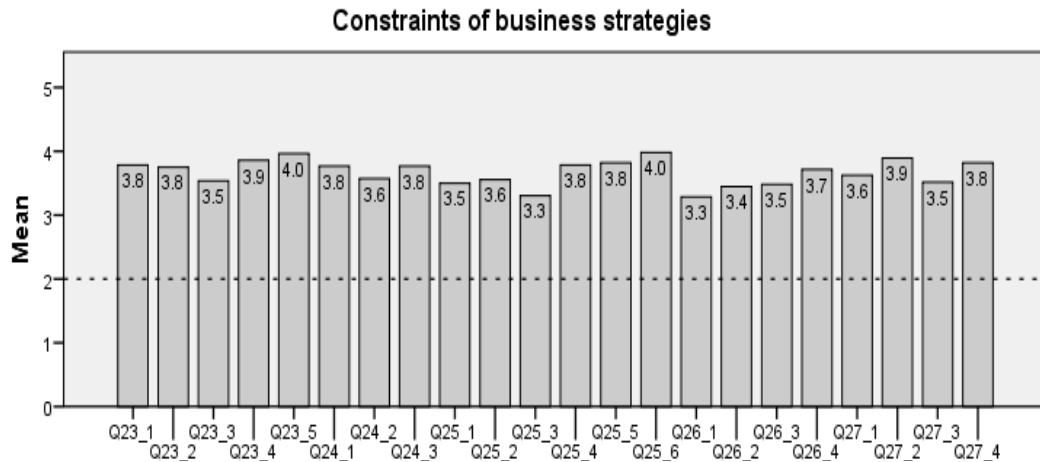


Figure 4: Constraints from Organizational Pressures



**Figure 5: Detailed Constraints of Business Strategies**

The graph attached shows the extent of particular factor and the low value represents the lack of that particular item and hence it would become a barrier in productivity optimization. Like in Figure 1, manufacturing capability proves the biggest constraints in productivity optimization of SMEs. Similarly business environment in Madhya Pradesh (MP) also proves to be a constraint for productivity optimization. In Figure 2 to 5 authors analyzed each area specifically in detail to find out where the problem lies and what items are to be improved to optimize the productivity of SMEs in MP.

From Figure 2 it is seen that the biggest constraints from external environments which have the scores less than 3 are

- 1 - Availability, growth and support of Clusters and networks
- 2 - Availability of incentives & subsidies to support SMEs
- 3 - Availability of technological know-how to SMEs to identify and invest in appropriate technology, R&D, technology transfer
- 4 - Govt. organizes trade fairs and road shows to share information and to provide a platform for SMEs interaction
- 5 - State Govt. attitude towards development of SMEs
- 6 - Availability of training and development programs through Govt.
- 7 - Availability of reformed Labor policies particularly complexity of labor laws and procedures for compliance of various labor regulations
- 8 - Domestic tax regime, particularly advent of GST and direct tax code

Figure 3 represents the factors from internal environment and the items which has value less than 3 are

- 1- Machine tools, 2 - Material Handling, 3 - Innovation /Design, 4 - Quality Management, 5 - Production Management, 6 – Maintenance, 7 - Human Resources

Out of above all, Human resources has the maximum value, since most of the SMEs use mix of human resources like skilled, semiskilled and unskilled. Min 1.5 is given for material handling as most of entrepreneurs use manual material handling. Rest of the items have value greater than 3

as internal environment can be improved by SMEs by their own. After analysis it is observed that the items which have value between 3 to 3.5 can be taken as the items which are to be improved first to optimize the productivity, they are as follows.

- 1 - Everyone is self-disciplined and committed to work
- 2 - Visual management & control (using color codes, charts, display Boards etc.)
- 3 - Outsourcing for lower production cost and to focus on core competencies
- 4 - Identification of Bottlenecks through root cause analysis
- 5 - Extent of promotion of labor education
- 6 - Extent of training provided to employees
- 7 - Reward schemes to recognize contribution and outstanding performance
- 8 - Availability of scientific and technical manpower
- 9 - Financial Incentives (Individual or group)
- 10 - Role perception/Role clarity

These proved to be the bottlenecks for productivity optimization. Above items belong to two factors which are best management practices and Organizational culture and HRD practices. These factors are the proved factors from my literature review which help in productivity optimization of any organization. So the SME should also work in the direction of improvement of these factors.

Figure 4 represents organizational pressures which have a single factor as pressures from market and customers. Most of the SMEs have pressures to reduce cost and to reduce delivery time, the lowest pressure is to deliver in small lots.

Figure 5 represents the emphasis of SMEs owners in last three years business strategies in the areas of cost reduction. Quality maintenance, innovation/technology strategies and strategies related with flexibility of production and delivery speed. Out of the said no one has the score below 3, means SMEs are good in strategies but the following has the score less than 3.5 and can be improved first to optimize the productivity.

- 1 Reduction of inventories
- 2 Research and development
- 3 Information technology and ERP systems
- 4 Use of IT for fast feedback and rapid dispersion of information
- 5 Investment in technologies
- 6 Use of Information Technology for fast feedback & rapid dispersion of information

SMEs which are poor in above areas, can improve their capabilities to optimize their productivity, improve inventory management for cost reduction, they should invest more in research, development and ERP systems for their day to day activities either related with speed or production.

## Conclusion and future implications

From the above analysis it is clear that SMEs have better prospects of flourishing in MP in last three years, yet there are many areas which need a lot of improvement and turn out to be the

priority improvement areas like business environment, manufacturing capabilities, emphasis on best management practices, HRD and organization culture and business strategies for technology/ Innovation, from this research. These are either related with Govt. and external environment or related with their internal environment as well as their strategies. SMEs should look towards their internal weaknesses and should work on them to optimize their overall productivity, while Government and SME development authorities like CII, FICCI, and ASSOCHAM etc. should work towards improving the economic and business environment in MP to flourish SMEs at their fullest without hurdles. The infrastructure should be improved and technological environment would also become better with the help of educational institutes. Government should support SMEs for their financial needs and provide them easy finance options for technology up gradation. These factors help the SMEs owners/Managers from where they should start to improve and hence optimize the SMEs productivity. First SMEs should focus on the factors which have very less score and then come upon the next higher score for improvement. If SMEs would work on constraints in a strategic manner then definitely SMEs in MP would become the main sources of revenue for the government and the state would become the highest GDP state in India.

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