

## **Growth Prospects for MSMEs in India with Reference to Industry: 4.0**

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### **ABSTRACT**

*The significance of MSMEs in India could be seen in terms of its spread all over the economy. The world is now witnessing the fourth industrial revolution in the form of Industry 4.0 However significant numbers of manufacturing enterprise in India are still in Industry 2.0 stage with respect to technology. The growth of this sector requires a significant push in terms of technical knowhow, funds for adopting new technologies and skilled manpower to work on it. Technological up gradation is not an end in itself. Its possible impact on the young India where nearly 61% cent of India's Population is likely to be in working age group of (15-59) requires consideration. Through this paper an attempt is made to understand the significance of employment generation in a developing economy like India. To review the challenges faced by MSMEs in adopting industry 4.0 technologies, to identify efforts taken by Indian government (for MSMEs) to meet the challenges of 4.0. The findings of the study reveals that despite the efforts taken by the government the MSMEs still has a long way to go in order to reap the benefits. The major limitation of this study is that it is a desk research. The study is concluded with the need to develop and adopt an appropriate strategy wherein India could reap the benefits of demographic dividend along with Industry 4.0.*

**Keywords:** MSME, Technology, Industry 4.0, Demographic dividend, Employment generation.

### **INTRODUCTION:**

India has the largest young population in the world, and in order to seize this opportunity, it needs to increase employment for its workforce at a much more rapid rate than ever before. The significance of manufacturing industry in solving this issue is widely recognized. Further MSMEs within manufacturing sector is looked upon to make a significant contribution to employment generation. However MSMEs ability to adapt to the new technological change is constrained by several factors like lack of technical knowhow, shortage of funds and poor access to skilled manpower. The development of technology through evolution of Industry 4.0 (Fourth Industrial Revolution) further adds to the already existing challenges of MSMEs. The Government of India has been taking several measures to promote the adoption of Industry 4.0. The adoption of industry 4.0 is expected to play a very important role in the development process but it also bring along with it a shift wherein machines shall replace people for most of the jobs. For a high wage economy no doubt it's a boon but for an economy like ours rich in human resource and which is like to face the bulge of young population it is not. The impact of Industry 4.0 as an appropriate strategic measure is yet to be witnessed in the Indian context. With automation not just the blue collar jobs but even the white collar jobs are at threat. The impact of industry 4.0 on MSME is to be studied in greater depth rather than blindly following the foot prints of developed nations.

### **Objectives:**

- To understand the significance of employment generation in the Indian context
- To review the challenges faced by MSMEs in adopting industry 4.0 technologies.
- To identify the efforts taken by the Indian government for MSMEs to meet the challenges of 4.0

**RESEARCH METHODOLOGY:**

The present study is exploratory in nature and relies extensively on secondary data like journal, books, and published reports of the Government. The scope of this study is confined only to MSMEs in the Manufacturing sector. The major limitation of this study is that the findings are not substantiated with primary data.

**LITERATURE REVIEW:**

Anandi Iyer, (2018). 1 Suggest a few critical methods for emerging economies to leap frog into industry 4.0 using India as a case study. conducts a desk research on the developments on Sustainable Manufacturing processes across the world, and suggest a few critical methods for emerging economies to leapfrog into Industry 4.0., using India as a case study.

Kadri-Liis Kusmin 2 in his analytical article on Information society Approach & ICT process industry 4.0 views Industry 4.0 as a combination of several novel technological advancements. According to him the gravest mistake is unwillingness to take part of these changes, because the future of Industry 4.0 is not yet clear – its success or failure of lies in the hands of all the stakeholders.

R. Sreedharan & A. Unnikrishnan, (2017). 3 Currently Industry 4.0 is a new concept and there is a lack of efforts in the systematic review of the topic. this paper addresses the gaps by studying in depth the research articles from different journals and conferences on the topic Industry 4.0 thus making it easier for future researches.

B .S. Sagar & P. D. Jadhav, (2017) 4 identifies the importance for India to adopt Industry 4.0 technology and get adapted to the same. Address the impact of Industry 4.0 technology in India.

Confederation of Indian Industry’s Report on India’s Readiness for Industry 4.05 views In order to reap the benefits of Industrial revolution, leaders of industrial enterprises must have Industry 4.0 at the top of their agenda. However, implementing an Industry 4.0 production environment will be an incremental journey over several years that will include modernizing legacy systems.

According to CGI Report,6 to reap the benefits of this revolution, leaders of industrial enterprises have Industry 4.0 at the top of their agenda. However, implementing an Industry 4.0 production environment will be an incremental journey over several years that will include modernizing legacy systems. Once undertaken, the possibilities of applying Industry 4.0 concepts and technology are unlimited.

According to Parthajeet Das, (2017)7 through his study makes an attempt to focus on the huge growth potential and opportunities available in India for development of MSME sector and to identify important issues and challenges and offer suggestions to address the same.

**DISCUSSION:**

In an article, one billion dreams guide me8. Late Mr Abdul Kalam (former president, India) is asked: “can we call our growing population our strength”. He replies: “certainly yes, provided we give dignity to everyone down the strata, with good education”. India has the largest young population in the world, with over 60% of the population in the working age of 15-59 years. A quarter of the projected increase in global working age population between 2010 and 2040 is expected to occur in India, reflecting the addition of 300 million working age adults. If India has to seize this opportunity and exploit its demographic dividend, it needs to increase employment for its workforce at a much more rapid rate than ever before. Projection of demographic profile of India’s Population age wise is given below. Nearly 64% of the Population is likely to falls in 15-59 age categories by 2031.

**Table 1: Projection of Demographic profile of India’s Population age wise. (In percentage) \*Population projection by World Bank.**

Age group	2001	2011	2021*	2031*
0-14	35.3	30.75	26.52	23.65
15-59	56.93	60.29	63,2	63.59
59 & above	7.71	8.9	10.26	12.74
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Data compiled from the Report on “youth in India” 2017.9 CSO (MOSPI)

According to the Fifth Annual employment unemployment survey(2015-16)<sup>10</sup> the unemployment rate reflects the portion of the labor force which was available for work during the given reference period but did not get work. The unemployment rate derived based on Usual Principal Status approach (UPS) is also sometimes called as “chronic unemployment” as the persons remained unemployed for major part of the period for which they were available. Under the usual principal & subsidiary status approach (UPSS) a person who has worked even for 30 days or more in any economic activity during the reference period of last twelve months is considered as employed under this approach. The Unemployment Rate based on Usual Principal Status approach was estimated to be 5 per cent at the All India level or in other words about 5 per cent of the persons who were available for work during the reference period could not get work and remained unemployed.

**Table 2: Unemployment Rate based on UPS & UPSS approaches for persons aged 15 years & above (percent)**

Approach	Male	Female	Transgender	Person
UPS	4.0	8.7	4.3	5.0
UPSS	3.0	5.8	3.2	3.7

**Source:** Report on Fifth Annual Employment - Unemployment Survey (2015-16) Volume I

The ILO released a report "World Employment and Social Outlook Trends - 2018"<sup>11</sup>. As per the report, it is projected that the number of unemployed persons in India is expected to rise from 18.3 million in 2017 to 18.6 million in 2018 and 18.9 million by 2019 but the unemployment rate is expected to remain static at 3.5 per cent.

**Table 3: Projected unemployment rate in India**

Year	2017	2018	2019
Million	18.3	18.6	18.9
Percentage	3.5	3.5	3.5

**Source:** World Employment Social Outlook Trend 2018. ILO

The manufacturing sector is considered to be one of the important sectors of the Indian economy. Its significance could be seen in terms of its spread over the economy, large size of SME’s, Employment and income generating capacity and its value addition to our natural and agricultural resources. However when we review the changes in this sector over the last decade, its growth is not appealing. Agriculture is said to have near zero employment elasticity. Any addition to the existing labor force in agriculture would simply result in disguised unemployment or under employment (Report on Employment & Unemployment Survey (2009-10))<sup>12</sup>

Every job created in manufacturing sector has a multiplier effect of creating two to three additional jobs in related activities. Therefore the thrust is on the manufacturing sector (National manufacturing policy2011)<sup>13</sup>

According to Radhicka Kapoor, (2014)<sup>14</sup>.The rising capital intensity of production in both capital and labor intensive industries partly explains the limited contribution of the manufacturing sector to employment generation. According to Khan & Dalu, (2015)<sup>15</sup>.Micro, small and medium enterprises (MSMEs) are considered as the catalyst of economic development and social development of developing countries

It is seen that 31% MSMEs were found to be engaged in manufacturing activities, while 36% were in Trade and 33% in Other Services. The report "Growing the global economy through small to medium enterprise: The G20 SME conference"<sup>16</sup> highlights that MSMEs "are the most common businesses found across most of the world's economies. They also make a significant contribution to employment and are of interest to governments, primarily for their potential to create more jobs." MSMEs are complementary to large industries as ancillary units and this sector contributes significantly in the inclusive industrial development of the country (MSME Annual Report 2017-18)<sup>17</sup>. According to Annual Report of MSME 2016-2017<sup>18</sup>, the Ministry of MSME is playing a pivotal role in encouraging entrepreneurship, employment generation, and livelihood opportunities and upgrades the competitiveness of MSME in the changed economic arena.

The SWOT ANALYSIS of the manufacturing sector as done by National Manufacturing policy<sup>19</sup> identifies one of the weaknesses of manufacturing sector as Limited ability to adopt technology due to cost and accessibility. This is true for both large size and MSMEs.

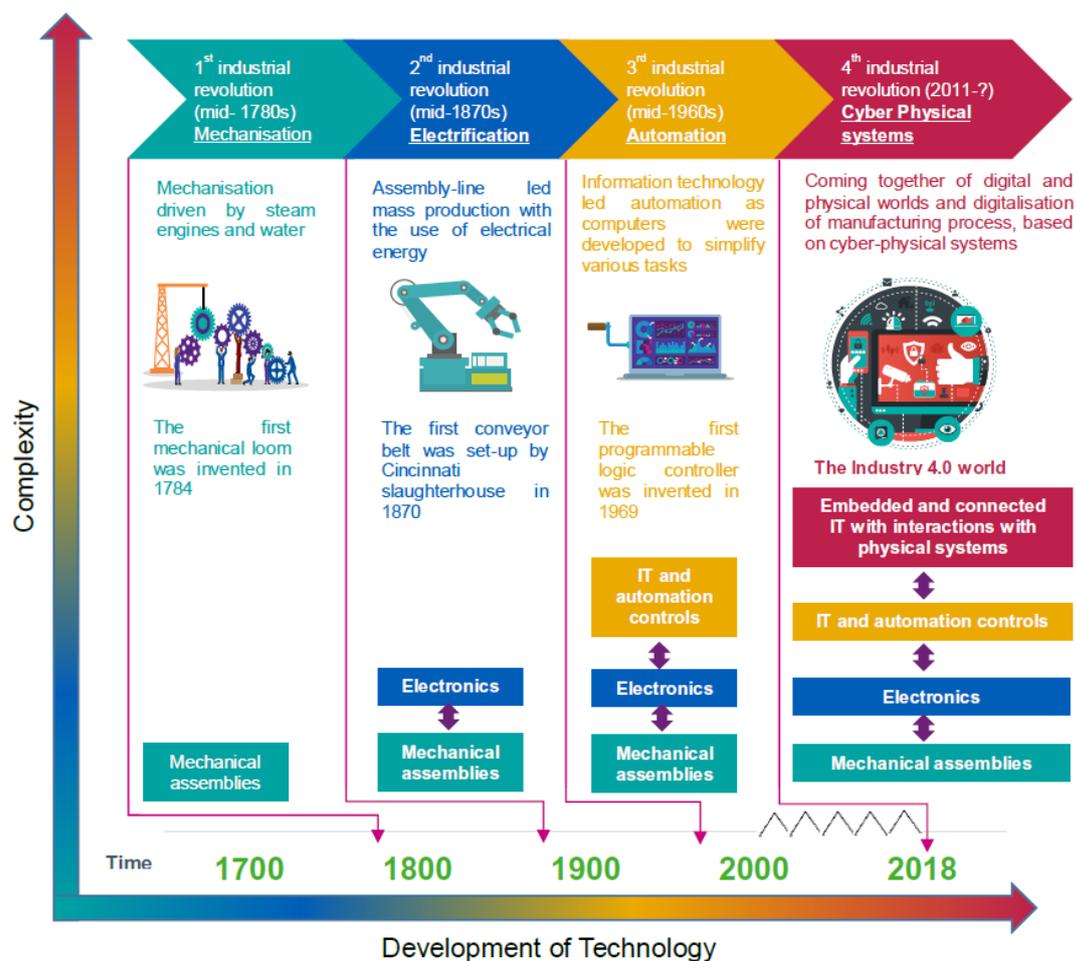
Technology is one of the central and most significant elements of an organization. Technology is said to be the result of enhancement of economic, social and psychological need of human being. The three industrial revolutions have brought about significant technological development across the industries. The world is now

witnessing the fourth industrial revolution in the form of Industry 4.0

The concept of Industry 4 was first proposed in 2011 at Hannover fair. It was part of Germany’s High tech strategy 2020 action plan. The term “Industry 4.0” means the smart factory in which smart digital devices are networked and they communicate with raw materials, semi-finished products, products, machines, tools, robots and men. This industry is characterized by Flexibility, efficient use of resources and integration of customers and business partners in the business process. Industry 4.0 is the digitalization of manufacturing process. Key technological requirement of Industry 4.0 are as follows:

- **Internet of things (IoT):** To enable real-time machine to machine interaction.
- **Big data analytics:** To facilitate real time decision making.
- **Cyber security:** To ensure data security and secured communication
- **Cloud computing:** For ensuring computational, storage and network capabilities.
- **Additive manufacturing:** To help reduce lead time and improve customization.
- **Robotics:** To provide for automation of manufacturing process and help improve efficiency.
- **M2M:** To facilitate communication of machine and software.

**Figure 1: Evolution of Industry 4.0**



Source: BRICS India 201621

The fourth industrial revolution is making headway globally. Some of the Challenges faced by SMSEs in adopting Industry 4.0 are Firstly many manufacturers are still unaware of Industry 4.0. A Significant numbers of manufacturing enterprise in India are still in Industry 2.0 stage with respect to technology. Many MSME are far behind 2.0 as well because of lack of awareness, access to technology and due to shortage of huge funds. The MSME has almost nil access to technology of 4.0. For the true value of Industry 4.0 to be unleashed, it has to transcend large manufacturing companies and become accessible to the 50 million plus enterprises that make up India’s MSME sector, accounting for about 45 per cent of total manufacturing output and 40 per cent of total export. (KPMG report.2018)22.Issues impacting technology adoption by MSME in India Low level of investment in R&D.

- Lack of access to technical information.
- Lack of linkage with R&D institutions.
- Unavailability of technically trained people.
- Isolation from technical hubs.

Government of India has taken several initiatives to promote growth of manufacturing sector in India. Especially with reference to MSMEs like a. Union budget 2017-18 reduces the Income tax rates to 25% for MSME companies having turnover up to 50 cores, Plans to exempt MSMEs from inspection related to Labor law to encourage entrepreneurship, Creation of technology Acquisition and development Fund (TADF) under the National manufacturing policy to facilitate acquisition of clean, Green and energy efficient technologies by MSMEs. Pradhan mantra Mudhra yojana(PMMY) to provide loan to entrepreneurs of small scale business( ibef Report)<sup>23</sup>

Some of the Steps taken by the government of India to promote the adoption of industry 4.0 are as follows:

- National program me on Artificial intelligence,
- Centre of excellence on IT for industry 4.0.
- Department of science and technology will launch Cyber Physical System to support establishment of Centre of Education for training in Robotics, Artificial intelligence, digital manufacturing.

The second major issues confronted by MSMEs are shortage of funds. The Committee on financial architecture of MSME sector in their Report<sup>24</sup> submitted in the February, 2015 has identified some key issues. These include; i)Equity as a source of financing is underutilized and the prevalence of investment by venture capital and angel investors is low, ii) MSMEs face the problem of delayed payments from their buyers which adversely impacts their working capital as well as their next cycle of production, iii) MSMEs lack adequate information about various schemes and benefits available by the government, iv) Financial institutions/Banks face challenges in credit risk assessment of MSMEs, v) The utilization of the available credit guarantee and insurance schemes by banks has been low.

The most major dependence of the sector is for the working capital requirement which directly impacts their production cycle. As stated elsewhere, the tolerance threshold levels of this sector are very low. Hence, any liquidity crunch has an immediate and disastrous impact. During the last global economic crisis, this was seen to be a major problem area, affecting the MSME for their day-to-day requirement of working capital. The MSME thus need to be insulated from such credit squeezes in times of adverse monetary conditions. (Strategic Action plan MSME)<sup>25</sup>

Credit availability remains one of the most major concerns. Whereas, the Government of India has taken several steps to increase the lending of this Sector, this remains even now the most difficult problem faced by the MSME. Easy and timely access to credit is crucial factor to development and growth of enterprises. The Report of the Working Group on Rehabilitation of sick MSMEs by the Reserve Bank of India<sup>26</sup> has identified this situation as a crucial reason for industrial sickness of this sector. According to Parthajet Das, (2017)<sup>27</sup> Complex collaterals instead by the banks, cumbersome sanction procedures and delay in disbursement and high rate of interest on term loans further worsen the situation.

The Ministry of MSMEs announced Cluster Development Program for Enhancing Productivity.<sup>28</sup> Clusters are provided financial assistance for the preparation of Diagnostic Study Report and infrastructure development of the Common Facility Centre. The Ministry has adopted the cluster development approach as a key strategy for enhancing the productivity and competitiveness as well as capacity building of Micro and Small Enterprises (MSEs) and their collectives in the country.

#### **Objectives of the Scheme:**

- (i) To support the sustainability and growth of MSEs by addressing common issues such as improvement of technology, skills and quality, market access, access to capital etc.
- (ii) To build capacity of MSEs for common supportive action through formation of self-help groups, consortia, up gradation of association etc.
- (iii) To create / upgrade infrastructural facilities in the new / existing industrial areas / clusters of MSMEs.
- (iv) To set up Common Facility Centers (for testing, training center, raw material depot, effluent treatment, complementing production processes etc.

Adoption of industry 4.0 will result in increased use of automation and robots in the shop floor. Robots will act

as an efficient replacement for labor. There is no doubt that certain low skilled jobs will be eliminated. However it is expected that an increase in capacity will have a positive effect on the creation of jobs, requiring higher levels of skills.

According to economist Andrew Mc free 29 we are facing a time when machines will replace people for most of the jobs in the current economy. For a long time there existed a belief that technology leads to destruction of job in the short run but create new jobs in the long run. With industry 4.0 new jobs may get created but it will be few in number.

According to BRICS India 2016,30 Employees who were rendered jobless due to elimination of low skilled jobs need to be re-skilled or up-skilled to make them ready for the new requirements.

According to ibef Report31 on manufacturing sector in India, following initiatives have been taken by the Government of India.

**Pradhan Mantri Kaushal Vikas Yojna (PMKVY) scheme:** provides financial rewards to more than 2.5 million candidates for successfully completing approved skill training programmes

**Skill Loan scheme:** Grants loan ranging from INR 5000 to INR 1,50000 to 3.4 million youth seeking to attend skill development program in next years

**Recognition of prior learning:** Assess and certified one million workers who already possess certain skill irrespective of the way they have been gained. Formal or informal training

**Smart cards and certificates:** Cards and Certificates with QR codes to be provided allowing trainees to share skill qualification with employers in quick and reliable way during job search.

**Apprenticeship Portal:** Launch of portal that acts as one stop shop for apprenticeship related issues of industry, students and trainers. Industry 4.0 requires new skill set. Certain jobs like those of industrial workers will change or might even become redundant. Warehouse workers for instance are expected to be replaced by autonomous robots. New roles such as robot coordinator and data scientist shall be created while routine and physically demanding jobs shall disappear.

Big data marks the shift from stocks of fixed structured data to flow of ever growing unstructured data, and as a result, it also marks the change in labor demand from data analyst to data scientists (Davenport, Barth & Bean, 2013)32. Furthermore MSMEs also need to think about the additional burden of hiring and retaining such skilled manpower

## CONCLUSION:

The fourth Industrial Revolution is making headway globally and India is no exceptions to it. We do desire our nation to be a developed nation and be industrially advanced and known as manufacturing nation. Whatever course of action is taken with regard to this, its sustainability is to be ensured. What is advantageous to a capital intensive economy need not be advantageous for a labor intensive economy. Industry 4.0 technologies are capital intensive and beyond the reach of most of the MSMEs. The government efforts to promote industry 4.0 are largely confined to large and MSMEs in the organized sector, where significant section of MSMEs operate in Un organized sector. Given the need to evolve our own version of adopting Industry 4.0 wherein we need to strike a balance wherein human resource is neither displaced nor reduced to machine.

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