

# **Does The MSME Sector Undergo Transformation in India? Challenges and Policy Imperatives**

**M H Bala Subrahmanya**

Professor, Department of Management Studies  
Indian Institute of Science, Bangalore  
India  
[bala@iisc.ac.in](mailto:bala@iisc.ac.in)

## **Abstract**

This paper traces the recent growth trends in the MSME sector of India, which indicate transformation of the sector in terms of scale and expansion. Given this, the factors inducing such a sectoral transformation are explored. Increased investment limits, improvement in the ease of doing business through Udyam Portal, Small Finance Banks, improved credit flow, VC funding, fintech financing, skill mapping and training, digital marketing including GeM, Open Network for Digital Commerce, and support from leading e-commerce companies are together favorable to MSME growth, scale expansion, and transformation. Thereafter, the two critical challenges faced by the sector are described and policy imperatives are suggested. Two key challenges have been emerging and gaining magnitude: (i) Fourth Industrial Revolution (Industry 4.0) characterized by the integration of man, machines, and production processes, and (ii) the imperativeness to achieve carbon emission reductions for sustainability, are two critical challenges which must be dealt with gradually and steadily. Financial constraints, knowledge constraints, and technology information constraints would prevent MSMEs from overcoming these challenges on their own. Policy intervention has a decisive role to play. Towards this end, an *Annual Survey of MSMEs* is recommended. In addition, promotion of LSE-MSME linkages, HEI-MSME linkages, LSE-ITI linkages, exclusive small business management programs, introduction of climate finance, and differential treatment for unorganized enterprises are suggested as the remedial measures. This can smoothen the process of Indian MSME growth and transformation with a higher degree of competitiveness in the coming decades.

## **Keywords**

MSMEs, Fintech, E-commerce, Policy, India

## **1. Introduction**

Micro, Small, and Medium Enterprises (MSMEs) occupy a place of strategic significance in Indian economy. As a sector, it comprised more than 63 million enterprises, and contributed about 45% of the manufacturing output, 30% of the GDP, and 49% of the total exports, and its employment of about 111 million workers was next only to agriculture in 2015/16 (Ministry of MSMEs, 2023). Therefore, the growth of the sector needs to be nurtured for the benefit of the economy from the triple angle of employment, income, and exports.

MSME contributions have been emerging despite multiple challenges and constraints which have been persisting over a long period. The constraints over the functional front such as finance, market, production technology & operations, and human resources which are widely acknowledged across the global economy may be more intensely applicable to Indian MSMEs. Exclusive policies at the national and state levels have been increasingly pursued through exclusive institutions and programs for their alleviation since independence (Ministry of MSMEs, 2023; Bala Subrahmanya, 1998).

However, the nature of challenges faced by the sector has been taking new dimensions particularly since the last decade. Of them, two challenges stand out significantly: First and foremost is the fourth Industrial Revolution (Industry 4.0), and the second one is climate change. The nature of impact that these challenges would have on the MSME sector in the future is difficult to predict, but certain to occur. The complexity of the possible impact is due to the unpredictable dimensions of the two challenges and the structural deficiencies of the sector within. Given this, policy interventions at the micro level can only mitigate the impact and nurture the transformation of the sector to sustain its vitality and vibrancy. This paper would attempt to throw light on the challenges as well as policy imperatives against a backdrop of structural deficiencies of the MSME sector in India.

### 1.1 Objectives of the study

This paper has four specific objectives as follows:

- To elicit the indicators of growth trends of MSMEs in India,
- To explore the factors facilitating the emerging growth trends of MSMEs
- To ascertain the key challenges faced by the sector, and
- To recommend policy initiatives to sustain the growth trends of MSMEs

These objectives are analyzed based on literature review and secondary data.

## 2. Current MSME Sector Growth Trends in India

To understand the structure and contributions of MSME sector we may look at the data provided by the National Sample Survey Office (NSSO) 73<sup>rd</sup> round data for 2015/16, and the Udyam Portal registrations as of December 2022 (Ministry of MSMEs, 2023). But the data must be interpreted in the context of the definitions of the sector, which have undergone a change between the two periods. Table 1 presents the definitions of MSMEs pertaining to the two periods. The definitions of MSMEs as given by the MSMED Act 2006 were applicable till its subsequent revision made in May 2020. The MSMED Act 2006 defined manufacturing - micro, small, and medium - enterprises with a higher investment limit relative to that of service – micro, small, and medium - enterprises but without any turnover limits. But the revised definitions of MSMEs applicable since May 2020 do not make any distinction between manufacturing and service enterprises, as the (investment limit) definitions for micro, small, and medium enterprises are uniformly applicable to both the sectors. However, the new definition revised the investment limit upward for each of the three sub-sectors, and in addition introduced turnover limits.

Table 1. MSME Definitions: 2006 & 2020

Sector	Year	Investment in Plant & Machinery	Turnover
Micro	2006	Rs. 2.5 million (Rs.1 million*)	Not Applicable
	2020	Rs. 10 million	Rs. 50 million
Small	2006	>Rs.2.5 million up to Rs. 50 million (>Rs.1 million up to Rs.20 million*)	Not Applicable
	2020	>Rs.10 million up to Rs. 100 million	Rs. 500 million
Medium	2006	>Rs.50 million up to Rs.100 million (>Rs.20 million up to Rs.50 million*)	Not Applicable
	2020	>Rs.100 million up to Rs.500 million	Rs. 2500 million

**Note: (\*) Investment limit for service enterprises**

**Source: Ministry of MSMEs (2023)**

While the investment limit for micro enterprises quadrupled, the investment limit for small enterprises was doubled, whereas for the medium enterprises, it increased by five times. In terms of the ratio for investment limit to turnover, it is kept uniformly at 1:5 for all three sub-sectors. The multiple fold increases in investment limits could be justified on two grounds: (i) To take account of inflation, and (ii) to facilitate technology upgradation and modernization. Given that between 2006/07 and 2020/21, the Cost Inflation Index (CII) has increased from 122 to 301 (with the base of 100 in 2001/02), the change in the CII accounted for an increase of 147% during 2006/07-2020/21 (Kanoi, 2024). This implies that for the inflation neutral investment limit, approximately an investment limit increase by one and half times would have been sufficient.

However, the investment limit for micro enterprises was quadrupled, for small enterprises doubled and for medium enterprises it was increased by five times. Therefore, increasing the investment limit to more than offset the inflation

impact would have favorably influenced technology upgradation & modernization in the micro enterprises, and medium enterprises, but may not be largely in small enterprises. The higher investment limits would have also encouraged a greater number of technologically advanced enterprises to emerge from scratch. Given this, it would have given a boost to the creation of new enterprises as well as the scaling up of existing enterprises in all the three sub-sectors.

According to NSSO (73<sup>rd</sup> round) data, there were more than 63 million MSMEs in 2015/16 (Ministry of MSMEs, 2023). But according to Udyam Registration Portal, the total number of MSMEs registered from 1<sup>st</sup> July 2020 till 2<sup>nd</sup> December 2023 stood at 31.61 million (Press Information Bureau, 2023). Udyam registration was made mandatory by the Government of India for all the MSMEs with effect from 1<sup>st</sup> July 2020 (Khirwal, 2023). As a result, the number of registered MSMEs has seen a considerable upswing annually since July 2020: 2.85 million MSMEs were registered in 2020, 5.15 million in 2021, 8.58 million in 2022, and 15.03 million in 2023 (Press Information Bureau, 2023). That is, the total number of registered MSMEs in less than 3 and ½ years (July 2020-December 2023) was as big as half the size of the total number of MSMEs prevailed in 2015/16. This would include newly created enterprises as well as already operational enterprises.

Against the backdrop of these definitional issues, it is appropriate to know whether the MSME sector underwent a change in its composition of manufacturing and service enterprises, on the one hand, and in terms of enterprises as well as employment for micro, small, and medium enterprise sectors. Table 2 presents data on the compositions of enterprises for manufacturing and service sectors for 2015/16 and 2022, respectively. The share of manufacturing enterprises accounted for hardly 1/3 (31%) of the total in 2015/16 but in 2022, the corresponding share accounted for a marginally lesser share (28%), the rest accounted for by service enterprises. Thus, the MSME sector has continued to be dominated by service sector enterprises, despite a change in the definition. Given this, it would be interesting to examine whether there is any difference in the sector-wise composition in terms of number of enterprises and employment between 2015/16 and 2022 for micro, small, and medium sector enterprises, respectively.

Table 2. MSMEs – Number of Enterprises – 2015/16 & 2022

Sector	Year	Total Enterprises (Million)	% Share
Manufacturing	2015/16	19.67	31.03
	2022	3.67	28.00
Services	2015/16	43.72	68.97
	2022	9.43	72.00
Total	2015/16	63.39	100.00
	2022	13.10	100.00

**Source: Ministry of MSMEs (2023)**

Table 3 presents the distribution of MSMEs in terms of micro, small, and medium enterprises in terms of enterprises and employment for 2015/16 and 2022. While the numbers of small enterprises and medium enterprises registered on Udyam portal were significantly higher in 2022 compared to that of 2015/16, the number of micro enterprises registered on Udyam portal was just 20% of the figure that prevailed in 2015/16. This implies that a larger share of micro enterprises has not yet been registered on Udyam portal whereas newly created small and medium enterprises, in addition to the existing ones, have registered themselves on the portal. Perhaps, only the formal micro enterprises would have registered themselves whereas Informal Micro Enterprises (IMEs) might not have been registered to any great extent. The Udyam Assist Platform aimed at facilitating the registration of IMEs under the ‘MSME Formalization Project’ through ‘Designated Agencies’ like banks, micro financial institutions, NBFCs, etc. (Ministry of MSMEs, 2024) is expected to enable increased registrations of IMEs in the coming years. This only reflects an appropriate scenario of MSME distributions.

Due to the below, the relative compositions of micro, small, and medium sectors exhibit a marginal shift from 2015/16 (NSSO survey-based data) to 2022 (Udyam portal registration-based data) in terms of number of enterprises. The ratio of number of enterprises for micro, small, and medium enterprises, respectively, changed from 99.46:0.52:0.02 in 2015/16 to 96.34: 3.36:0.30 in 2022. The marginal shift was away from micro enterprises towards small and medium enterprises. Small and medium enterprises together accounted for hardly 1% of the total MSMEs in 2015/16 but the share went up to almost 4% in 2022.

Table 3. MSMEs – Enterprises & Employment – 2015/16 & 2022

Sector	Year	Enterprises (Million)	%	Employment (Million)	%
Micro	2015/16	63.05	99.46	107.62	96.97
	2022	12.62	96.34	78.26	82.15
Small	2015/16	0.33	0.52	3.20	2.88
	2022	00.44	3.36	11.65	12.23
Medium	2015/16	0.01	0.02	0.17	0.15
	2022	00.04	0.30	5.35	5.62
Total	2015/16	63.39	100.00	110.99	100.00
	2022	13.10	100.00	95.26	100.00

Source: Ministry of MSMEs (2023)

But the shift in the employment shares of the three sub-sectors was sharper. Due to incomplete registrations, employment of micro enterprises was less in 2022 relative to that of 2015/16, but the employment of small enterprises went up by more than thrice, and that of medium enterprises increased multiple times. The share of micro enterprises in total MSME employment was almost 97%, that of small enterprises was hardly 3% and that of medium enterprises was just 0.15% in 2015/16 (Table 3). But in 2022, micro enterprises' share was about 82%, that of small enterprises was >12% and that of medium enterprises >5%. As a result, the average scale of small as well as medium enterprises would have seen a distinct increase between the two periods.

Figure 1 presents average employment (per enterprise) for micro, small, and medium sectors as well as for the overall sector in 2015/16 and 2022, respectively. The employment per enterprise for the overall sector in 2022 was more than four times that of 2015/16. Similarly, there is a distinct difference between the employment per enterprise data for two time periods for micro, small, and medium enterprises. The employment per enterprise for micro enterprises was higher by more than three times, **(but these figures are not comparable as the figure for 2022 was not comprehensive, and therefore, does not represent the full micro enterprise sector unlike that of 2015/16)**. For small enterprises it was higher by more than two and half times, whereas that of medium enterprises was higher by almost eight times in 2022 compared to that of 2015/16.

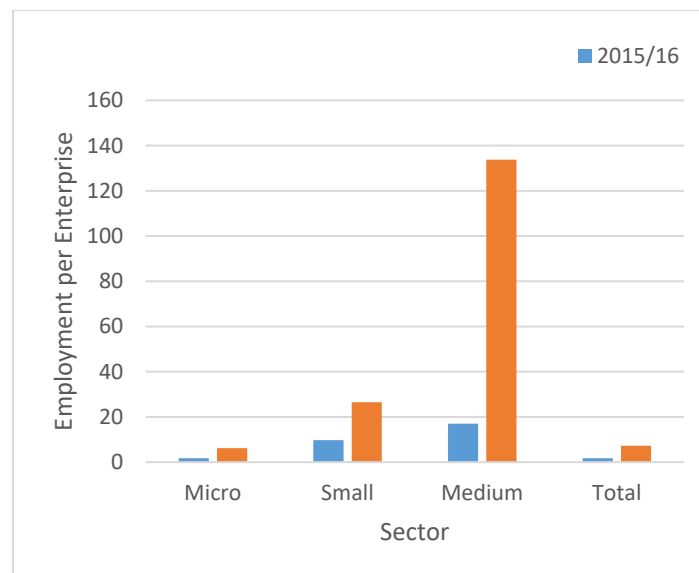


Figure 1. Scale of Employment in MSMEs – 2015/16 & 2022

This has happened along with an increase in investment limits across micro, small, and medium enterprise sectors. This implies that average scale of production has distinctly shifted upwards in all the three sub-sectors since the revision of MSME definitions in July 2020. This could be due to (i) technological upgradation and modernization of

existing enterprises, and (ii) emergence of technologically advanced enterprises. A survey-based macro/micro studies will only be able to throw light on whether this has led to better economic performance in terms of revenue, productivity, and exports. But several favorable factors have been emerging, particularly since the last decade which would facilitate the transformation of MSME sector in India in the coming decade and after.

### **3. Factors inducing MSME Sector Growth and Transformation:**

The economic environment for MSMEs has been undergoing radical transformation, globally as well as locally, particularly since the early 1990s leading to the emergence of unique challenges as well as opportunities from time to time. In response to these changing economic environments, Indian policy makers have been revising existing and/or introducing new policies to promote MSMEs. However, policy support introduced in the last decade is of particular significance. The most important of them all was the revision of MSME definitions with higher investment limits, and the introduction of turnover limits, the implications of which have been described above already. In addition, several other policy initiatives have been implemented to enable the sector to overcome administrative as well as functional area challenges. MSMEs, in general require three critical ingredients, namely, access to markets, finance, and skills, among others (Buteau, 2021). Policy measures have been introduced to enable MSMEs to acquire easy identity and visibility through online registration, access government support, obtain timely and adequate credit, recruit trained and skilled labour, and penetrate national and international markets, among others.

#### **(a) Easy registration of MSMEs through Udyam Portal:**

A formal and easy registration process was put in place through the creation of an exclusive Udyam Registration Portal for MSMEs in July 2020. The Udyam Registration Portal (URP) of the Ministry of MSMEs facilitates online registration of MSMEs and generation of Unique Registration Number (URN) and Udyam Assist Certificate (UAC) for MSMEs (Ministry of MSMEs, 2024a). Udyam registration serves as the official recognition and documentation for MSMEs (Khirwal, 2023). This will play a significant role in the formalization of the MSME sector in the future. This will aid in policymaking as much as in periodic policy revision, and if necessary, ad-hoc interventions.

In addition, Udyam portal registration fetches an enterprise multiple benefits such as (i) easy access to government schemes, (ii) collateral free loans, (iii) protection against delayed payments, (iv) priority in government procurement, (v) provision to participate in global trade fairs, exhibitions, and business networking events, (vi) Intellectual Property protection, (vii) encourage virtual cluster formation, among others. These benefits would induce more and more MSMEs to voluntarily register themselves on the Udyam portal.

#### **(b) Small Finance Banks (SFBs) and Overall Credit Flow to MSMEs:**

Formal credit penetration has been a perennial challenge for the MSME sector in general, and for micro and small enterprises in particular. The overall debt demand of MSMEs stood at US\$ 1.07 trillion in 2017 but formal financial institutions were found to have the ability to address only 53% of the overall debt demand (IFC, 2018). Thus, there is a huge demand-supply gap for credit in the MSME sector. Policymakers have made attempts to improve the situation.

One of the initiatives was the establishment of SFBs. The primary objective of creating SFBs has been to facilitate better credit flow to MSMEs, particularly micro and small enterprises (RBI Bulletin, 2021). The RBI released guidelines for licensing of SFBs in 2014/15. As a result, 12 SFBs have emerged in different points of time since then (RBI website, 2024). In terms of location, as of March 2020, 57% of the SFB branches were in rural and semi-urban regions which draw special attention of policy makers for financial inclusion drives. The share of priority sector advances of SFBs was considerably higher vis-à-vis other traditional banking groups (comprising public sector, private sector, and foreign banks). Most of the SFBs displayed healthy performance, with steady improvements in the recent period (RBI Bulletin, 2021). This would have given a fillip to the growth of micro and small enterprises.

Table 4 presents share of MSMEs in the sectoral deployment of non-food bank credit for the period from 2018/19 to 2022/23. There was a steady increase in the credit flow towards MSMEs, including both micro & small enterprises, and medium enterprises during 2018/19-2022/23. Between micro & small enterprises, and medium enterprises, the share of medium enterprises in the total MSME credit increased steadily (except for 2019/20) from about 13% in 2018/19 to about 20% in 2022/23. As a result, credit to the medium enterprises grew by almost 25% per annum whereas credit to micro & small enterprises grew by about 10% per annum during the period. While the overall non-food credit grew by 8.84% per annum, credit flow to MSMEs grew by 12.44% during 2018/19-2022/23. As a result, the share of credit flow to MSMEs in the overall non-food credit grew from 12.66% in 2018/19 to 14.42% in 2022/23. This gradual increase in credit flow, absolutely as well as relatively, would have made only a marginal difference to

the demand-supply credit gap for MSME growth in the country. But two important non-traditional sources of finance are fast emerging in India for the benefit of MSMEs.

Table 4. Share of MSMEs in Deployment of Non-Food Gross Bank Credit (Rs. Crore)

Sector	2018/19	2019/20	2020/21	2021/22	2022/23
Non-food credit	9730112	10319097	10888255	11836304	13655330
CARG: 2018/19-2022/23	8.84%				
Total credit to MSMEs	1232070	1377632	1464465	1725493	1969491
% to Total non-food credit	12.66	13.26	13.45	14.58	14.42
CARG: 2018/19-2022/23	12.44%				
Micro & Small Enterprises	1067234	1198459	1206003	1373593	1570231
% to Total MSME credit	86.62	86.99	82.35	79.61	79.73
% to Total non-food credit	10.97	11.61	11.08	11.61	11.50
CARG: 2018/19-2022/23	10.14%				
Medium Enterprises	164836	179173	258462	351900	399260
% to Total MSME credit	13.38	13.01	17.65	20.39	20.27
% to Total non-food credit	1.69	1.65	2.37	2.97	2.92
CARG: 2018/19-2022/23	24.75%				

Source: RBI (2024)

#### (a) Venture Capital (VC) funding for MSMEs

The rapidly growing VC industry is an important non-bank source of finance for MSMEs. While propelling the growth of start-ups, VCs are increasingly turning towards financing successfully run family businesses in the MSME sector in India. Those MSMEs which have a track record of more than a decade or two and generate an annual revenue in the range of Rs.100 crore to Rs.150 crore form the target for these VCs. Thus, the medium enterprise sector is the core focus for VCs for investments. Such long standing businesses are usually led by experienced entrepreneurs with innovative ideas but limited access to capital hinders their ability to expand rapidly, hire top talent or acquire sophisticated technology (Agarwal, 2023). VCs need more stable and sustainable businesses for investments and long-standing medium enterprises meet their needs.

VCs are increasingly participating in MSME financing particularly since the last decade (Agarwal, 2023). Many family-run MSMEs are aiming at imbibing ‘corporate culture’ moving away from the traditional style of running business, which is another attractive factor for VC funding. The management team, robustness of business model, and growth prospects are the determining factors for VC decision-making. For MSMEs the advantage in seeking VC funding lies in the availability of value-add services including ‘mentoring’ (Agarwal, 2023). They can play a major role in formalizing structure, streamlining operations, and scale expansion (Goyal, 2022). There are, at least, 25 leading MSME VC and Private Equity investors in India (SIDBI, 2021). Though precise figures for VC investments in MSMEs are not forthcoming, there are definite indicators for their increasing involvement in MSME financing in India (SIDBI, 2021; CII-PWC, 2013).

#### (b) Fintech Financing of MSMEs

The rapid emergence of fintech start-ups since the last decade is the other important source for MSME financing, particularly for micro and small enterprises. Fintech start-ups have the potential to fundamentally transform the financial landscape as they can help enhance financial inclusion by overcoming information asymmetry and high transaction costs (RBI Bulletin, 2020). They are in fact reshaping the ways small businesses can access working capital and cash flow finance. Fintech companies hold the potential to revolutionize lending even for the bottom of the pyramid. Thanks to the promotion of digital transactions by the government, there are 375 payment start-ups in India (Dalmia, 2023). Fintech start-ups are laden off with the burden of bureaucracy and provide quick access to financial loans (Naresh, 2020).

Fintech can provide a cash-based lending model that will assess the creditworthiness of an MSME based on its cash flow leveraging the power of digital payments. IMEs, which are often run without any assets, cannot offer any collateral and therefore cannot access formal institutional finance. But such enterprises will be able to make use of fintech services and obtain working capital. The market potential of digital lending is estimated to be between US\$80

billion and US\$100 billion for the MSME sector by 2023 (Dalmia, 2023). Simplified and smooth loan application and disbursement processes, low interest rates, immediate disbursement of short-term loans, low application and transaction costs are some of the salient features of fintech start-up lending (Naresh, 2020).

With rapid rural smartphone and internet penetration, some fintech start-ups on boarded aspiring small business owners in their network and trained them in digital and financial tools to reach the ‘last mile of the country’, while simultaneously providing employment and additional income opportunity (Modi, 2022). With innovation and technological progress, more and more varieties of fintech start-ups would emerge, thereby contributing to further bridge the credit gap in the MSME sector for its growth and transformation.

#### **(c) Skill Mapping for the MSME sector**

Adequate recruitment and retention of skilled workers has been a major challenge for MSMEs. Even if unskilled workers join them and get trained and skilled, retaining them is next to impossible, as they tend to migrate to large firms in the vicinity for higher remuneration (Bala Subrahmanya, 2010). Therefore, skill development is a pre-requisite for MSME development. Considering this, Ministry of MSMEs launched *Skill Mapping for MSME Sector in India* in 2015. Apart from meeting the needs of the sector, skilled workforce contributes to the development of an entrepreneurial spirit in the country (Ministry of MSMEs, 2015).

The Ministry of MSMEs has compiled district-wise skill development requirements (skill maps) and formulated skill development needs for 652 districts of the country. (based on industrial clusters located in the respective districts). The skill map comprises details on the number of training institutes and engineering colleges, existing types of industries, and the availability of raw materials, to enable entrepreneurs to identify location, entrepreneurial opportunities, physical and human resources for launching their business (Ministry of MSMEs). In 2015, Skill India Mission was launched comprising, among others, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), and Recognition of Prior Learning (RPL) program with a focus on re-skilling and up-skilling in prominent trades. Under the Skill India Mission, approximately 10 million youths have been trained every year since 2015 through various skill programs of Union Ministries (Ministry of Skill Development and Entrepreneurship, 2022). This would have alleviated and would further alleviate the concerns of MSMEs with respect to skilled workers in the future.

#### **(d) Market Facilitation and Penetration of MSMEs**

One of the core challenges for MSMEs is market penetration for sustenance and growth. Till the previous decade, market penetration was predominantly if not wholly, confined to off-line marketing. With the advent of digitization and e-commerce, and springing up e-commerce start-ups, e-marketing has been giving a new dimension to MSME marketing since the last decade. The Government of India created Government e-Market (GeM) portal ([gem.gov.in](http://gem.gov.in)) in 2016, which explicitly encourages MSMEs to list their products on the portal for public procurement (IBEF, 2021). GeM is an end-to-end e-market platform for procurement of goods and services by government organizations comprising central departments, central ministries, and central public sector undertakings (Ministry of MSMEs, 2024b). As of now, about 50% of the total Gross Merchandise Value (GMV) of over Rs. 76 million achieved since 2016 by GeM has been accounted by MSMEs and start-ups, double the share mandated (25%) by the government (ET Government, 2024).

Open Network for Digital Commerce (ONDC) has been established by the Department for Promotion of Industry and International Trade (DPIIT), Government of India, as a public non-profit (section 8) company to develop open e-commerce, in December 2021. ONDC has the mission to increase e-commerce penetration in the country to reach the population-scale by bringing in all types and sizes of sellers (ONDC, 2024). This is expected to benefit MSMEs to a great extent.

More significantly, with the entry and growth of more and more international and national e-commerce companies, the demand for MSME products is emerging indirectly (through on-line buying), in addition to the traditional mode of offline buying. E-commerce has brought the entire global market within the reach of MSMEs, thereby giving a new dimension to MSME exports. Some of the initiatives of e-commerce companies which will profoundly impact the MSME marketing are worth mentioning, and are as follows:

- Flipkart, India's largest e-commerce company, launched ‘SAMARTH’, a local platform, in July 2019 to bring Indian artisans, weavers, and micro enterprises into the e-commerce fold (Flipkart Stories, 2022). Flipkart launched ‘Flipkart Wholesale’ (in July 2020), a new digital marketplace that will help transform India's retail ecosystem by leveraging cutting-edge and locally developed extensive leadership in the

consumer e-commerce segment and technology for the country's mom-and-pop "kirana" grocery stores and other small retailers. This is to help small business enterprise sources directly from manufacturers and producers (Corporate Walmart, 2020).

- Amazon, the US e-commerce company, launched 'Amazon Global Selling' program which offers MSMEs to tap into overseas markets and gain direct access to customers across the world. As of 2023, 125,000 MSME exporters were registered on the program. The cumulative e-commerce exports reached US\$8 billion by the end of 2023. The program aims at achieving cumulative MSME exports of US\$20 billion by 2025 (Amazon Global Selling, 2024).
- To promote 'Atmanirbhar', Shopclues.com launched 'Atmanirbhar Store', (an online 'Vocal for Local' market) on its home page in June 2020, to offer domestic products that are 'Made in India' across categories including fashion, footwear, home & kitchen, jewelry & watches, groceries, electronics, beauty, and appliances, among others (Sharma, 2020).
- Zakya, a recently started off-shoot of Zoho (a SaaS unicorn) is a cloud-based Point of Sales (POS) software for retail businesses in India. It offers flexible and affordable pricing plans, multi-language support (17 different languages, including 10 Indian languages, and English), and various features for inventory, sales, purchase, and customer management, and accounting.

Thus, both government and private sector digital marketing initiatives have been giving a boost to MSME marketing domestically as well as internationally. This can have a favorable influence on overcoming the 'liability of newness and smallness' and encourage scale expansion of MSMEs. Thus, factors relating to higher investment limits, 'ease of doing business' through online registration, and gaining visibility and credibility, improved credit flow, new sources of finance, skilled and trained workforce, and digital marketing are facilitating MSME transformation in India. However, newer challenges are emerging, and steps must be taken to ensure healthy growth and further transformation of the sector.

#### **4. Critical Challenges of MSMEs:**

While MSMEs face challenges on multiple fronts and policy makers do introduce or revise policies to enable the sector to overcome the challenges, at least, two of the challenges stand apart and call for urgent attention, namely, (i) Fourth Industrial Revolution (Industry 4.0), and (ii) Climate change and sustainability. Industry 4.0 and sustainability are considered the crucial emerging trends in industrial production systems. It is anticipated that adoption of industry 4.0 will also help drive sustainability in industries (Agarwal, et al, 2023). SMEs in general face these twin challenges globally, and the adoption and implementation of Industry 4.0 technologies in SMEs is at its infancy (Yu and Schweisfurth, 2020). But these twin challenges would assume a much larger magnitude in an emerging economy like India, due to the predominant presence of unorganized enterprises, particularly IMEs. A description of each of these challenges is in order.

##### **(a) Fourth Industrial Revolution (Industry 4.0) and Implications for MSMEs**

The Fourth Industrial Revolution, unlike the earlier three industrial revolutions, is multi-dimensional. It is driven by an amalgamation of technologies such as Internet of Things (IoT), Artificial Intelligence, data volume, business analytics, computational power, Augmented Reality, Virtual Reality, advanced robotics, simulation, additive manufacturing, cyber-physical systems, and sensor-based technologies (Masood and Sonntag, 2020). It involves the integration of physical objects, human actors, intelligent machines, production lines and processes across organizational boundaries in such a way that all the processes are integrated, and information is shared in real time. A high level of mass customization, along with higher efficiency, reduced risk, and productivity improvements would emerge (Chavez, et al, 2022). This can have a profound effect on MSMEs.

Industry 4.0 has emerged in the context of large organizations, particularly Multinational Enterprises (MNEs). Though the concept saw its origin in Germany in 2011, national efforts are in operation under different names, in the USA ("Smart Manufacturing"), China ("Made in China"), and UK ("Future Manufacturing") (Masood and Sonntag, 2020). Towards the promotion of Industry 4.0 in Indian industry, National Productivity Council (NPC), DPIIT, has conceptualized and developed *Bharat 4.0 – Digital Assessment Tool* which can be used by any enterprise, irrespective of its size, industry, profile, and industry 4.0 maturity. The tool is expected to help enterprises to initiate, expand and retain their Industry 4.0 initiatives (NPC, 2024). As of now, about two-thirds of Indian manufacturers have adopted Industry 4.0 (NASSCOM, 2022).



But MSMEs in general suffer from three kinds of limitations, namely, financial resources, knowledge resources, and technology awareness for the adoption of Industry 4.0 (Masood and Sonntag, 2020). In the Indian context, these limitations will prevail more intensely (Rayar, et al, 2023). However, the Ministry of MSMEs has launched an exclusive single window portal ([champions.gov.in](http://champions.gov.in)) to assist MSMEs not only to adopt Industry 4.0 elements but also manufacture their essential and enabling products such as sensors, motors, computer displays, and other animation technology products. The portal has been operational since June 2020 (ET Government, 2022).

**(b) Climate Change and Sustainability**

Indian MSMEs generated about 110 million tons of CO<sub>2</sub> equivalent, as they used 13% (81 million tons) of the total coal/lignite, seven percent (8.5 million tons) of the petroleum products, and eight percent of the natural gas (3.3 billion cubic meters) in 2015/16 (Upadhyay, 2022). Apart from lack of financial resources, knowledge resources, and technology awareness, lack of awareness about climate-related risks would forbid them to move towards the adoption of better technologies to reduce the carbon footprints. India had agreed to achieve net zero carbon emissions by 2070, in the United Nations Framework Convention on Climate Change at Glasgow, UK in 2021 (Ministry of Finance, 2023). But, achieving clean energy transitions among the MSMEs will remain a perennial challenge for many more decades, if sector-specific remedial measures are not designed and implemented.

## **5. Policy Imperatives**

In the light of the changing landscape of business environment for MSME transformation and its critical challenges, specific policy initiatives are recommended.

**(a) Availability of data for periodic policy interventions is imperative:**

As of now, data on MSMEs are not available periodically. The previous Census was held in 2005/06 and the NSSO data was available for 2015/16. To enable data availability, an Annual Survey of MSMEs must be contemplated. For this purpose, manufacturing enterprises may be covered on a census basis whereas service enterprises may be covered on a sample basis. To ensure comprehensive coverage of the sector, District Industries Centres (DICs) and Taluk Industries Centres (TICs) can be involved across the country. Apart from data on economic variables such as employment, investment, production, and exports, data on the prevailing level of technology, the kind of (product/process) innovations carried out, links with government organizations/academic institutions/large industries, etc. must also be gathered. Regular data availability can significantly contribute to periodic policy revisions for the growth and transformation of the sector.

**(b) Promote Large Scale Enterprise (LSE) - MSME linkages:**

Apex chambers (such as Assocham, CII and FICCI) and MSME associations must consciously encourage partnerships/collaborations between LSEs (including MNEs) and MSMEs for industrial sub-contracting, technological assistance and information, and employee training, among others, in each state. This would go a long way in the technology upgrading of MSMEs to cope with the challenges emerging from the increasing absorption of Industry 4.0 by the former. Similarly, directions and assistance from LSEs for the adoption of green technologies, wherever relevant, would enable MSMEs to contribute for the reduction of carbon footprints, and achieve sustainability. Further, LSE linkages are an important means of internationalization for MSMEs and can enable them to join the Global Value Chains of MNCs (Bala Subrahmanya, 2017).

**(c) Promote linkages between Higher Education Institutions (HEIs) and MSMEs**

Graduate and postgraduate degree students of engineering institutions must be encouraged to take up live problems from manufacturing MSMEs located in their vicinity for their project work. As project work is mandatory, this will promote HEI-MSME relationships considerably for mutual benefit and may prompt many MSMEs to resort to technological innovations, with or without HEI support. Institutions like Indian Institute of Science, Bangalore have made it mandatory for post-graduate students (in some of the engineering departments) to take up live problems for their project work. This provides cost-free solutions to the technology/production related problems of MSMEs. This can play a role in inducing many of the MSMEs to adopt technologies compliant with Industry 4.0 and the goals of sustainability.

**(d) Promote linkages between LSEs and Industrial Training Institutes (ITIs)**

Skill India Mission must be expanded to cover linkages between LSEs and ITIs located in each district. This will ensure adequate availability of skilled workforce for the former, apart from contributing skilled workforce to the industrial ecosystem. Toyota Kirloskar Motor (TKM), Bangalore has inked a MoU with the Government of Karnataka for imparting industry-specific skill, culture, and knowledge to the ITI students in the state. As per the MoU, TKM

would train and develop skilled human resources for manufacturing units and first-time entrepreneurs, in the light of Government of India's focus on 'Make in India' and 'Atmanirbhar Bharat' (Business Today, 2021). The Toyota model of Karnataka deserves to be replicated elsewhere.

**(e) Introducing exclusive Management Programs for MSMEs**

Professional management would play a crucial role in the management and transformation of MSMEs. In general, management graduates emerging from B-Schools prefer to join the corporate sector, preferably MNEs. Only lower ranked B-School graduates, who do not make it to the corporate sector, may join MSMEs. However, the curricula taught in B-Schools in general are suited for corporate sector enterprises, whereas the management problems of MSMEs are unique and they cannot be solved readily within the framework of the former. Therefore, there is a need for introducing an exclusive 'Small Business Management' program in our B-Schools and Universities.

**(f) Introducing Climate Finance for MSMEs**

There is a need to introduce 'climate finance' to encourage MSMEs to adopt environmentally friendly and sustainable technologies for reducing carbon footprints. Comprehensive procedures are needed to avail ourselves of international climate funds for the benefit of MSMEs. Technology upgradation and modernization programs must focus on cleaner fuel, common combustion facilities and energy efficiency technologies which will achieve decarbonization (Upadhyay, 2022). The international source of climate funds can also be another means to bridge the credit gap in the sector.

**(g) Unorganized MSMEs call for a Differential Treatment**

The MSME sector is heterogenous, and this heterogeneity can be perceived at the broadest level between organized and unorganized sectors. Unorganized enterprises emerge mostly as a means of subsistence employment, and many of them thrive as a means of subsistence only. They primarily need finance, and they identify the market themselves. They are transitory in nature. This is largely true in the micro enterprises service sector. As the level of income steadily improves in the country, they are likely to undergo a gradual dilution. Through SFBs and fintech startups, a steady flow of credit to these enterprises must be ensured. For them the crucial issue is survival and not growth. Free entry and free exit are the distinguishing characteristics of these unorganized enterprises.

## **6. Conclusion**

The current MSME sector growth signals scale expansion and transformation. Though constraints persist on multiple fronts, several emerging factors are favorable to MSME growth, scale expansion, and transformation. Increased investment limits, improvement in the ease of doing business through Udyam Portal, SFBs, improved credit flow, VC funding, fintech financing, skill mapping and training, digital marketing including GeM, ONDC, and support from leading e-commerce companies are together favorable to MSME growth, scale expansion, and transformation.

However, two key challenges have been emerging and gaining magnitude. (i) Fourth Industrial Revolution (Industry 4.0) characterized by the integration of man, machines, and production processes, and (ii) the imperativeness to achieve carbon emission reductions for sustainability, are two critical challenges which must be dealt with gradually and steadily. Financial constraints, knowledge constraints, and technology information constraints would prevent MSMEs from overcoming these challenges on their own. Policy intervention has a decisive role to play. Towards this end, an *Annual Survey of MSMEs* is recommended. In addition, promotion of LSE-MSME linkages, HEI-MSME linkages, LSE-ITI linkages, exclusive small business management programs, introduction of climate finance, and differential treatment for unorganized enterprises (for their survival) are suggested as the remedial measures. This can smoothen the process of MSME growth and transformation for greater vibrancy and competitiveness in the coming decades.

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## **Biography**

**M H Bala Subrahmanya** is a Senior Professor (Economics) at the Department of Management Studies, Indian Institute of Science (IISc), Bangalore. He has been serving in IISc since May 1996, i.e., for more than 28 years now. He is a recipient of Commonwealth Fellowship (1999/00), Japan Foundation Fellowship (2004/05) and Fulbright-Nehru Senior Research Fellowship (2009/10). He has more than 200 publications to his credit comprising research papers in peer-reviewed national and international journals, among others. He is on the Editorial Board of *Current Science Journal*, *Competition Commission of India (CCI) Journal on Competition Law and Policy* and on the Editorial Advisory Board of *International Journal of Entrepreneurial Behavior & Research*, and *International Journal of Global Business and Competitiveness*, among others. Two of his research works have been published as monographs by De Gruyter, Berlin, Germany in 2021, namely, (i) *Entrepreneurial Ecosystems for Tech Start-ups in India: Evolution, Structure & Role*, and (ii) *Technology Business Incubators India: Structure, Role & Performance*. A recent research work on India's leading e-commerce company, Flipkart, titled, *Be Unique, the Flipkart Way: Unravelling Unprecedented Corporate Entrepreneurship* has been published as a monograph by Rupa Publications, New Delhi in 2024. His field of specialization is Industrial Economics with special reference to Start-ups, SMEs, Innovation and Entrepreneurial Economics, among others.