

Challenges and Opportunities of India's Micro Small Medium Enterprises in the New Era of Post COVID

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Research

Keywords: MSMEs, Registered, Unregistered, Manufacturing, Services, COVID-19

Posted Date: January 25th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-153359/v1>

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Abstract

This paper examines the possible changes from the new definition of Micro, Small, Medium Enterprises (MSMEs) in the Manufacturing and Services sector using NSS 73rd round data and Annual Survey of Industry (ASI). The paper further analyses the nature of registered/unregistered enterprises in MSMEs. Analysis reveals that 16.1 percent (3.2 million), 38 percent (16.6 million), and 31.2 percent (19.8 million) enterprises are registered in manufacturing, services, and whole economy respectively. It is worthy to note that share of unregistered enterprises in overall loan taken by the enterprises is only 2 percent, the remaining 98 percent of loan has been provided to registered enterprises. Registered enterprises easily access the loan from the formal channels while unregistered enterprises face problems in accessing loan from the formal channels. The regression result shows that the number of skilled workers, the firm's registration, modernization, and environmental monitor variables have a positive impact on the MSMEs output value. The large enterprises need to make structural changes with focus on generating employment at a larger scale in order to take advantage of the recent trade war between China and other developing countries. There is a simultaneous scope to promote larger enterprises with MSMEs.

1. Introduction

The Micro, Small, and Medium Enterprises (MSMEs) sector plays a critical role in generating employment opportunities and is often called the backbone of the economy which employs a significant number of workers, which next only to agriculture (Saxena and Jagota; 2015). This sector also creates employment opportunities in rural areas with low capital cost which help in reducing the regional imbalance in the economy. The MSMEs sector contributes 45% of India's total export, generates more than 114 million jobs and accounts for 33.4% of India's manufacturing output (EPW; 2020). The sector is highly vulnerable to external factors (Ghosh; 2020 and EPW; 2020). COVID-19 pandemic has impacted every sector of the economy and the MSMEs sector has been particularly affected due to supply-side disruption and reduction in demand. The demands for the readymade garment, furniture, tobacco, leather, electronics, and rubber & plastic products have been very low in the economy in the last few months. In order to address sluggishness in the economy and MSMEs sector specifically, Union Government announced a special package of INR 3 lakh crores Collateral free Automatic Loans along with six reforms under the *Atmanirbhar Bharat Abhiyaan* (Self-Reliant) to revive the MSMEs. Among several reforms, one was related to the change in the definition of Micro Small & Medium Enterprises (MSMEs) firms. Further, on 12th November 2020, Government of India announced *Atmanirbhar Bharat Package 3.0* and allocated INR 1.46 lakh crores for Production-Linked Incentives Scheme to boost the manufacturing sector.

In this context, we have tried to address the four following questions; a) what would be possible changes in terms of the number of enterprises from the new definition of MSMEs for both the sectors? b) What is the nature of micro, small and medium enterprises in the registered and unregistered sector? c) What are the key constraints faced by MSMEs? d) What factors determine the value of output in MSMEs? Apart from abstract and introduction, this article is divided into five sections. The second section presents an overview of the data used. The third section analyses the definitional changes in the MSMEs. The fourth section presents the registered and unregistered enterprises of MSMEs. The fifth section discusses the employment nature of MSMEs. Section sixth presents the problems faced by MSMEs followed by conclusion.

2. Overview Of Data: Sources And Concepts

We used unit-level data of the National Sample Survey (NSS) 73rd (2015-16) round on 'Unincorporated Non-Agriculture Enterprises in India' and Annual Survey of Industries (ASI), 2015-16. ASI covers all factories registered under Sect. 2(m) (i) and 2(m) (ii) of the Factories Act, 1948. ASI covers the organized industries of the country and this survey is conducted every yearly basis. NSS 73rd round survey provides the basic economic and operational characteristics of the manufacturing and service sector enterprises. This survey covers Manufacturing enterprises excluding those registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948 and includes the Manufacturing enterprises registered under Sect. 85 of Factories Act, 1948, Trading enterprises and Other Service sector enterprises excluding construction firms. NSS 73rd round survey covers all unorganized units which are not covered by the ASI. When we club the figures of ASI and NSS data, we get a complete picture of enterprises in the whole country. NSS 73rd round survey assesses whether enterprises are registered under any act/authority such as; Shops and Establishment Act, Municipal Corporation/ Panchayats/ Local Body, Vat /Sales Tax Act, Provident Fund Act, Employees State Insurance Corporation Act, Registered with SEBI/ Stock Exchange (item no 227 & 228 in the 73rd round questionnaire). If an enterprise is registered under any one of them, it is considered as registered enterprise, otherwise it is enlisted as an unregistered enterprise. Total registered enterprises include number of

enterprises in ASI along with number of enterprises registered under any act/authority in the NSS 73rd round survey. The manufacturing sector is covered under National Industry Classification (NIC-2008) codes from 10 to 33 and the services sector under NIC-2008 codes from 45 to 99.

3. Definitional Changes Of Msmes

Earlier MSMEs were known as small scale industries. Prof.K.T.Shah (2012) defined small scale industries as "*a small scale or cottage industry may be defined as an enterprise or series of operations carried on by a workman skilled in the craft on his responsibility, the finished product of which, he markets himself*". The importance of small scale industries is underscored as "*Small scale industries are of very special importance in India. If we lack capital, we do not lack manpower, and we must use this manpower both to add to the wealth of the country and to reduce unemployment*". In 1954, Small Industries Development Organization was set up to maintain and sustain growth of small scale industries. Medium enterprise was introduced in Micro Small & Medium Enterprises Development (MSMED) Act, 2006 (Nair & Das; 2019). This act classified the MSMEs for both the manufacturing and service sectors. Manufacturing enterprises are "*the enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the Industries (Development and Regulation) Act, 1951 or employing plant and machinery in the process of value addition to the final product having a distinct name or character or use*". While service enterprises are "*the enterprises engaged in providing or rendering of services and are defined in terms of investment in equipments*". The act defines MSMEs distinctly for the manufacturing and service sector in terms of investment in plant & machinery. The investment-based criteria do not provide enough incentive for the industries to expand and grow up. Industries keep their plants at a small size to retain the benefits associated with MSMEs and exhibit unwillingness to foster the expansion of the industry. Investment criteria itself is a self-declaration that needs physical verification and also incurs transaction costs. The MSMED Amendment Bill, 2018 was introduced in July, 2018 to define MSMEs based on their annual turnover. The turnover criterion is more appropriate than investment criterion to define MSMEs. Enterprises necessarily have to register under framework of Goods and Services Tax (GST) if their turnover exceeds the threshold limit. The criteria have the advantage of being non-discretionary, transparent, and eliminate the need for physical inspections. However, there is a loophole associated with turnover criterion as firms tend to under-report their turnover in order to qualify MSMEs. There is no specific MSMEs definition that may be used as most comprehensive definition in the world (Ardic, Mylenko & Saltane, 2011; Gibson & Vaart, 2008; ILO, 2015 and Berisha & Pula, 2015). Definition of MSMEs for the first time was given in the Bolton Report of 1971. The report suggests that there are two approaches i.e. quantitative and qualitative, to define MSMEs. Generally, the quantitative method is used to define MSMEs. The study of International Labor Organization (ILO) found that there are over 50 definitions of MSMEs in 70 countries with considerable ambiguity in the terminology used (Berisha & Pula; 2015). World Bank defines MSMEs as per composite criteria of the number of employees, total assets, and annual turnover. The number of workers constitutes an easily applicable criterion but it has certain limitations in the sense that the number of required workers varies according to the nature of business (Stokes & Wilson; 2010). For example, the manufacturing sector requires more workers than the service sector. The requirement of workers also varies within the industry, and obviously from industry to industry (Yadav & Kumar, 2017). Similarly, some industries require more investment and produce lower turnover as compared to other industries. Therefore, the government of India introduced new composite criteria based on investment and annual turnover to define enterprises in manufacturing and services as micro, small and medium enterprises in a comprehensive definition on 13th May 2020. Further, the government of India decided on 1st June 2020 to do an upward revision of medium enterprises. After revision, as per new composite criteria, a firm is considered under micro-enterprises category having investment less than INR 1 crore and turnover less than INR 5 crore, small enterprises are the ones having investment less than INR 10 crore and turnover less than INR 50 crore, and medium enterprises are the ones with investment and turnover less than INR 50 crore and INR 250 crore respectively, (Table 1). Any firm which exceeds the medium enterprise's criteria both in existing and new definition is considered as large firms.

Table-1: Existing and Revised Definition of MSME

Existing MSME Definition			
Criteria: Investment in Plant & Machinery or Equipment			
Classification	Micro	Small	Medium
Manufacturing Enterprises	Investment <Rs.25 Lakh	Investment <Rs.5 crore	Investment <Rs.10 crore
Services Enterprise	Investment <Rs.10 Lakh	Investment <Rs.2 crore	Investment <Rs.5 crore
Revised MSME Definition			
Composite Criteria: Investment and Turnover			
Manufacturing and Services Enterprises	Investment<Rs. 1 cr. and Turnover<Rs. 5 cr.	Investment<Rs. 10 cr. and Turnover<Rs. 50 cr.	Investment<Rs. 50 cr. and Turnover<Rs. 250 cr.

Table-2: No of Enterprises according to Existing/New Definition of MSMEs

Manufacturing Sector (No of Enterprises): Using ASI: 2015-16 & NSS 73rd Round: 2015-16									
	Existing Definition			New Definition			Change (New minus Existing)		
Enterprises	Reg.	Unreg.	Total	Reg.	Unreg.	Total	Reg.	Unreg.	Total
Micro	2853744	16630973	19484717	3064343	16684927	19749270	210598	53955	264553
Small	307504	54173	361677	102217	219	102435	-205287	-53955	-259242
Medium	11301	0	11301	19090	0	19090	7789	0	7789
Large	21670	0	21670	8570	0	8570	-13100	0	-13100
Total MSMEs	3172549	16685146	19857696	3185649	16685146	19870796	13100	0	13100
Total Enterprises	3194219	16685146	19879365	3194219	16685146	19879365	0	0	0
Services Sector (No of Enterprises): Using ASI: 2015-16 & NSS 73rd Round: 2015-16									
Micro	14193586	26401013	40594599	16451450	27065433	43516883	2257864	664420	2922283
Small	2378656	669404	3048059	157752	5961	163713	-2220904	-663443	-2884347
Medium	30324	773	31096	5808	6	5814	-24516	-767	-25282
Large	13148	211	13358	704	0	704	-12444	-211	-12655
Total MSMEs	16602566	27071189	43673755	16615009	27071400	43686409	12444	211	12655
Total Enterprises	16615713	27071400	43687113	16615713	27071400	43687113	0	0	0

Source: Author's computation from ASI 2015-16 and NSS 73rd Round 2015-16

Table 2 reports the number of firms as per the existing and new definitions in the manufacturing and service sectors respectively. In the manufacturing sector, the number of firms increased by 2.64 lakh; where 2.1 lakh accounted under registered manufacturing and 0.53 lakh accounted under unregistered manufacturing, under the micro-enterprises category. Under the medium enterprise category, there was an increase in total manufacturing units by 7789, wherein a 100 percent increase accounted for the registered firm. On the contrary, the small firm in manufacturing sector recorded a decline in their number by 2.5 lakh, where 2 lakh small firms accounted under registered small enterprises category and 0.5 lakh accounted under the unregistered small firm category. The number of firms reduced by 13100 in the large enterprises category firms[1]. In other words, due to definitional change, an additional 13100 firms

would come under the purview of MSMEs provisions. Post definitional change, number of MSMEs units in the services sector, we have observed that the number of firms increased by 29.22 lakh units under micro-enterprises category, where 22.57 lakh accounted under registered service sector enterprises and 6.64 lakh accounted under unregistered service sector enterprise respectively. In the context of small-enterprise, there was a decline recorded in service sector units by 28.84 lakh, and a decline was recorded in service sector units by 0.25 lakh 0.12 in the medium category and large enterprises category respectively. Overall, there is an addition of 12655 service sector firms under MSMEs provision (See Appendix-A).

Our analysis reveals that in the services sector distribution shifted towards micro enterprises whereas in manufacturing sector we observed that there was an increase in the number of firms both in micro and medium category. In the manufacturing sector, if we take a look at sector-wise distribution of 13100 large firms that came under the purview of MSMEs, the top 3 gainer are the food products sector that accounts for 11.53 percent, textiles account for 11.45 percent and fabricated metal products account for 7.65 percent. Similarly in the service sector, sector-wise distribution of 12655 large firms come under the purview of MSME. The top three gainer are the education sector that accounts for 33 percent, retail trade accounts for 18 percent, and human health sector accounts for 10 percent (See Appendix-A). Certainly, the definitional change of MSMEs has given a positive push to many firms across the manufacturing and service sector as these firms are now eligible for availing benefits enjoyed by MSMEs. Rotenberg (2019) found that supporting small-scale firms in India via various subsidy in form of lower interest rates, free skills training, export subsidy, tax exemptions, and providing digital market platform, etc. improves the aggregate productivity by 1 to 2 percent in the economy.

4. Registered & Unregistered Enterprises In Msmes

The categorization of the formal/informal sector was defined in the 17th International Conference of Labour Statisticians (ICLS) in 1997. National Commission for Enterprises in the Unorganised Sector (NCEUS; 2008), Government of India defined the formal/informal sector in the economy based on type of enterprise and the workers' size. This methodology has been widely adopted to define formal/informal sector of Indian economy. This paper defines formal/informal sector among the industry groups based on the firm's registration. Registered and Unregistered enterprises have already been defined in the previous section. Registered and Unregistered enterprises might be used interchangeably to signify formal and informal sector respectively. Our analysis shows the combined figures of NSS 73rd round and ASI (2015-16). Thus, the new classification figures could have diverged from the data reported in NSS 73rd report. The fourth census of MSMEs (2006-07) shows that only 5.95 percent (1.55 million) were registered enterprises in the economy and 13.89 percent (1.04 million) were registered manufacturing enterprises. NSS 73rd round shows that 15.1 percent and 30.9 percent of enterprises are registered in manufacturing and whole economy respectively. Our analysis reveals that 16.1 percent (3.2 million), 38 percent (16.6 million), and 31.2 percent (19.8 million) enterprises are registered in manufacturing sector, service sector, and whole economy respectively (Figure 1). The percentage of formal enterprises at micro-level in both the sectors is very low, especially in manufacturing. One-third of micro-enterprise in service sectors are formal, and this ratio has rapidly grown up in small and medium enterprises category. Only 14.6 percent (2.9 million) and 35 percent (14.2 million) micro-enterprises are registered in manufacturing and services respectively. Unregistered enterprises account for 18 percent in total industrial gross value added in which 94 percent comes from micro enterprises and rests from small enterprises. Unregistered manufacturing enterprises account for 9 percent in manufacturing GVA and while unregistered services enterprises contribute 32 percent in its GVA. Micro unregistered enterprises shared 96.5 percent and 92.4 percent in unregistered manufacturing and services enterprises respectively[1]. This indicates that unregistered micro-enterprises has a larger number of enterprises and workers but contribute lesser in GVA which is an indication that there is greater scope to make them registered. On the other hand, it has been observed that small, medium, and large enterprises are primarily in the registered sector. The turnover of these enterprises comes under the threshold limit of GST registration so that they are bound register in GST framework. Formalization of informal/unregistered MSMEs is highly relevant to boost up the MSMEs. Formalization is highly problematic in micro-enterprises where more than 95 million workers work in this sector which is approximately 76 percent of the total industrial workforce (Figure-2). The high rate of informality in micro-enterprises leads to low contribution in gross value added. Formalization helps in breaking the vicious circle of low productivity, enterprise performance, and precariousness of employment (ILO; 2015, Srivastava & Naik; 2016 and Srivastava, Padhai & Ranjan; 2020). Registration of enterprises has been rising after the introduction but it is still far away from desirable level, especially in the manufacturing sector.

The micro-enterprises are Own-account enterprises[2] (OAEs) and tiny establishment enterprises. Own-account enterprises are run without any hired workers, even if workers are hired they are not done so on a regular basis. Hence, micro-enterprises have not come under the purview of Employees Provident Fund (EPF) and Employees' State Insurance Scheme (ESIS). The turnover of micro-enterprises is very low which also restricts their registration within Goods and Services Tax (GST) framework. The threshold for

registration within the framework of GST is prohibitory, which means that it limits the formalization of micro enterprises. However, they can be transformed into formalized enterprises through the net of social security. The government of India amalgamated all the existing social security benefit acts passed between 1923 and 2008 and introduced a common social security code. The current code on social security recognizes the importance of social security in OAEs and tiny establishment. But it does not cover contributory workers, who are mainly female, and a large section of frontline nutrition and health workers, who have been described as "voluntary" workers

5. Key Constraints Faced By Msmes

The major constraints faced by MSMEs are following:

a) To Combat with aftermath of COVID-19

COVID-19 pandemic has brought an enormous loss of human lives and virtually crippled economies worldwide. This pandemic has adversely impacted enterprises and workers both in the organized and unorganized sectors of the economy. In particular, the COVID-19 lockdown has adversely impacted the MSMEs sector in terms of closure, job losses, revenue losses, and many units have reached the brink of becoming defunct. MSMEs sector has already been reeling under severe distress because of demonetization and poor implementation of GST. Prolonged economic slowdown compounded the problems faced by MSMEs and lockdown induced by COVID-19 might prove to be final nail in the coffin. The study conducted by the All India Manufacturing Organization (AIMO) among 46, 525 MSMEs between 24-31 May 2020 showed that 35% of MSMEs and 37 % of self-employed respondents said that their enterprises were beyond recovery. 32 % said that their recovery would take 6 months and 12 % said that it would take less than 3 months. Only 3 % of MSMEs, 6 % of corporates, and 11 % of self-employed said they were unaffected because they were involved in sectors related to essential goods/services. Another study was done by Magma Fincorp, and business school Bhavan's SPJIMR, it showed that 50 percent of MSMEs out of 14,444 MSMEs have witnessed a 20-50 percent impact on their earnings because of the COVID-19 pandemic. Estupinan et al. 2020 reported in their study that 111.18 million and 78.93 million workers were affected in Lockdown 1.0 & 2.0 respectively. They estimated around 58.85 million own-account workers lost their jobs during Lockdown 1.0 & 2.0. The data of Index of Industrial Production (IIP) which is a proxy of industrial performance showed that a negative growth rate was reported in major industries in the last few months. However, IIP for the month July 2020 reflects the gradual pickup in industrial activity in the economy but it is still below the initial points, and the IIP percentage growth rate between April-October is negative[1].

NSS 73rd round data showed that 29 percent of micro, 43 percent of small, and 43 percent of medium manufacturing enterprises were in the phase of expanding while more than 50 percent of manufacturing MSMEs have been in stagnant phase for last three years. 37 percent of manufacturing and service sector enterprises reported that they had faced problem of shortage of demand in the last three years. Demand has already been shrinking in the last few months in the economy and effects of COVID-19 pandemic might worsen the performance of MSMEs. The quick revival of the MSMEs sector would require a special focus on boosting exports and generating domestic demands.

b) Access to credit/finance/loan

Accessing credit through formal channels is one of the major bottlenecks to the MSMEs (Beck & Demirguc- Kunt, 2006; Bhattacharya, 2013). Access to finance for MSMEs contributes to economic development and poverty reduction (Kersten et al., 2017). The government of India has introduced many programs over time in order to bring flexibility in the system which could provide loan to MSMEs. The credit guarantee scheme was launched in August 2000 to ensure better credit flow to the MSMEs. The scheme covers collateral-free loan up to INR 50 lakh per borrowing unit. Pradhan Mantri MUDRA Yojana (PMMY) was launched in 2015 to provide loan up to INR 10 lakh to non-corporate, non-farm small/micro-enterprises. The MUDRA Annual Report 2018-19 shows that MUDRA sanctioned INR 7,558 crore and disbursed INR 7,130 crore in MSMEs during 2018-19. Reserve Bank of India (RBI) data show that credit to the MSMEs sector grew at an average of 8.5 percent during January-May 2018. Table-3 presents the loans and monthly interest payments by MSMEs. So far, more than INR 2 and INR 1 lakh crore loans have been availed by manufacturing and services MSMEs respectively. INR 3 thousand crore and INR 1.5 thousand crore per month was paid as an interest by manufacturing and service sector MSMEs respectively. The additional loan amount might put an extra burden on MSMEs. NSS 73rd round data showed that only 11 and 16 percent of manufacturing and service sector MSMEs respectively had credit problems in the last year respectively.

It is worthy to note that unregistered enterprises only availed 2 percent of overall loan taken by the enterprises, the remaining 98 percent of loan has been availed by registered enterprises. Registered enterprises easily access the loan from formal channel [2] while unregistered enterprises have had a problem in accessing loan from the formal channel (Nikaido et al., 2015; Bakhtiari , 2020 and Banerjee & Duflo, 2014). Figure-3 shows that more than 80 percent of loans have been provided by formal channels in the registered manufacturing and service sector MSMEs. While less than 50 percent of loans have been provided by the formal channel in the unregistered MSMEs. This indicates that unregistered enterprises have had the problem of accessing the credit from the formal channel. The unregistered enterprises could not fulfill the documentary requirements and that restricts access to credit from the formal channel. Recently, the government of India announced the INR 3 lakh crore loan scheme for MSMEs to revive this sector from distress generated by COVID-19 pandemic. It seems that the loan scheme would be helpful just for registered MSMEs unless problems associated with unregistered MSMEs are not sorted out.

Table-3: Loan & Monthly Interest Payment by Enterprises

Loan (Rs. In Crore)						
Manufacturing Sector			Services Sector			
Enterprises	Reg	Unreg	Total	Reg	Unreg	Total
Micro	25565	3780	29345	43015	19164	62179
Small	144349	100	144449	48344	3671	52015
Medium	55802	0	55802	9146	4	9151
Large	862276	0	862276	38641	40	38681
Total MSMEs	225715	3880	229595	100505	22839	123344
Total Enterprises	1087991	3880	1091872	139146	22880	162025
Monthly Interest Payment (Rs. In Crore)						
Micro	254.64	60.54	315.19	523.85	266.66	790.51
Small	1748.10	1.01	1749.11	557.77	54.59	612.36
Medium	784.38	0.00	784.38	109.29	0.05	109.34
Large	10549.32	0.00	10549.32	447.89	0.07	447.96
Total MSMEs	2787	62	2849	1191	321	1512
Total Enterprises	13336.45	61.55	13398.01	1638.80	321.36	1960.17

Source: Author's computation from ASI 2015-16 and NSS 73rd Round 2015-16

c) Lack of Skill Workers

Most micro-enterprises are OAEs and tiny establishments. OAEs run the enterprise without any hired workers. The OAEs are unskilled or have a low education level. There is a positive relationship between skill and formal employment. The share of formal employment tends to increase with an increase in skill attainment (Fatima and Sultana, 2009; Mazumdar and Neetha, 2011). A rise in the level of skill opens many opportunities in the labor market. They get the opportunity to move from agricultural sector to other better-off sectors in terms of average earning like manufacturing and service sectors. In other words, skill is positively related to upward mobility. Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) are the flagship programs of the government. PMKVY aimed to reach 10 million youth for skill enhancement during 2016-20. Under the DDU-GKY, it was estimated that 28 million youth would be trained till March 2022. As on 8th July, 2020, 10 million youth have been trained. The latest Periodic Labour Force Survey (PLFS) 2018-19 shows that only 1.96 percent self-employed workers have any type of technical education and the corresponding percentage is negligible for casual workers (0.50 %). The survey also shows that 1.72 percent of self-employed have formal vocational training and 15.50 percent of self-employed have informal vocational training. While 0.50 percent of casual workers have formal vocational training and 11.03 percent of casual workers have informal vocational training.

d) Access to infrastructure

Infrastructure is the basic building block of the economy and the one of the most important factors of the factor of production. Infrastructure facilities include all railways, waterways, roadways & airways, proper channels of telecommunication, adequate supply of power, tool rooms, testing labs, and design centers, etc. which need to be developed to attain the maximum growth in the MSMEs. NSS 73rd round data show that 42% and 26% manufacturing and services MSMEs respectively have had an input shortage problem in the last three years. The input shortage problem includes the issue related to erratic power supply/ power cuts, shortage of raw materials and labour disputes, and related problems. Allcott et al. (2016) have found that a shortage of electricity in India reduces the revenue of firms between the ranges of 5.6 percent to 7.7 percent and decreases the producer surplus by 9.5 percent. Electricity shortage prevents firms from adopting digital modes of operation as well as restricts the use of machineries in plant. Further, it influences the input choices and size of the firms. A study on Ghana small garments firms by Hardy and McCasland (2019) found that electricity blackout has a higher cost for the microenterprise firms with zero and one worker.

e) Access to technology & environment constraints

It is imperative to reduce industrial waste to foster environmental compliance. The concept of the Common Effluent Treatment Plant (CETP) is relevant example for MSMEs to manage water waste (FICCI, 2011). NSS 73rd round data show that 35.11 percent of enterprises have provision for solid waste management and 74.87 percent of enterprises do not generate liquid waste. Technology plays an important role in the economy, particularly in its development phase (FICCI, 2011 & Mehrotra; 2020). The use of inadequate technology leads to low productivity in the enterprise and precludes maximizing machinery utility, which in turn limits improvement in technology due to shortage of funds (Saini, 2014). Technology up-gradation has to be done in MSMEs in order to become competitive in the global market (Mukherjee, 2018).

f) Issues regarding regulatory facilitation

In order establish an enterprise as a private limited company the license such as TAN (Tax Collection & Deduction Account Number), VAT/GST Registration, Shops & Establishment License, Central Excise License, Service Tax Registration, PAN Card, Provident Fund Registration, and ESIS Registration, Importer Exporter Code, Professional Tax, construction permits from the Municipal Corporation have to be taken from the respective departments. Industry specific enterprises such as food industries, chemical & medical equipment industries, etc. have to secure clearance from the respective departments. Some of the above licenses are unnecessary and this lengthy documentary works put an undue burden on the prospective entrepreneur.

6. Determinants Of Msmes Value Of Output

In this section, we examine the possible factors which affect the value of output in the MSMEs using NSS 73rd round data. This paper considers the following factors such as; number of skilled workers, firm's registration, modernization, environmental monitor, capital intensity, ownership of the firm, industrial classification, location of the firm, and enterprise type. Semi-log linear function has been employed for estimating these variables simply. We have used the log value of output as a dependent variable.

Modernization: NSS asks the enterprise regarding maintenance of account from books of accounts (item no. 216 & 217) and whether they use computer during the 365 days (item no. 218). The modernization variable is constructed in a way that depends on either usage of computer or maintenance of accounts from books of accounts.

Environmental Monitor: If the enterprises have a provision of solid waste management (item no. 245) or enterprise have provision for liquid waste management (item no. 246) being considered an environmental monitor variable.

Capital Intensity: The total person engaged and fixed capital is used for measuring capital intensity.

Firm's Ownership: NSS gives information regarding the type of ownership such as; male proprietary, female proprietary, transgender proprietary, partnership with members of the same household, partnership between members not belonging to the same household, Self- Help Group, Trust, and Others. This paper classified firm's ownership into three groups i.e. Proprietary (Male. Female and Transgender proprietary), Partnership (partnership with members of the same household and partnership between members not belonging to same household), and Self- Help Group, Trust and Others are combined all three for the third group.

Industry Classification: The whole sector is divided into the manufacturing and service sector. . Manufacturing sector is covered by codes from 10 to 33 in National Industry Classification (NIC-2008) codes and service sector is covered by codes from 45 to 99 NIC-2008 codes.

Location of the Enterprise: NSS provides information about location of enterprise such as; within household premises, outside household premises, with fixed premises, and with a permanent structure, with fixed premises and temporary structure, with fixed premises but without any structure, mobile market, and without fixed premises (street vendors). Further, the location of the enterprise is categorized into three groups i.e. Within Household premises, Outside Household premises with fixed structure (outside household premises, with fixed premises and with permanent structure, with fixed premises and with temporary structure, with fixed premises but without any structure) and Mobile market & Street vendors.

Enterprise Type: There are two types of enterprise Own Account Enterprise and Establishment. Own Account Enterprise means an enterprise which is run by without hiring worker regularly and establishment means an enterprise which is run with at least one hired worker.

The nature of independent variables is represented in table 4. Table 5 gives the summary statistics of the variables and Table 6 shows the regression results.

Table-4: List of Variables used in Regression

Variables	Nature of Variables
Dependent Variable	
Log Value of Output	Continuous
Independent Variables	
Log of no of Skilled Workers	Continuous
Firm's Registration (Benchmark being Yes):	Categorical (Yes=1, No=0)
Modernization (Benchmark being Yes):	Categorical (Yes=1, No=0)
Environmental Monitor (Benchmark being Yes):	Categorical (Yes=1, No=0)
Capital Intensity	Continuous
Ownership (Benchmark being Proprietary):	
Partnership	Categorical
SHG, Trust & Others	Categorical
Industry Classification (Benchmark being Manufacturing Sector)	
Services Sector	Categorical
Location of the Firm (Benchmark being Outside Household premises with fixed structure)	
Within Household premises	Categorical
Mobile Market & without fixed structure	Categorical
Enterprise Type (Benchmark being Own Account Enterprise)	
Establishment	Categorical

Source: Author's computation from NSS 73rd Round 2015-16

Table-5: Summary Statistics of the variables

Variables	Observation	Mean	Std. Dev.	Min	Max
Value of Output	191940	13.039	1.444	2.484	22.370
No of Skilled Worker	201839	.5883	.7185	0	7.824
Firm's Registration	290113	1.553	.4971	1	2
Modernization	290113	1.887	.3158	1	2
Environmental Monitor	290113	1.562	.4960	1	2
Capital Intensity	287849	.0209	.0570	0	7
Ownership	290113	1.061	.2990	1	3
Industry Classification	289843	1.714	.4516	1	2
Location of the Firm	290113	1.786	.5783	1	3
Enterprise Type	290,113	1.450	.4975	1	2

Source: Author's computation from NSS 73rd Round 2015-16

Table-6: Regression Results

Variables	Coefficient	p value
No of Skilled Worker	.6668271	0.000
Firm's Registration (Benchmark being Yes):	-.483429	0.000
Modernization (Benchmark being Yes):	-.1914234	0.000
Environmental Monitor (Benchmark being Yes):	-.1636354	0.000
Capital Intensity	1.793845	0.000
Ownership (Benchmark being Proprietary):		
Partnership	.2993811	0.000
SHG, Trust & Others	-.4508502	0.000
Industry Classification (Benchmark being Manufacturing Sector)		
Services Sector	1.152792	0.000
Location of the Firm (Benchmark being Mobile Market & without fixed structure)		
Within Household premises	-.1454089	0.000
Outside Household premises with fixed structure	.1551982	0.000
Enterprise Type (Benchmark being Own Account Enterprise)		
Establishment	.444053	0.000
Constant	11.62705	0.000
Number of observation = 1,17,707		
R-squared = 0.4069		
Prob > F = 0.0000		

Source: Author's computation from NSS 73rd Round 2015-16

The above regression analysis establishes the statistical validity of constraints faced by the MSME sector. The number of skilled workers has a positive association with MSME output because skilled workers are more likely to learn about and adapt to changes in the production technology, gather latest market information related to product design and other new development pertaining to business activity. Regression analysis, further reveals that the variable 'the number of skilled workers' is significant at a one percent level of significance. Similarly, the skilled workers and the firm's registration give several advantages to the firm over unregistered firms such as access to formal credit, eligibility for various governmental schemes, and more awareness about the changes in the laws regarding business in the economy. It is noted that 98 percent of formal credit goes to registered firms. The regression result also shows that lack of registration of a firm is negatively associated with the firm's output and it is significant at a one percent level of significance. It is important to mention that maintaining a financial account is an essential requirement to avail loan from banks or any other private entity because it helps the bank to measure the net worth of the firm. Often small firms operate their business activities in informal ways; they don't maintain an account, do not use computer services such as access to internet, do not maintain basic data management of orders and inventory, etc. It was found that firms which don't maintain accounts and do not use computer services have negative impact on their output compared to modernized firms. The modernization variable is significant at one percent level of significance. Firms that are not environmentally aware in terms of solid or liquid waste management have negative impact on their value of output compared to more aware firms. Environment-friendly firms can cut their cost in long run either due to being eligible for a government subsidy or by making alternative use of waste in form of electricity generation etc. A firm which uses more machinery and technology have higher labor productivity in terms of per capita availability of capital to the labor as compared to firms with low capital intensity. The capital intensity variable is positively associated with firms' output (Table 6). Firm ownership types have clear implication for firms output because entrepreneur of the firms take several business decisions such as the amount to be invested in the business, pricing of the product, marketing strategy of the firm, location of the firm, hiring & firing workers in the firms, adoption of new technology, etc. The partnership firms have a positive impact on output because it gives advantage to the firm in the form of extra capital brought by the new partner in the firm and division of managerial work among partners improves the supervision of overall business activities.

Self-help group, trust, and others ownership type have a negative relation with firms output due to problem of a free rider, poor coordination regarding the management of the business activity, the problem in decision making due to difference of opinions amongst several members in the business, difficulty in establishing accountability due to absence of well-defined rules, etc. (Table 6). The variable 'location of a firm' has an important bearing on the firms' output, the firm located outside household premises with fixed structure has a positive relation with the output of firms and firms located within households has a negative relation with the output. It substantiates that infrastructure in terms of fixed structure with electricity is relevant for the firm's performance. In addition, the establishment has a positive relation with the firms' output and it is significant at one percent level of significance. Thus, our analysis empirically reveals the factors which influence the output of both manufacturing and service sector firms.

7. Conclusion

In the current situation, one of the biggest challenges for MSMEs is the shrinking demands in the economy. The index of industrial production (IIP) shows that the growth of all major manufacturing industries of MSMEs has had negative growth rate in the last few months and continued to be so from April to October 2020. The aftermath of COIVD-19 pandemic is likely to persist for some time in the future also. The new definition would lead to reshuffling of existing enterprises and also lead to addition of new enterprises, especially that of registered ones in the micro-enterprise category. The new loan scheme would be beneficial for registered enterprise unless bottlenecks associated unregistered MSMEs are not sorted out. Our analysis reveals that 16.1 percent (3.2 million), 38 percent (16.6 million), and 31.2 percent (19.8 million) enterprises are registered in manufacturing, services, and whole economy respectively. NSS 73rd round data showed that 29 percent of micro, 43 percent of small, and 43 percent of medium manufacturing enterprises were in the phase of expanding while more than 50 percent of manufacturing MSMEs have been in stagnant phase for last three years. 37 percent of manufacturing and service sector enterprises reported that they had faced problem of shortage of demand in the last three years. Demand has already been shrinking in the last few months in the economy and effects of COVID-19 pandemic might worsen the performance of MSMEs. The quick revival of the MSMEs sector would require a special focus on boosting exports and generating domestic demands. The government of India launched 4Es initiative which includes enterprise creation, employment generation, export, and ease of doing business to boost the MSMEs and make competitive them at global level. This initiative will also help MSMEs to export directly to global markets. There is a simultaneous scope to promote larger enterprises with MSMEs. Industrial growth cannot happen in a vacuum unless there is a way to promote the larger enterprises along with MSMEs.

Declarations

Availability of data and materials: Data is available in the public domain. On the request, data may be provided.

Competing interests: Not Applicable

Funding: Not Applicable

Authors' contributions: Not Applicable

Acknowledgements: Not Applicable

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Appendix

Appendix-A: Top Ten gainer industries from the new definition in Manufacturing & Services Sector MSMEs

Manufacturing Sector	Actual Gain	Services Sector	Actual Gain
Manufacture of Food Products	1510	Education	4146
Manufacture of Textiles	1500	Retail Trade except of motor vehicles	2308
Manufacture of Fabricated Metal Products	1002	Human Health Activities	1763
Manufacture of Rubber & Plastics Products	985	Accommodation	1294
Manufacture of Basic Metals	947	Wholesale & Retail Trade	1208
Manufacture of Other Non-Metallic Mineral Products	848	Warehousing & support activities for transportation	587
Manufacture of Chemical Products	820	Food & Beverage Service Activities	453
Manufacture of Machinery & Equipment	801	Wholesale Trade except of motor vehicles	237
Manufacture of Motor Vehicles	787	Legal & Accounting Activities	185
Manufacture of Wearing Apparel	708	Real Estate Activities	85
Others Manufacturing	3192	Others Services	388
Total Manufacturing Sector	13100	Total Services Sector	12655

Source: Author's computation from ASI 2015-16 and NSS 73rd Round 2015-16

Appendix-B: GVA in Registered and Unregistered Enterprises

GVA (Rs. Crore)	Manufacturing Sector			Services Sector			
	Enterprises	Reg	Unreg	Total	Reg	Unreg	Total
Micro	113426	131579	245005	310762	276678	587440	
Small	176399	4769	181168	228892	22662	251554	
Medium	66076	0	66076	22823	80	22902	
Large	980321	0	980321	58826	34	58860	
Total MSMEs	355902	136348	492250	562477	299419	861897	
Total Enterprises	1336222	136348	1472571	621303	299454	920757	

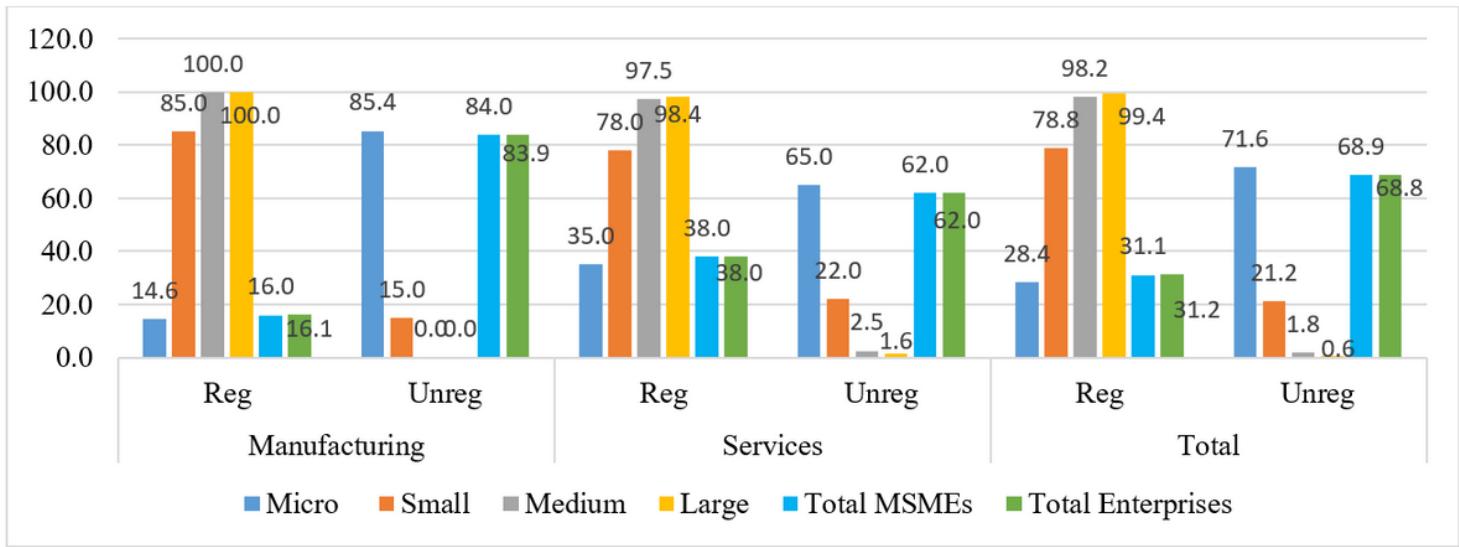
Source: Author's computation from ASI 2015-16 and NSS 73rd Round 2015-16

Appendix-C: Total Workers in Registered and Unregistered Enterprises

In Million	Manufacturing			Services			
	Enterprises	Registered	Unregistered	Total	Registered	Unregistered	Total
Micro	9.654	25.178	34.833	24.217	36.580	60.798	
Small	5.567	0.325	5.892	11.464	1.568	13.032	
Medium	1.275	0.000	1.275	0.758	0.003	0.761	
Large	7.715	0.000	7.715	0.965	0.002	0.967	
Total MSMEs	16.496	25.504	41.999	36.439	38.152	74.591	
Total Enterprises	24.211	25.504	49.715	37.405	38.153	75.558	

Source: Author's computation from ASI 2015-16 and NSS 73rd Round 2015-16

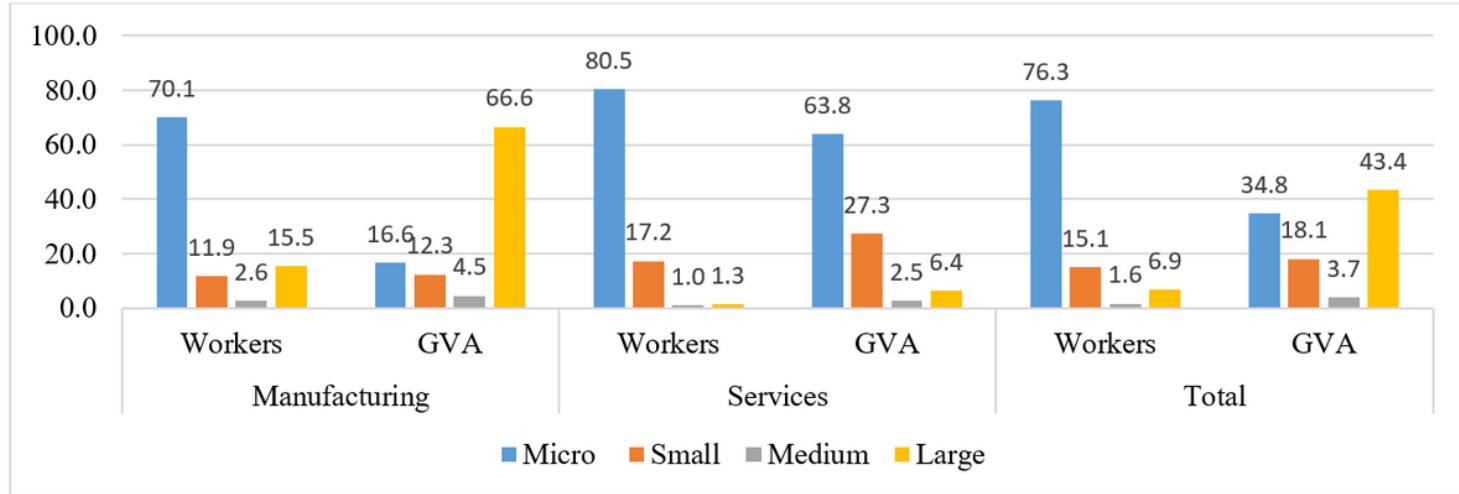
Figures



Source: Computed from table-2.

Figure 1

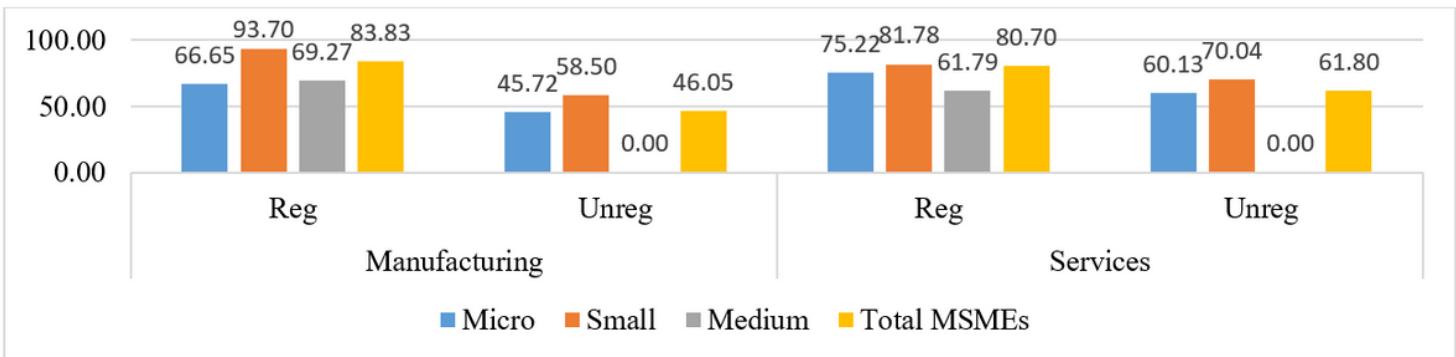
Percentage of registered/unregistered enterprises across MSMEs



Source: Author's computation from ASI 2015-16 and NSS 73rd Round 2015-16.

Figure 2

Percentage share of enterprises in Gross Value Added and Workers



Source: Author's computation from NSS 73rd Round 2015-16

Figure 3

% of loan share from the formal channel