Status of Micro Manufacturing Enterprises in West Bengal: An Analysis based on NSSO Unit Level Data

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Abstract:
Present paper analyses the recent position of Micro Manufacturing Enterprises (MMEs) of West Bengal in respect of ownership, nature of operation, life-span, productivity, profitability and status of growth on the basis of 67th Round NSSO Unit Level data. The density of MMEs is highest in West Bengal among the states of India where one MME exists per 7 households. In respect of employment in MMEs the West Bengal has got second position. Out of total female employment in West Bengal 29.4 per cent are employed in MMEs. Proprietary enterprises have the highest share in MMEs and within the proprietary enterprises the share of female enterprises is higher than that of male enterprises. Most of the MMEs are perennial. Productivity of MMEs is significantly high in establishment enterprises than that of own account enterprises (OAEs) but the profit rate is comparatively high in OAEs. Multinomial probit estimates indicate that expanding status of growth is caused for high productive, high profitable, rural located, establishment and perennial enterprises.

Keywords: Micro Manufacturing Enterprise, productivity, profitability, status of growth.

JEL Classification: D20, D24, L25

1. Introduction

Micro Manufacturing Enterprises (MMEs) play an important role to facilitate an effective mobilization of resources of capital and skill which might otherwise remain unutilized. This sector is identified with features like reliance on indigenous resources, family ownership of enterprise, small scale of operation, labour intensive, adapted technology and minimum skill. MMEs are instruments that allow poor to enhance their income, build assets, and take part in community actions. MMEs act as reduction of poverty and vulnerability of poor through enabling them to enhance self-empowerment and social dignity (Chowdhury, 2009). They are important sources of employment creation, income generation, product diversification and economic growth (Hussain, 2000). Agyapong (2010) points out that MMEs have been identified to play key role in a society by contributing to jobs through innovations and creativity as well as aiding human resources development. The livelihoods of the entrepreneurs have been improved to large extent after the undertaking of Micro Enterprising activities and they have been able to satisfy

their most needs and to accumulate assets (Subedi, 2006). Kanitkar (1994) advocates that MMEs growth stimulates competition and entrepreneurship which, in turn, enhances efficiency, innovation, and productivity growth.

The state like West Bengal where labour force are very high and majority of them are not able to absorb in organized industry or in service sector. The residual army who are not accessed in organized industry and service sectors enter into unorganized sector, specifically in the MMEs. NSSO (National Sample Survey Organization) data reveals that, in West Bengal, total employment has increased at the extent of 40,72,053 during the period 2004-05 to 2011-12. Out of total additional employment manufacturing employment has increased 67.3 per cent. Within the additional manufacturing employment only 5 per cent jobs has been created in the organized manufacturing sector and remaining 95 per cent employment has been generated in the unorganized manufacturing sector. In unorganized manufacturing sector most of the employment has been generated in the MMEs which is numbered out as 24,19,129. That is, a significant portion of new jobs (64 per cent) have been created in the MMEs.

Unemployment and under employment are growing problems in West Bengal. The large scale industrialization is much debated in West Bengal during recent years. Self-employment and micro business opportunities can be especially important for non-traditional entrepreneurs including women, low-income individuals, and dislocated or underemployed workers in rural as well as urban areas of West Bengal. In West Bengal MMEs have played an important role in respect of generation of employment and output. Among states of India West Bengal is ranked 1st in respect of generation of employment and 2nd in respect of generation of output in MMEs. The density of MMEs is highest in West Bengal among the states of India where one MME exists per 7 households. In this brief background the present paper analyses the recent status of MMEs of West Bengal in respect of ownership, nature of operation, life-span, productivity, profitability and status of growth.

NSSO 67th Round Survey[1] on *Unincorporated Non- Agricultural Enterprises (Excluding Construction) in India 2011* gives an opportunity to analyse the status of MMEs in India and her states. In 67th round NSSO Unit Level Data we have found that there exists 1,71,94,874 MMEs in India in 2011. Among total MMEs in India, 58.8 per cent are located in rural area and remaining 41.2 per cent in urban area. The estimated numbers of Own Account Enterprises (OAE) [2] are 83.9 per cent and establishment enterprises (ESTT) [3] are 16.1 per cent. In case of MMEs, in our country, the investment in plant and machinery does not exceed 25 lakh rupees as per Micro, Small and Medium Enterprises Development (MSMED) Act 2006. In West Bengal more than 27,63,784 MMEs are operating in 2011 wherein 50,06,261 persons are employed. In 67th Round NSSO Unit Level data, we have found 9032 sampled MMEs in West Bengal. By posting combined weight multiplier we have estimated total number of MMEs in West Bengal which is numbered out as 27,63,784. Among total MMEs in West Bengal, 78.2 per cent are located in rural area and 21.8 per cent in urban area. The estimated numbers of OAEs are 24,32,482 and ESTTs are 3,31,301. The survey explored different aspects of MMEs by the means of ownership, location, nature of operation, social ownership, life-span,

number of month operated, number of working hours, gross output, gross value added, employment, productivity, profitability and status of growth.

2. Relative position of West Bengal among States of India in respect of Status of MMEs

The intensity of MMEs and their contribution in respect of employment and output are higher in relatively developed states of India. Among them the state West Bengal is distinct because it stood 1st in respect of number of MMEs, 2nd in respect of employment generation in MMEs and 4th in respect of output generated in MMEs. Out of total MMEs in India the share of West Bengal is 16.1 per cent and out of total MMEs employment in India with 14.4 per cent are employed in West Bengal. About 10 per cent of total MMEs output in India produced in West Bengal. Out of total manufacturing output only 17.5 per cent comes from unorganized manufacturing sector and remaining 82.5 per cent are comes from organized manufacturing sector. Within unorganized manufacturing sector the share of output in MMEs is 99.4 per cent. In West Bengal, out of total manufacturing employment only 10.9 per cent are employed in the organized manufacturing sector and remaining 89.1 per cent are employed in the unorganised manufacturing sector. Within the unorganized manufacturing sector the share of employment in MMEs is is 99.6 per cent. In respect of status of MMEs of West Bengal in comparison with other states following points are noteworthy.

Table1: The contribution of MMEs of West Bengal in respect of India, 2011

	Manufacturing		Share of MMEs within Unorganized manufacturing sector	Share of MMEs of West Bengal to total MMEs in India	Rank on the basis of Previous column
	Organised Manufacturing	Unorganised Manufacturing			
No. of Enterprises	0.4	99.6	99.8	16.1	1st
Employment	10.9	89.1	99.6	14.42	2nd
Output	82.5	17.5	99.4	10.0	4th

Source: 1. 67th round (2011) NSSO Unit Level Data, MOSPI, Govt. of India
2. Annual Survey of Industries (ASI) 2010-11, MOSPI, Govt. of India.

Figure 1: Average number of households per MMEs across the states in India, 2011
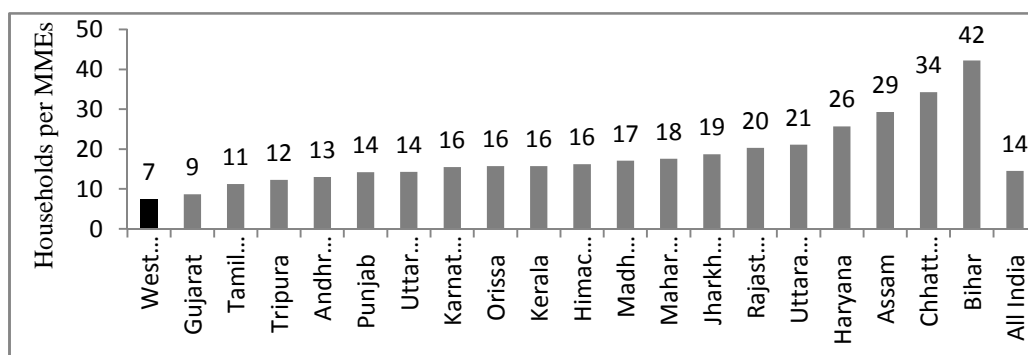
Source: NSSO Unit Level data, 2011 and Census of India 2011

First, density of MMEs, measured by the ratio of total number of households to total number of MMEs of a particular state, is highest in West Bengal where one MME exists per 7 households. Others relatively developed states like Gujarat, Tamil Nadu, Andhra Pradesh, Punjab and Uttar Pradesh have also experienced high density of MMEs. In India one MMEs exists per 14 households[4]. Density of MMEs is high in West Bengal because during the recent time a significant number of people are employed in MMEs due to the limited job opportunity in the big organized industry sector or in service sector (Fig. 1)
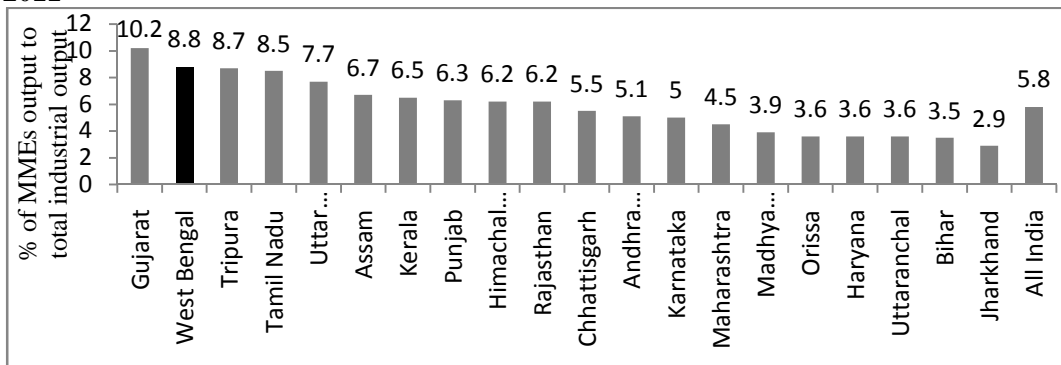
Figure 2: Share of MME employment to total employment across states in India, 2011
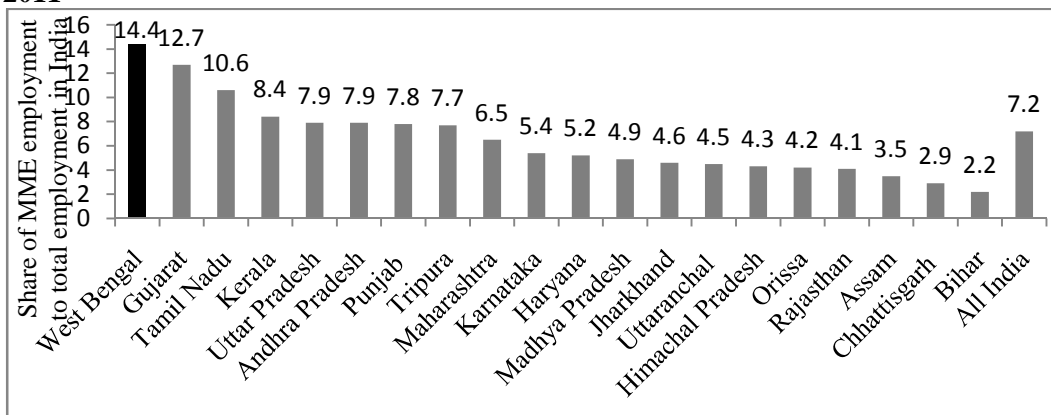
Source: NSSO Unit Level data, 2011 and Census of India 2011

Second, employment generation in MMEs, i.e, percentage share of MMEs employment to total employment in a particular state, is highest in West Bengal. Out of total employment in India 7.2 per cent are employed in MMEs but out of total employment in West Bengal 14.4 per cent are employed in MMEs. Other relatively developed states like Gujarat, Tamil Nadu, Kerala, Uttar Pradesh, Andhra Pradesh and Punjab have also experienced relatively higher share of employment in MMEs (Figure 2).

Figure 3: Share of MME output to total industrial output across the states in India, 2011

Source: NSSO Unit Level data, 2011

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Third, in respect of output production in MMEs West Bengal has got 2nd position (after Gujarat) among the states of India. The share of MMEs output to total industrial output is 5.8 per cent in India and 8.8 per cent in West Bengal. That is, MMEs have played an important role in output production in West Bengal (Figure3).

Figure 4: Share of MME female workers to total female worker across the states in India
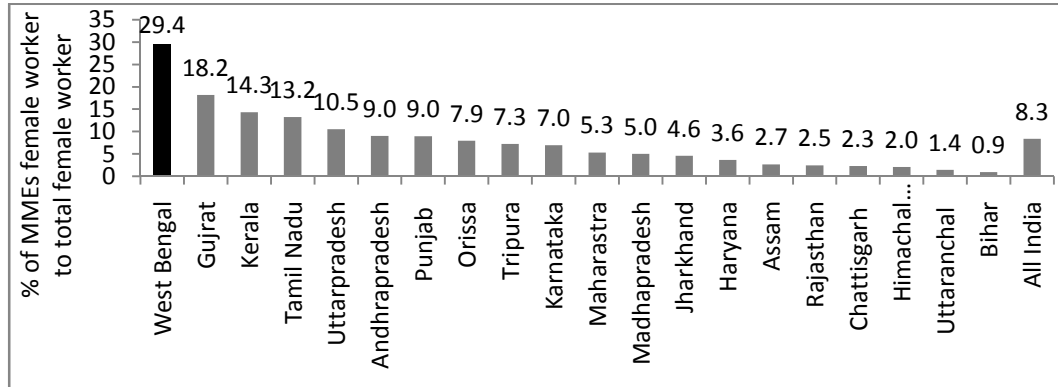
Source: NSSO Unit Level data, 2011 and Census of India 2011

Fourth, the state West Bengal is distinct in respect of female employment generation in MMEs. As many as 29.4 per cent of total female worker are employed in MMEs. The share of MMEs female worker to total female worker is 8.3 per cent in India. It is significantly high in West Bengal in comparison with other states of India. That is, MMEs have played an important role in generation of female employment in West Bengal (Figure 4).

3. *Ownership, Nature of Operation and life-span of MMEs in West Bengal*

Table 2 shows the percentage distribution of the MMEs by type of ownership and nature of enterprise of West Bengal in 2011. The nature of ownership of the most of the MMEs is proprietary enterprises owned by a single household and within the proprietary enterprises the share of female enterprises is higher than that of male enterprises. Only 5 per cent of enterprises are operated on a partnership basis and the share of ownership of self-help groups, trusts and others are miniscule. Most of the establishment MMEs (89.5 per cent) have been owned by male. But for OAEs female ownership is higher than that of male ownership. The contracting feature of male and female ownership of MMEs is also observed in respect of locations

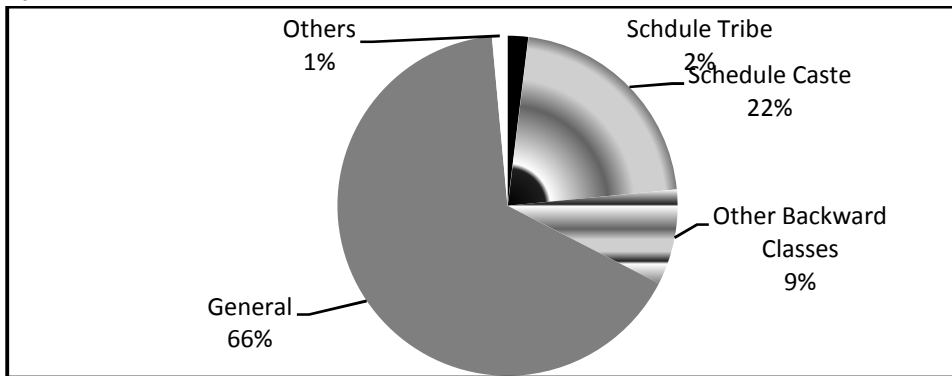**Table 2: Distribution of MMEs by type of Ownership in West Bengal, 2011**

Type of Ownership		Rural			Urban			Rural +Urban		
		OAE	ESTT	All	OAE	ESTT	All	OAE	ESTT	All
Proprietary	Male	35.0	90.0	39.1	47.0	89.1	59.1	37.1	89.5	43.4
Proprietary	Female	60.4	3.1	56.2	48.6	4.5	36.0	58.3	3.8	51.6
Partnership	Same HHs	4.4	6.5	4.6	4.3	5.1	4.5	4.4	5.8	4.6
Partnership	Different HHs	0.2	0.4	0.2	0.1	1.2	0.4	0.2	0.8	0.4
Self-help groups		0.1	0	0.1	0	0	0	0.1	0	0.1
All		100 (2002649)	100 (159086)	100 (2161735)	100 (429833)	100 (172215)	100 (602048)	100 (2432482)	100 (331301)	100 (2763784)

Note: Figures in parenthesis indicate the percentage share.
Source: NSSO Unit Level survey data on Unincorporated Non-Agricultural Enterprises (Excluding Construction) in India 2011.

of MMEs. Rural located proprietary MMEs are dominated by female where as urban units are dominated by males. On the whole, in case of household enterprises relatively higher number of female have engaged in MMEs. That is females have played an important role in MMEs in West Bengal. Proprietary MMEs act as a catalyst to improve the socio economic condition of the women and help them to access and control the resources. For partnership MMEs, in contrast, establishment enterprises are higher than OAEs in both rural as well as in urban area.

Figure 5: Distribution of MMEs by Social Group of Ownership in West Bengal, 2011

Source: NSSO Unit Level data, 2011

The distribution of MMEs by social group of ownership (as shown in Figure 5) revels that majority MMEs have owned by general caste households- 63.9 per cent in rural areas

and 73.3 per cent in urban area. The ownership of MME by scheduled tribes (ST) community is significantly low- only 2.4 per cent in rural and 0.4 per cent in urban. Their ownership of establishment is also invariably low (1 per cent). The ownership of MMEs by SC and OBC communities are also comparatively low. About 23.2 per cent in rural and 15.4 per cent in urban of MMEs are owned by SC households. Out of total MMEs 22 per cent have owned by SC households and 9.1 per cent owned by OBC households.

Table 3: Distribution of MMEs of West Bengal by the Nature of Operation, 2011

Nature of Operation	Rural			Urban			Rural + Urban		
	OAE	ESTT	All	OAE	ESTT	All	OAE	ESTT	All
Perennial	97.7	98.7	97.8	98.8	99.8	99.1	97.9	99.3	98.1
Seasonal	2.1	1.2	2.0	0.5	0.2	0.4	1.8	0.7	1.7
Casual	0.2	0.1	0.2	0.7	0	0.5	0.3	0	0.2
All	100	100	100	100	100	100	100	100	100

Source and Note: As in Table 1

Table 3 shows the distribution of MMEs by type of the nature of operation. An enterprise may be operated more or less throughout the year or in seasons or intermittently throughout the year and accordingly they are termed as perennial, seasonal and casual enterprises, respectively. Most of the MMEs (98 per cent) are operating throughout the year i.e, perennial. The distribution of MMEs in respect of nature of operation does not differ significantly between rural and urban areas, or between OAEs and establishment enterprises.

Table 4: Distribution of MMEs of West Bengal by Life-Span, 2011

| Life-span (years)	Rural			Urban			Rural + Urban		
	OAE	ESTT	All	OAE	ESTT	All	OAE	ESTT	All
0—10	53.5	57.1	53.7	59.8	45.5	55.8	54.6	51.1	54.2
11—20	33.1	30.5	32.9	25.3	37.7	28.9	31.8	34.2	32.1
21—30	11.1	8.4	10.9	10.0	9.2	9.8	10.9	8.8	10.7
above 30	2.3	4.0	2.4	4.8	7.6	5.6	2.7	5.9	3.1
All	100	100	100	100	100	100	100	100	100

Source and Note: As in Table 1

From the distribution of life-span of MMEs in West Bengal it is evident that greater numbers of enterprises have been established during last 10 years—54.6 per cent of OAE and 51.1 per cent of establishment enterprises. There are 32.1 per cent MMEs with life-span 11 to 20 years, 10.7 per cent with 21-30 years and only 3.1 per cent with 30 years and above that is, number of MMEs are decreased with increase their life-span. A significant number of people are employed in the micro manufacturing activities during last 10 years due to the limited job opportunity in big organized industry sector or in service sector. Among OAE 53.5 per cent in rural and little higher (59.8 per cent) in

urban have life-span less than 10 years. For ESTT 57.1 per cent in rural and little lower (45.5 per cent) in urban have life span less than 10 years (Table 4).

4. Labour Productivity and Profitability of MMEs in West Bengal

Labour productivity[5], measured by gross value added[6] per manday, is widely varied across enterprises. It is significantly low in OAE in comparison with establishment enterprises. For OAEs 51.4 per cent of MMEs having the labour productivity Rs. 50 per manday or less but in case of establishment it is only 0.6 per cent. For establishment 63.9 per cent of MMEs having the labour productivity more than Rs. 200 per manday but in case of OAE it is only 4 per cent. There are 36.4 per cent of MMEs having the labour productivity more than Rs. 500 per manday but in case of OAE it is 0.3 per cent. Labour productivity is significantly high in establishments than that of OAEs because average use of capital for establishment enterprises is higher than that of OAEs. It is also significantly high in establishment enterprises because establishment entrepreneurs are becoming more progressive in doing their business management and accessing markets as compared to OAEs. Furthermore, it is significantly high in proprietary male run enterprises than that of female run enterprises (Figure 6).

Figure 6: Distribution of Labour Productivity by Types of MMEs

Source: NSSO Unit Level data, 2011

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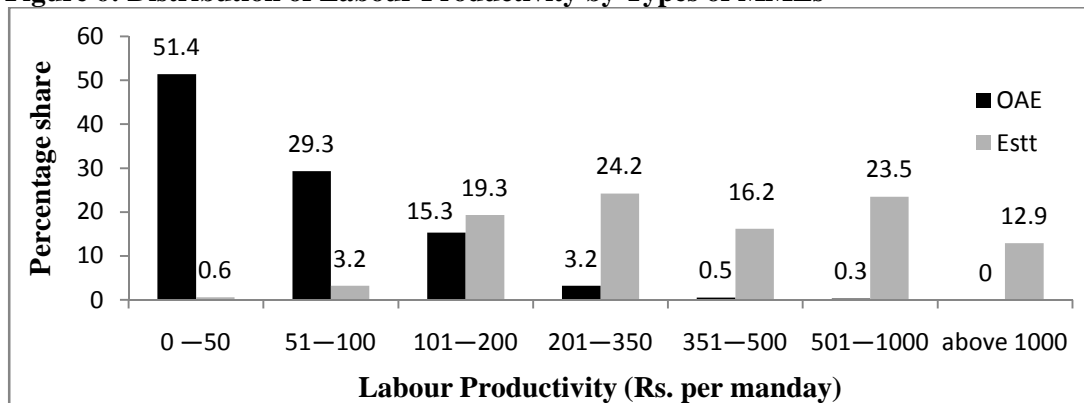
Table 5: Distribution of Profit Share of MMEs in West Bengal, 2011

Profit share (%)	Rural			Urban			Rural + Urban		
	OAE	ESTT	All	OAE	ESTT	All	OAE	ESTT	All
0—30	8.5	53.9	11.8	11.5	60.0	25.4	9.0	57.1	14.8
31— 60	9.6	38.9	11.8	12.9	34.3	19.0	10.2	36.3	13.4
61—80	13.5	7.0	13.0	29.0	5.1	22.2	16.2	6.0	15.0
81—95	56.9	0.1	52.7	40.1	0.6	28.8	54.0	0.4	47.5
above 95	11.5	0.0	10.7	6.5	0.0	4.6	10.6	0.2	9.3
All	100	100	100	100	100	100	100	100	100

Source and Note: As in Table 1

Besides labour productivity profitability of MMEs is also important for the survival of MME and its desire outcomes on the livelihood. Net surplus is the profit of the enterprise and it is measured by excluding the factors cost like raw materials, wage, rent and interest from the income of enterprises. Profit share, ratio of net profit to gross value added, by types of MMEs and their location is shown in Table 5. Profit share of OAE is relatively higher than that of ESTT in both rural and urban areas. There are 64.6 per cent of OAEs having the profit share more than 80 per cent but in case of establishment it is 0.4 per cent. The profit share is more than 95 per cent in 11.6 per cent OAE and it is only 0.2 per cent in establishment enterprises. In rural area 18.1 per cent OAE having the profit share less than 60 per cent but in case of establishment it is 92.8 per cent. In urban area 24.4 per cent OAE having the profit share less than 60 per cent but in case of establishment it is 94.3 per cent.

Table 6: Test of Profit share between Establishments and OAEs

	OAE	ESTT	Test of $H_0 : \sigma_1 = \sigma_2$ against $H_1 : \sigma_1 \neq \sigma_2$	Test of $H_0 : \mu_1 = \mu_2$ against $H_1 : \mu_1 > \mu_2$
Mean	65.28	27.14	$F = \dfrac{\frac{s_1^2 n_1}{n_1 - 1}}{\frac{s_2^2 n_2}{n_2 - 1}}$ $= 2.49$ Table value of F is 1.05 at 1 % level. Therefore, H_0 is rejected.	$\dfrac{\overline{X_1} - \overline{X_2}}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \sim \dfrac{W_1, t_{\alpha, n_1 - 1} + W_2, t_{\alpha, n_2 - 1}}{W_1 + W_2}$ Where, $\overline{X}_1$ and $\overline{X}_2$ are respective means. Observed value is 76.41. Since the table value is 1.645 at 1 % level, the observed 'Approximate-t' leads to the rejection of H_0. Df = 8277.
SD	28.69	18.17		
SD^2	823.5	330.13		
N	4827	4204		
df	4826	4203		

Note: μ_1 & σ_1 are the mean & sd of the profit share of OAEs, where as μ_2 & σ_2 are the respective values of ESTT, statistical tests have been done following the methodology of Goon, Gupta and Dasgupta (1968) pp, 396-404. SD = Standard Deviation, df = degrees of freedom, n = no of observations.
 Sources: Authors' calculation.

From the test results (as given in Table 6), it is concluded that profit share is significantly high in OAEs than that of establishment enterprises. The main reason

behind this is that most of the own account micro entrepreneurs start their enterprises within the household premises, used their own resources (or local resources) and family labour, and produced by low capital. In most of the cases the owners of the OAEs don't pay factors cost like raw materials, wage, rent, interest and have enjoyed the entire profit by themselves. Most of the establishment enterprises have accessed loan, used the hired labour and hired assets and ran the business outside the household premises. The profit share of establishment enterprises is relatively low because the entrepreneurs pay the factor costs like raw materials, wage, interest and rent of hired assets. The fact is that the profit share is significantly low in female owned enterprises than that of male owned enterprises. Female owned enterprises profitability low because women are likely to operate in low risk and low technology industries such as petty trading. The profitability of female owned enterprises is low because women relative to men have less access to financial capital and have fewer resources to invest in business activities (Loscocco et al. 1991).

5. Status of Growth of Micro Manufacturing Enterprises in West Bengal

In NSSO survey 2011, the status of growth of enterprises is classified in four categories viz, expanding, stagnant, contracting and others on the basis of their performance during last three years. The status of growth of the enterprises with life-span less than 3 years is not specified and treated as others. In West Bengal the status of growth is expanding in 34.6 per cent of MMEs whereas around 46.1per cent of MMEs are stagnating. It has been observed that OAEs are more stagnating as compared to establishment enterprises in rural as well as in urban area. In urban area higher number of both OAEs and establishment enterprises are contracting as compare in the rural area. Higher number (as well as share) of establishment MMEs have been showing expanding in their nature of growth in comparison with OAEs. On the whole 38 per cent establishments MME are expanding in comparison with 34 per cent of OAEs. That is, from the status of growth of MMEs in West Bengal it is evident that establishment enterprises are more promising (Table 7).

Table 7: Distribution of MMEs by type of the Growth Status in West Bengal, 2011

Category	Rural			Urban			Rural + Urban		
	OAE	ESTT	All	OAE	ESTT	All	OAE	ESTT	All
Expanding	35.7	37.4	35.8	27.2	38.1	30.3	34.2	37.8	34.6
Stagnant	47.0	46.2	46.9	44.6	38.6	42.9	46.6	42.3	46.1
Contracting	10.7	8.2	10.5	14.9	13.3	14.4	11.4	10.8	11.4
Others	6.6	8.2	6.7	13.3	10.0	12.4	7.8	9.2	7.9
All	100	100	100	100	100	100	100	100	100

Source and Note: As in Table 1

Figure 7: Distribution of Growth Status of MMEs by Social Group of Ownership
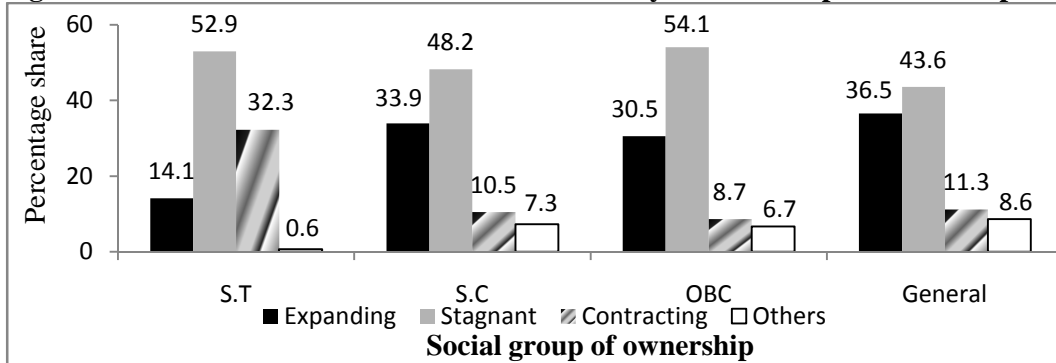
Source: NSSO Unit Level data, 2011

Figure 7 shows the distribution of the status of growth by social group of ownership. For ST owned MMEs only 14.1 per cent, least share among other groups of social ownership, are expanding. It is also observed that higher number of ST owned enterprises are contracting in comparison with SC, OBC and general caste owned enterprises. For OBC owned MMEs 30.5 per cent are expanding and 54.1 per cent are stagnating. For General Caste owned MMEs 36.5 per cent are expanding and 43.6 per cent are stagnating. That is, higher number of OBC owned enterprises are stagnating and higher number of general caste owned enterprises are expanding.

Table 8: Distribution of MMEs by Status of Growth and Life-Span in West Bengal

Life- span (yrs)	Expanding	Stagnant	Contracting	Others	Total
0—10	26.2	47.7	11.5	14.6	100 (1497503)
11—20	45.2	45.5	9.2	0.0	100 (885868)
21—30	45.2	40.5	14.4	0.0	100 (294660)
above 30	36.6	42.6	20.8	0.0	100 (85753)
All	34.6 (957555)	46.1 (1272869)	11.4 (314144)	7.9 (219216)	100 (2763784)

Source and Note: As in Table 1

From this distribution of MMEs it is evident that the status of growth of MMEs is expanding if the enterprise has spent more years and the status of growth of MMEs is stagnating if the enterprise has spent less years. Numbers of MMEs decreased with increase the life-span of the enterprise. During last 10 years the status of growth is expanding in 26.2 per cent MMEs and stagnating in 47.7 per cent MMEs. The status of growth is expanding for higher number of MMEs (45.2 per cent) with the life-span 11 to 30 years. Whereas, the status of growth is contracting for higher number of MMEs with the life span 30 years and above (Table 8).

6. Analysis of Status of Growth of MMEs
Specifications of the Variables
Status of growth (STGR) of MMEs is multinomial and we have assigned the values 1, 2, 3 and 4 for expanding, stagnating, contracting and others (nature not specified) MMEs

respectively and it depends on the specific characteristics of MMEs. The notations and specifications of status of growth and its determinants are presented in Table 9.

Table 9 Notation, Specification and Summary Statistics of Variables used in the Regression Model

Notation	Specification	Average	Min	Max	SD
	Dependent variable				
STGR	Status of growth is categorized as 1 if expanding, 2 if stagnating, 3 if contracting, and 4 if others.	1.96	1	4	0.92
	Independent variables				
ESTT	Nature of enterprises: Whether the MME is establishment or not (Yes = 1, No = 0).	0.47	0	1	0.50
LOCN	Location of enterprises: Whether the MMEs is located in urban area or not (Yes=1, No= 0).	0.40	0	1	0.49
NOPN	Nature of operation: Whether MME is perennial or not (Yes=1, No=0).	0.98	0	1	0.14
GOVA	Whether MMEs is received government assistance or not, (Yes= 1, No=0).	0.02	0	1	0.12
LPRD	Labour Productivity of MME is measured by gross value added per manday.	476.93	4.33	46714.5	1608.3
PRAT	Profit rate of MME is the ratio of net profit to net sells of enterprises.	0.37	-0.24	500	5.64

Source and Note: As in Table 1

Multinomial Probit Model and Its Estimation for Status of Growth of MMEs

Multinomial Probit Model is used to explain the status of growth of Micro Manufacturing Enterprises. It is assumed that we have a set of observations Y_i, for $i = 1...n$, of the outcomes of multi-way choices from a categorical distribution of size m = 4. Along with Y_i there are a set of k observed values $x_{1,i}$, ..., $x_{k,i}$ of explanatory variables like labour productivity (LPRD), nature of enterprise (ESTT), location of enterprise (LOCN), nature of operation (NOPN), government assistance (GOVA) and profit rate (PRAT).

The outcomes Y_i are described as being categorically-distributed data, where each outcome value h for observation i occurs with an unobserved probability $p_{i,h}$ that is specific to the observation i in hand because it is determined by the values of the explanatory variables associated with that observation. i.e,

$Y_i \mid x_{1,\ i},.......,x_{k,i} \sim$ Categorical $(p_i,...., p_m),$ *for* $i=1, ..., n$

or equivalently

Pr $[Y_i=h \mid x_{1,\ i},.......,x_{k,i}.] = p_{i,\ h}$, for i=*1, ..., n,*
for each of *m* possible values of *h*.

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Multinomial probit is often written in terms of a latent variable model (Imai and Van Dyk 2005)

$$Y_i^{1*} = \beta_0 X_i + \epsilon_1$$
$$Y_i^{2*} = \beta_1 X_i + \epsilon_2$$
$$\ldots\ldots\ldots\ldots\ldots$$
$$Y_i^{m*} = \beta_m X_i + \epsilon_m$$

Where, $\epsilon \sim N(0, \Sigma)$ then

$$Y_i = \begin{cases} 1 & if\ Y_i^{1*} > Y_i^{2*}, \ldots\ldots\ Y_i^{m*} \\ 2 & if\ Y_i^{2*} > Y_i^{1*}, Y_i^{3*}, \ldots., Y_i^{m*} \\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots.. \\ m & otherwise \end{cases}$$

That is,

$$Yi = arg\ \max_{h=1}^{m} Y_i^{h*}$$

The likelihood function for multinomial probit is derived under the assumption that all decision-making units face same choice set, which is the union of all outcomes observed in the dataset.

Table 10: Multinomial Probit Estimation of Status of Growth of MMEs

Multinomial Probit Regression					No of obs. = 9032	
Log likelihood = -10796.07					Wald chi^2(18) = 245.74	
					Prob> chi^2 = 0.0000	

Variables	Expanding		Stagnating		Contracting	
	co-efficient	z values	co-efficient	z values	co-efficient	z values
constant	0.159	0.96	0.457	2.76***	0.078	0.44
LPRD	0.000033	2.03**	-0.000059	-3.11***	-0.00015	-4.03***
ESTT	0.293	5.56***	-0.072	-1.59*	0.0288	0.47
LOCN	-0.159	-3.08***	-0.095	-1.87*	0.071	1.23
NOPN	0.674	4.16***	0.525	3.36***	-0.189	-1.87*
GOVA	0.046	0.19	-0.0123	-0.05	-0.064	-0.21
PRAT	0.033	2.35***	0.00042	0.10	-0.0042	-0.49

(Status of growth = 4 is the base outcome)
*** Significant 1 percent level, ** significant at 5 percent level, * significant at 10 percent level.

The status of growth of MMEs is significantly explained by labour productivity (LPRD), nature of enterprise (ESTT), location of enterprise (LOCN), nature of operation (NOPN) and profit rate (PRAT). The expanding status of growth is significantly realised for high productive, high profitable, rural located, establishment and perennial enterprises. It is

contracting for low productive, seasonal and casual enterprises. It seems to be stagnating for low productive, OAEs and perennial enterprises. For establishment enterprises the status of growth is expanding where as for OAEs status of growth is stagnating. The main reason behind this is that the establishment entrepreneurs are becoming more progressive in doing their business management and accessing market as compared to OAEs. They are able to increased market access, enhanced investment flows, skill development and technological advancements. Whereas most of the own account entrepreneurs are poorly educated, less efficient, low skilled and utilized their small size of business. Their business management and product distribution system are relatively insignificant in comparison to establishment enterprises. They are unable to raise their productivity. The status of growth of MMEs is expanding in high profitable enterprises. Rural located and perennial types of enterprises are also experienced stagnating nature of growth. Status of growth for Perennial enterprises is expanding and stagnating and it is contracting for Seasonal and casual enterprises. The Government assistance does not significantly affect on status of growth.

7. Conclusions

MMEs in West Bengal have been made significant contribution towards generation of employment and output in the state economy. In West Bengal, on an average one MME exists per seven households. In respect of employment in MMEs the West Bengal has got second position. About ten per cent of total MME output in India produced in West Bengal. About fifty one per cent of MMEs are owned by women compared to forty four per cent by men. Proprietary enterprises had the highest share in MMEs and within the proprietary enterprises the share of female enterprises is higher than that of male enterprises. In West Bengal majority of MMEs have owned by general caste household and the share of ownership of MMEs by SC and ST communities are significantly low. Productivity of MMEs is comparatively high in establishment enterprises than that of OAEs but the profit rate is comparatively high in OAEs than that of establishment enterprises. A greater number of MMEs are established during last ten years due to the limited job opportunity in the big organized industry sector or in service sector. A significant portion of MME is expanding. The expanding status of growth is significantly realised for high productive, high profitable, rural located, establishment and perennial enterprises. The growth status is contracting for low productive, seasonal and casual enterprises. It seems to be stagnating for low productive, OAEs and Perennial enterprises. The government assistance does not significantly affect on status of growth.

Notes

1. 67th Round NSSO Unit Level data on *Unincorporated Non- Agricultural Enterprises (Excluding Construction) in India 2011*published on February 2013.
2. An enterprise which is run without any hired worker employed on a fairly regular basis is termed as an Own Account Enterprises.

3. An enterprise which is employing at least one hired worker on a fairly regular basis is termed as establishment enterprise. Paid or unpaid apprentices, paid household member/ resident worker in an enterprise are considered as hired workers.
4. Number of MMEs is much higher in the states like West Bengal, Uttar Pradesh, Tamil Nadu, Andhra Pradesh, Gujarat and Maharashtra and these six states are accounted for 64.9 per cent MMEs of India. Therefore, the average number of household per MMEs is 14 in India inspite the other 13 states have higher value.
5. We have used gross value added per manday instead of gross value added per workers because the time that workers spent in MME is widely varied own account enterprises.
6. The gross value added and income of the enterprises are the same and it is measured by product methods and factor income methods respectively. Gross value added is taken as additional value created by the process of production of an enterprise to the economy. By factor income methods gross value added is measured by addition of total emoluments, rent, interest payment and net profit of enterprises. By product methods gross value added is measured by deducting total operating expenses and distributive expanses from the value of total output of enterprises.
7. Gebreeyesus (2009), reveals that establishment MMEs raise their productivity and growth through enhancing technology and innovation capabilities such as upgrading product quality, improving design and packaging and training to improve competitiveness.

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