Growth of Micro Manufacturing Enterprises during 2010-11 to 2015-16: A Study with Special Reference to West Bengal
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Abstract

Present study analyses the pattern of growth of micro manufacturing enterprises (MMEs) in the context of West Bengal. The growth of MMEs is noticeable in respect of number of MMEs, employment generation and gross value added (GVA). This analysis is based on the unit level data of NSSO 67th (2010-11) and 73rd (2015-16) rounds. The study reveals that annual growth rate of per enterprise GVA was significantly increased during 2010-11 to 2015-16. But it was not in the case for employment. The number of own account enterprises (OAEs) was significantly higher than establishment enterprises (ESTTs). Female workers were more engaged in MMEs than the male workers. The ownership MMEs increased for Other Backward Caste people. The percentages share of expanding enterprises decreased whereas the percentage share of contracting enterprises increased during 2011-10 to 2015-16. The multinomial regression result of the status of growth of MMEs reveals that rural located, establishment, perennial and higher labour productive MMEs are more likely to be expanding.

Keywords: Unorganised Manufacturing, Employment, GVA, Growth.

JEL Classification: L60, R11, J21, J24.

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INTRODUCTION

Unorganized sector has been playing a significant role in Indian economy in the context of employment generation. According to National Sample Survey Organization (NSSO) report, manufacturing, trade, and service sectors are included in the unorganized sectors. According to MSME act 2006, the manufacturing sector is classified by micro, small, and medium enterprises as per their size. Presently, the micro, small, and medium enterprises sector have been considered as a resonant and dynamic sector in India. According to NSSO, enterprises can be classified into two types: own account enterprise (OAE) and establishments enterprise (ESTT). The enterprises that are run without any hired workers who are employed on a fairly regular basis is called OAE and those enterprises who are employing at least one hired worker on a fairly regular basis is called ESTT. In the present study we have considered only micro manufacturing enterprises (MMEs) in the context of West Bengal. MME refers to an economic unit that is involved in the production of manufacturing goods where investment does not exceed Rs.25 lakh. In India, 99.46 percent of the enterprises were micro-enterprises in nature (NSSO report 2010-11). Among the other states of India, we have laid emphasis on West Bengal and compared it with the rest of the states of India. The number of educated workforce is increasing day by day. But, the potentiality to employ in the organized sector in West Bengal is not accommodative accordingly. Hence, the educated and laborious workforce is trying to find out the space of economic engagement within the space of the unorganized sector, like MMEs. In West Bengal, MMEs are expanding from various aspects like the number of enterprises, employment generation, and gross value addition (GVA). If we compare the NSSO report 2010-11 and 2015-16, we observe that in West Bengal the number of enterprises has increased from 2,763,781 in 2010-11 to 4,175,467 in 2015-16. This indicates that in West Bengal the number of enterprises has increased remarkably. Side by side employment opportunities have also increased in this sector as in 2010-11 the number of employments was 9,002,441 which increased to 6,939,129 in 2015-16. Among the other states of India, West Bengal ranked 1st, 2nd, and...
In respect of the number of MMEs, generation of employment, and gross value added (GVA) in 2010-11 respectively. But in 2015-16, West Bengal ranked 1st in respect of number of MMEs and employment generation whereas backed 5th position in respect of GVA.

Subina [1] conducted a study that focused on the growth of Indian Micro, Small and Medium Enterprise (MSME) sector over the last ten years. The paper highlighted the opportunities available for the MSMEs in the Indian economy. Gebreeyesus [2] showed that the manufacturing sector is involved in innovative activities and mentioned some factors that affected the growth of the firm i.e., firm’s initialize age, access to finance, sector, and owner character, etc. Sathish & Tarpe [3] explained the trend of MSMEs in Goa from 2007-08 to 2013-14 in the context of several units, employment, and investment. Ganguly [4] discovered that West Bengal faces a major problem in the MSMEs sector as the number of unregistered MSMEs is much higher than the registered units. Das (2014) mentioned the significant contribution of MSME in developed as well as developing countries. He found that MSME sector contributes greatly to various socioeconomic objectives such as higher growth of employment, output, promotion of exports, and fostering entrepreneurship. Sharma et al., [5] emphasized that MSME increases women empowerment through the development of Micro Enterpriseships and Self-help groups (SHGs). Anupama [6] analysed the level of gender differentiation in the MEME sector and showed how the various factors increases the probability of getting a job in the unorganized manufacturing sector especially for female workers. Agyapong [7] considered two different views of MSMEs; these are the pro-MSMEs and the anti-MSMEs. Kanitekar [8] conducted an experimental study for which he selected 86 villages based on entrepreneurs from different parts of India. He examined why entrepreneurs are motivated to shift their occupation from an agriculture-based to a non-farm activity. Lahiri [9] mentioned some of the opportunities enjoyed by the MSME. On the other hand, he also highlighted some of the major obstacles facing the MSME sector during the period of globalization. Das and Das [10] analyzed the productivity and profitability of micro-manufacturing enterprises in West Bengal using NSSO unit-level data.

The brief review of existing literature revels that the pattern of growth of MMEs in West Bengal during the recent years is not adequately analysed. The study is also deficient to explore the special characteristics of MMEs in West Bengal and factors that responsible for the growth of MMEs in West Bengal. In this brief background present study sets the following objectives:

1. To analyze the characteristics of MMEs in terms of ownership, nature of operation, per enterprise employment and per enterprise GVA in West Bengal.

2. To examine the factors that explains the status of growth of MMEs in West Bengal.

Rest of the work is divided into three sections. Section 2 shows database and methodology. In section 3, we have shown the per enterprise growth of employment and GVA in MMEs in West Bengal vis-à-vis other major states of India during 2010-11 to 2015-16 and relative share of MMEs in West Bengal to total MMEs in India. Also this section shows the status of growth of MMEs and analyses it by the means of multinomial logit model. Section 4 concludes.

**DATABASE AND METHODOLOGY**

Present study is based on the unit level data of NSSO 67th Round (2010-11) and 73rd Round (2015-16) on Unincorporated Non-Agricultural Enterprises (Excluding Construction) in India. NSSO have classified the status of an enterprise under four categories which are expanding, stagnating and contracting based on last three years performance of a particular enterprise. If output and income of enterprises is increasing over the last three years then they are categorized as expanding enterprises. If output or income of the enterprises is remaining constant over the last three years then they are categorized as stagnant enterprises and output or income of enterprises is decreasing over the last three years then they are categorized as contracting enterprises. To analyze the status of enterprises by an econometric model, we have taken into account expanding, stagnant, and contracting enterprises. Therefore, status of growth (STGR) of MMEs is multinomial in nature. We have assigned 0 for expanding, 1 for stagnating, and 2 for contracting enterprises. We have excluded those firms which did not specify their status of growth.

**Multinomial Logit Model**

The multinomial logit (MNL) model is used to analyse the status of growth of MMEs in West Bengal because the status of growth is multinomial in nature. The MNL model specifies that

\[ P_{ij} = \frac{\exp(x_i \beta_j)}{\sum_{l=1}^{m} \exp(x_i \beta_j)} \]

Where \( X \) are case-specific regressors, which includes an intercept and other characteristics. Clearly, this model ensures that 0 < \( P_{ij} < 1 \) and \( \sum_{j=1}^{m} P_{ij} = 1 \). To ensure model identification \( \beta_j \) is set to zero for one of the categories, and coefficients are then interpreted with respect to that category called the base category.

Coefficient in a multinomial model can be interpreted in the same way as the parameters of binary logit model are interpreted, i.e., comparison being to the base category. This is a result of the multinomial logit.
model being equivalent to a series of pair wise logit models. For simplicity, we set the base category to be

\[ Pr(y_i = j | y_i = j \text{ or } 1) = \frac{Pr(y_i = j)}{Pr(y_i = j) + Pr(y_i = 1)} = \frac{\exp(x_i^\beta_j)}{1 + \exp(x_i^\beta_j)} \]

Using \( \beta_j = 0 \) and cancellation of \( \sum_{i=1}^{m} \exp(x_i^\beta_j) \) in the numerator and denominator.

Thus, \( \beta_j \) can be viewed as parameters of binary logit model between alternative j and alternative 1. So, a positive coefficient from m-logit means that as the regressor increases, we are more likely to choose alternative j than alternative 1. This interpretation will vary with the base category and is clearly most useful when there is a natural base category.

RESULTS AND DISCUSSIONS

Growth of MMEs in West Bengal vis-a-vis Others States of India

MMEs have been studied as the growth engine of the economy. Economy going towards significant growth through MMEs. Table 1 shows per enterprises growth of employment and per enterprises growth of GVA. It is observed that per enterprises employment gradually declined during 2010-11 to 2015-16 but in Delhi and Madhya Pradesh it has increased. Annual growth rate of per enterprise employment was positive only for Delhi, Madhya Pradesh, and Chhattisgarh.

Thus, most of the major states have negative annual growth rate of per enterprise employment. In West Bengal per enterprise employment was 1.8 in 2010-11 which decreased to 1.7 in 2015-16. Annual growth rate of per enterprise employment was -1.1 per cent in West Bengal. Now looking at the GVA, we find that per enterprise GVA increased in most of states during 2010-11 to 2015-16. In terms of annual growth rate of per enterprise GVA, the top five states were Delhi (12.6 per cent), Madhya Pradesh (12.4 per cent), Bihar (10.2 per cent), Uttar Pradesh (10 per cent), and Uttaranchal (9.6 per cent). All the major states have positive growth rates of GVA. In West Bengal, per enterprise GVA increased from Rs. 52,572 in 2010-11 to Rs. 60,240 in 2015-16. Annual growth rates of per enterprise GVA was 2.9 per cent. All the major states have also maintained positive growth rates in per enterprise GVA. The number of OAEs was significantly higher than ESTTs in both 2010-11 and 2015-16 (Table 2). The number of employment and GVA of MMEs across states in India have not significantly increased during 2010-11 to 2015-16 (Table 3).

### Table 1: Per Enterprises Employment, GVA and their Growth in West Bengal vis-a-vis other Major States of India, 2010-11 to 2015-16

| States            | Per enterprises employment 2010-11 | Annual growth rates (%) | Per enterprises GVA (Constant Prices) 2010-11 | Annual growth rates (%) |
|-------------------|-----------------------------------|-------------------------|---------------------------------------------|-------------------------|
| Delhi             | 3.6                               | 3.8                     | 1.1                                         | 361709                  | 12.6                     |
| Madhya Pradesh    | 1.7                               | 1.8                     | 0.1                                         | 45112                   | 12.4                     |
| Bihar             | 1.7                               | 1.6                     | -1.2                                        | 72797                   | 10.2                     |
| Uttar Pradesh     | 2.2                               | 2.1                     | -0.9                                        | 68370                   | 10.0                     |
| Uttaranchal       | 1.8                               | 1.6                     | -2.2                                        | 95939                   | 9.6                      |
| Karnataka         | 1.8                               | 1.7                     | -1.1                                        | 92610                   | 8.6                      |
| Punjab            | 2                                 | 1.8                     | -2                                          | 121116                  | 7.7                      |
| Haryana           | 2.4                               | 2.1                     | -2.5                                        | 180062                  | 6                         |
| Jammu & Kashmir   | 1.5                               | 1.4                     | -1.3                                        | 92124                   | 5.4                      |
| Chhattisgarh      | 2.1                               | 2.2                     | 0.1                                         | 73133                   | 5.3                      |
| Orissa            | 2.1                               | 1.7                     | -3.8                                        | 46396                   | 5.2                      |
| Rajasthan         | 1.9                               | 1.8                     | -1.1                                        | 114483                  | 5                         |
| Gujarat           | 2.3                               | 1.9                     | -3.5                                        | 137679                  | 4.4                      |
| Maharashtra       | 2                                 | 2                       | -2.6                                        | 155745                  | 4.4                      |
| Kerala            | 1.9                               | 1.8                     | -1.1                                        | 135938                  | 4.3                      |
| Tamil Nadu        | 2.1                               | 1.9                     | -1.9                                        | 122511                  | 3.8                      |
| Himachal Pradesh  | 1.7                               | 1.5                     | -2.4                                        | 89828                   | 3.6                      |
| Assam             | 1.9                               | 1.7                     | -2.1                                        | 106613                  | 3.4                      |
| Jharkhand         | 1.8                               | 1.5                     | -3.3                                        | 50127                   | 3.1                      |
| West Bengal       | 1.8                               | 1.7                     | -1.1                                        | 52572                   | 2.9                      |
| Andhra Pradesh    | 1.9                               | 1.6                     | -3.2                                        | 78770                   | 0.3                      |
| India             | 2                                 | 1.8                     | -2                                          | 94728                   | 4.1                      |

Source: Authors' own calculation based on NSSO Unit Level data of 67th Round and 73rd Round.

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Table-2: Mean Test of Number of Enterprises between OAEs and ESTTs across States/UTs, 2010-11 and 2015-16

| Year    | Nature of MMEs | Mean      | SD         | Observations | F test | t-test |
|---------|----------------|-----------|------------|--------------|--------|--------|
|         |                |           |            |              |        |        |
| 2010-11 | OAE            | 412285    | 610594     | 35           | 31.73*** | 3.17*** |
|         | ESTT           | 79193     | 108395     | 35           |         |        |
| 2015-16 | OAE            | 480323    | 786454     | 35           | 54.25*** | 2.98*** |
|         | ESTT           | 79656     | 106768     | 35           |         |        |

Nature of MMEs Year

| OAE    | Year  | Mean      | SD         | Observations | F test | t-test |
|--------|-------|-----------|------------|--------------|--------|--------|
| 2010-11|       | 412285    | 610594     | 35           | 0.60*  | 0.4    |
| 2015-16|       | 480323    | 786454     | 35           | 1.03   | 0.018  |
| ESTT   | Year  | Mean      | SD         | Observations | F test | t-test |
| 2010-11|       | 79193     | 108395     | 35           | 0.64*  | 0.35   |
| 2015-16|       | 79656     | 106768     | 35           |         |        |

ALL Year

| OAE    | Year  | Mean      | SD         | Observations | F test | t-test |
|--------|-------|-----------|------------|--------------|--------|--------|
| 2010-11|       | 491479    | 710485     | 35           | 0.64*  | 0.35   |
| 2015-16|       | 559980    | 883830     | 35           |         |        |

Source: Authors’ own calculation based on NSSO Unit Level data of 67th Round and 73rd Round.

Table-3: Mean Test of Number of Employment and GVA of MMEs across States/UTs, 2010-11 and 2015-16

| Employment | Mean  | SD         | Observations | F test | t-test |
|------------|-------|------------|--------------|--------|--------|
|            |       |            |              |        |        |
| 2010-11    | 993409| 1448494    | 35           | 0.87   | 0.029  |
| 2015-16    | 1003834| 1546620    | 35           |         |        |
| GVA (Rs. Crore) |       |            |              |        |        |
| 2010-11    | 465.6 | 647.5      | 35           | 0.59*  | 0.96   |
| 2015-16    | 639.5 | 840.8      | 35           |         |        |

Source: Authors’ own calculation based on NSSO Unit Level data of 67th Round and 73rd Round.

Figure-1 shows the percentage share of MMEs in West Bengal to the total MMEs in India, 2010-11 and 2015-16. The relative share of the number of MMEs in West Bengal was increased by 5.23 percentage points during 2010-11 to 2015-16. It was 16.07 per cent in 2010-11 which increased to 21.3 per cent in 2015-16. Even the relative share of employment generation was increased by 5.36 percentage points during 2010-11 to 2015-16. In 2015-16, it was 19.75 per cent which increased from 14.39 per cent in 2010-11. Relative share of GVA increased from 8.92 per cent in 2010-11 to 11.24 per cent in 2015-16.
Andhra Pradesh, Kerala, Tamil Nadu, West Bengal, Madhya Pradesh, male workers increased from 2365 in 2010 and Rajasthan.

Annual growth rate of male workers were positive in West Bengal, Chhattisgarh, Jharkhand, Karnataka, and Rajasthan. In West Bengal, number of female workers increased from 2365 in 2010-11 to 3542 in 2015-16 and the number of male workers increased from 2637 in 2010-11 to 3394 in 2015-16. Hence, increase in the number of female workers was higher than the increase in male workers. In West Bengal, the growth rate of female workers was 9.9 per cent whereas for male workers it was 5.7 per cent. Thus, the numbers of female workers have gradually increased in MMEs during 2010-11 to 2015-16.

Table-5 shows the social ownership of MMEs in West Bengal. In both 2010-11 and 2015-16 most of the MMEs were operated by general caste communities. However, the percentage share of general caste entrepreneurs in 2015-16 was less than in 2010-11. In 2010-11, 65.02 per cent OAE enterprises and 72.84 per cent ESTT enterprises were operated by general caste people whereas in 2015-16, 49.34 per cent OAE and 60.17 per cent ESTT enterprises were operated by general caste people. Further, it can be observed that the contribution of the people belonging to the schedule tribes (ST) was normally low as compared to people of other communities. Only 1.95 per cent enterprises were operated by people of ST communities in 2010-11 and 2015-16. In 2010-11, 22.54 per cent OAE and 13.93 percent ESTT enterprises were operated by the people of SC community and in 2015-16, 20.54 per cent OAE and 15.63 per cent ESTT enterprises occupied by SC communities. Hence, during 2010-11 and 2015-16 the percentage share of SC entrepreneurs were remained unchanged. Now, if we look at the OBC community, we can say that their share has increased significantly

| States                  | 2010-11 | 2015-16 | Annual growth rate | 2010-11 | 2015-16 | Annual growth rate |
|-------------------------|---------|---------|--------------------|---------|---------|--------------------|
| Andhra Pradesh          | 1369    | 1905    | 7.8                | 1727    | 1516    | -2.4               |
| Assam                   | 91      | 60      | -6.9               | 330     | 291     | -2.4               |
| Bihar                   | 86      | 205     | 27.6               | 665     | 1011    | 10.4               |
| Chhattisgarh            | 117     | 133     | 2.8                | 235     | 284     | 4.2                |
| Delhi                   | 39      | 45      | 3                  | 703     | 628     | -2.1               |
| Gujarat                 | 1230    | 821     | -6.7               | 1964    | 1425    | -5.5               |
| Haryana                 | 77      | 70      | -1.9               | 385     | 312     | -3.8               |
| Himachal Pradesh        | 31      | 33      | 1.3                | 123     | 104     | -3                 |
| Jammu & Kashmir         | 86      | 85      | -0.1               | 252     | 250     | -0.03              |
| Jharkhand               | 214     | 357     | 13.4               | 389     | 396     | 0.4                |
| Karnataka               | 669     | 985     | 9.4                | 838     | 1161    | 7.7                |
| Kerala                  | 453     | 480     | 1.2                | 520     | 512     | -0.3               |
| Madhya Pradesh          | 570     | 502     | -2.4               | 962     | 939     | -0.5               |
| Maharashtra             | 890     | 711     | -4                 | 2323    | 1747    | -5                 |
| Orissa                  | 448     | 374     | -3.3               | 814     | 470     | -8.4               |
| Punjab                  | 163     | 161     | -0.3               | 610     | 522     | -2.9               |
| Rajasthan               | 285     | 388     | 7.3                | 922     | 939     | 0.4                |
| Tamil Nadu              | 1517    | 1569    | 0.7                | 1965    | 1757    | -2.1               |
| Uttar Pradesh           | 1676    | 1287    | -4.6               | 3542    | 3279    | -1.5               |
| Uttarakhand             | 19      | 16      | -2.5               | 155     | 100     | -7                 |
| West Bengal             | 2365    | 3542    | 9.9                | 2637    | 3394    | 5.7                |
| India                   | 12513   | 13881   | 2.2                | 22257   | 21244   | -0.9               |

Source: As in Table 1

Table-4: Number (‘000) and Annual Growth Rates of Employment by Gender in West Bengal vis-à-vis Other Major States, 2010-11 to 2015-16
during 2010-11 to 2015-16. As in 2010-11, the percentage share of OBC entrepreneur was only 9.11 per cent which increased to 24.79 percent in 2015-16.

Table-5: MMEs of West Bengal by type of social Ownership, 2010-11 and 2015-16

| Social group of ownership | 2010-11 | 2015-16 |
|---------------------------|---------|---------|
|                           | OAE     | ESTT    | ALL     | OAE     | ESTT    | ALL     |
| ST                        | 2.15    | 0.52    | 1.95    | 2.09    | 0.48    | 1.93    |
| SC                        | 22.54   | 13.93   | 21.5    | 20.95   | 15.63   | 20.48   |
| OBC                       | 8.8     | 11.36   | 9.11    | 25.13   | 21.22   | 24.79   |
| General                   | 65.02   | 72.84   | 65.95   | 49.34   | 60.17   | 50.3    |
| Not Known                 | 1.5     | 1.34    | 1.48    | 2.48    | 2.5     | 2.48    |
| All                       | 2432482 (100) | 331300 (100) | 2763782 (100) | 3805167 (100) | 370300 (100) | 4175468 (100) |

Source: As in Table 1

According to NSSO report, on the basis of the nature of operation, enterprises can be divided into 3 types: perennial, seasonal and casual. Enterprises that are run more or less regularly throughout the year are called perennial enterprises. Seasonal enterprises are those, which are usually run in a particular season or fixed months of a year and those enterprises which run occasionally for a total of at least 30 days in the last 365 days are called casual enterprises. Table-6 explains the percentage share of MMEs in West Bengal on the basis of the nature of operation. In West Bengal, 98.09 per cent in 2010-11 and 96.75 per cent enterprises operated throughout the year. Comparatively, percentage share of seasonal and casual enterprises was very low in 2010-11 and 2015-16.

Table-6: Distribution of MMEs of West Bengal by Nature of Operation, 2010-11 and 2015-16

| Nature of Operation | 2010-11 | 2015-16 |
|---------------------|---------|---------|
|                     | OAE     | ESTT    | ALL     | OAE     | ESTT    | ALL     |
| Perennial           | 97.93   | 99.29   | 98.09   | 96.58   | 98.44   | 96.75   |
| Seasonal            | 1.8     | 0.67    | 1.66    | 2.29    | 1.42    | 2.21    |
| Casual              | 0.27    | 0.04    | 0.24    | 1.13    | 0.14    | 1.04    |
| All                 | 100 (2432481.6) | 100 (331300.2) | 100 (2763782) | 100 (3805167) | 100 (370300.9) | 100 (4175468) |

Source: As in Table 1

Table-7 depicted the distribution of MMEs by their status of growth. In 2010-11, 34.65 per cent expanding enterprises, 46.06 per cent stagnating enterprises and 11.37 per cent contracting enterprises were operated in West Bengal. Besides, in 2015-16 only 18.06 per cent was expanding enterprises, the stagnating enterprises also decreased to 45.96 per cent stagnant. Whereas, the percentage share of contracting enterprises increased to 23.59 in 2015-16 in West Bengal. Thus, in West Bengal the percentage share of stagnant enterprises was higher than the expanding or contracting enterprises. Table-8 shows that the decrease in the expanding enterprises whereas increase in the contracting enterprises was not statistically significant during 2010-11 to 2015-16.

Table-7: Percentage Share of MMEs by Type of Growth Status in West Bengal, 2010-11 and 2015-16

| Status of Growth | 2010-11 | 2015-16 |
|------------------|---------|---------|
|                  | OAE     | ESTT    | ALL     | OAE     | ESTT    | ALL     |
| Expanding        | 34.22   | 37.75   | 34.65   | 17.08   | 28.21   | 18.06   |
| Stagnating       | 46.57   | 42.28   | 46.06   | 47.05   | 34.75   | 45.96   |
| Contracting      | 11.44   | 10.81   | 11.37   | 23.86   | 20.88   | 23.59   |
| Others           | 7.76    | 57.01   | 7.93    | 12.02   | 16.16   | 12.39   |
| All              | 100 (2432481) | 100 (331300) | 100 (2763782) | 100 (3805167) | 100 (370300) | 100 (4175468) |

Source: As in Table 1
Table-8: Mean Test of Number of Enterprises between OAEs and ESTTs across States/UTs, 2010-11 and 2015-16

| Year      | Nature of MMEs | Mean | SD  | Observations | t-value |
|-----------|----------------|------|-----|--------------|---------|
| Expanding | 2010-11        | 31.13| 13.56| 35           | 0.53    |
|           | 2015-16        | 29.45| 12.8 | 35           |         |
| Stagnating| 2010-11        | 44.48| 11.73| 35           | 0.33    |
|           | 2015-16        | 45.48| 12.92| 35           |         |
| Contracting| 2010-11        | 8.40 | 5.57 | 35           | 1.04    |
|           | 2015-16        | 9.91 | 6.51 | 35           |         |

Source: Authors’ own calculation based on NSSO Unit Level data of 67th Round and 73rd Round

Analysis of Status of Growth of MMEs

Table-9 presents the notations, specifications and summary statistics of the variables used in the regression model.

Nature of enterprise is a dummy variable taking the value 1 for ESTT and 2 for OAEs. Location of enterprises (LOCN) is another dummy variable taking the value 1 if the enterprises are located in urban areas and 2 if located in rural areas. Other dummies like nature of operation (NOPN) taking the value 1 if it is perennial and 2 otherwise and government assistance (GOVA) taking the value 1 if it received assistance in the form of subsidy from the government and 2 otherwise. Labour productivity (LPRD) of MME is measured by gross value added per worker.

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

| Notation | Specification                                      | Average | SD |
|----------|----------------------------------------------------|---------|----|
| STGR     | Status of growth is categorized as 0 if expanding, 1 if stagnating, 2 if contracting | 1.74    | 0.007 |
|          |                                                   | (1.95) | (0.009) |
| EST      | Nature of enterprises: Whether the enterprise is establishment or not (Yes= 1, No = 0) | 1.53    | 0.005 |
|          |                                                   | (1.48) | (0.006) |
| LOCATION | Location of enterprises: Whether the enterprise is urban located or not (Yes= 1, No = 0) | 1.60    | 0.005 |
|          |                                                   | (1.55) | (0.006) |
| NATOP    | Nature of operation: Whether the enterprise is perennial or not (Yes= 1, No = 0) | 1.01    | 0.001 |
|          |                                                   | (1.03) | (0.002) |
| GOVASST  | Government assistance: Whether the enterprise receives government assistance or not (Yes= 1, No = 0) | 1.01    | 0.002 |
|          |                                                   | (1.99) | (0.001) |
| LPRD     | Labour productivity (in Rs. ‘000) of MMEs is measured by gross value added per worker. | 3.49    | 41.81 |
|          |                                                   | (5.77) | (69.71) |

Note: Values in parentheses denote 2015-16

Source: Authors’ own calculation based on NSSO Unit Level data of 67th Round and 73rd Round

Table-10: Multinomial Logistic Regression for the Status of Growth of MMEs in West Bengal

| Specification  | Coefficient | z-Statistic | P values | Coefficient | z-Statistic | P values |
|----------------|-------------|-------------|----------|-------------|-------------|----------|
| STGR Expanding (= 0) (base outcome) | -0.718 | -1.04 | 0.299 | -0.250 | -0.48 | 0.628 |
| STGR Stagnating (= 1) | -0.085 | -3.12 | 0.186 | -0.153 | -3.03 | 0.002 |
| STGR Contracting(= 2) | 0.479 | 2.54 | 0.011 | 0.482 | 9.52 | 0.000 |
| STGR GOVA | 0.153 | 0.47 | 0.639 | -0.257 | -1.30 | 0.193 |
| STGR ESTT | 0.554 | 8.24 | 0.000 | 0.175 | 0.75 | 0.454 |
| STGR LPRD | -0.052 | -7.45 | 0.000 | -0.001 | -4.39 | 0.000 |

Regression Results for the Year 2010-11

| Specification  | Coefficient | z-Statistic | P values | Coefficient | z-Statistic | P values |
|----------------|-------------|-------------|----------|-------------|-------------|----------|
| STGR Expanding (= 0) (base outcome) | 2.265 | -0.15 | 0.031 | -2.049 | -2.48 | 0.013 |
| STGR Stagnating (= 1) | 0.205 | -2.78 | 0.005 | -0.425 | -5.85 | 0.000 |
| STGR Contracting(= 2) | 0.644 | 3.16 | 0.002 | 0.421 | 5.58 | 0.000 |
| STGR GOVA | 0.990 | 1.95 | 0.052 | 0.560 | 2.41 | 0.016 |
| STGR ESTT | 0.192 | 2.43 | 0.015 | 0.323 | 0.83 | 0.407 |
| STGR LPRD | -0.001 | -9.60 | 0.000 | -0.001 | -4.11 | 0.000 |

Source: As in Table 1
The results of two multinomial logit regressions, one for the year 2015-16 and other for the year 2010-11, are given in Table-10. From the regression results we can say that, rural located enterprises are more likely to be expanding than stagnating and contracting in 2010-11 whereas they are more likely to be expanding than contracting in 2015-16. Secondly, ESTTs type MMEs are more likely to be expanding than stagnating and contracting in 2015-16. Thirdly, perennial enterprises are more likely to be expanding than stagnating and contracting in 2010-11 as well as in 2015-16. Finally, enterprises with the higher labour productivity are more likely to be expanding than stagnating and contracting.

CONCLUSIONS

From the above discussion we concluded that, MMEs affected favourably on job creation and GVA in West Bengal. But per enterprise employment gradually declined and per enterprise GVA increased during 2010-11 to 2015-16. Annual growth rate of per enterprise employment was positive in three states namely, Delhi, Madhya Pradesh and Chhattisgarh during 2010-11 to 2015-16. The relative share of the number of MMEs of West Bengal increased from 16.07 per cent in 2010-11 to 21.3 per cent in 2015-16. The number of OAEs type MMEs was significantly higher than ESTTs type MMEs in 2010-11 as well as in 2015-16. Relative share of employment generation in MMEs of West Bengal also increased from 14.39 per cent in 2010-11 to 19.75 per cent in 2015-16. Similarly, relative share of GVA in MMEs of West Bengal increased from 8.92 per cent in 2010-11 to 11.24 per cent in 2015-16. Annual growth rate of per enterprise GVA of MMEs was more than 10 per cent in Delhi, Madhya Pradesh, Bihar and Uttar Pradesh during 2010-11 to 2015-16. In West Bengal, the MMEs owned by general caste people were around 65 per cent in 2010-11 with reduction by 15 percentage points in 2015-16 whereas OBC caste enterprises increased by 13 percentage points during this period. In West Bengal, more than 95 per cent of MMEs were perennial in nature that is these MMEs run throughout the year. The percentage share of expanding MMEs had reduced whereas the percentage share of contracting MMEs had increased in West Bengal during this time period.

Annual growth rate of both female and male workers in MMEs were positive in Bihar, Chhattisgarh, Jharkhand, Karnataka, Rajasthan and West Bengal during this period. The rural located, establishment and perennial MMEs are more likely to be expanding. MMEs with higher labour productivity are also expanding in nature.

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