State of Micro-Enterprises in Rural Bangladesh: A Case in Comilla *Sadar Upazila*

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1. Introduction

Since the Bangladesh agriculture and urban economy, especially the large-scale manufacturing and service sectors, cannot absorb the growing rural based labor force, the rural non-farm economy is coming into the forefront of the rural economy research. Ahmed (2001), based on an outdated database of the late eighties, argued that development of modern and dynamic micro-enterprises (MEs) is remarkably imperative for Bangladesh to augment income and employment for the rural poor. Though rural non-farm economy of Bangladesh has been emphasized in policy-level discussions, MEs as a sub sector have been left unattended. Whatever promotional policies by the government have been adopted, they have gone primarily to either very large industry or to the small-scale cottage industry sectors. To be consequent, studies on MEs in the Bangladesh context are extremely limited. Nevertheless, along with the remarkable development of micro-finance movements in Bangladesh transforming income-generating activities into such MEs has become one of the challenges for policy makers and development practitioners (Ahmed, 2004).

In this context, the development of MEs is strategically a clue to diversifying non-farming activities in rural Bangladesh. Therefore, the present study aims at clarifying the present state and issues of MEs in rural Bangladesh from the economic and managerial viewpoints.

2. Methodology

MEs are sharply contrasted with small-scale cottage industries, which are carried out at home by family members using their own equipments. Though several definitions of MEs are available[1], the present study has adopted European Union definition: ME as an economic entity having less than 10 laborers (SCADPlus, 2006). Purposively taking a diversification of MEs into account, based on the available secondary statistics[2], Comilla *Sadar Uapazila* under Comilla district was selected as a case study area. As a matter of fact, however, the survey on 158 MEs randomly selected from six unions of Comilla *Sadar Upazila* and a focus group discussion with key informants in the study area were conducted during March-April 2005. For the 158 MEs surveyed, the structured questionnaire was used.

Hereinafter, the paper is organized as follows: (1) structural characteristics of the sample MEs, (2) managerial and economic characteristics of the sample MEs, and (3) operational constraints of the sample MEs.

3. Results and discussion

(1) Structural characteristics

1) Types, age, size and location etc.

According to the UK standard industrial classification of economic activities, about 7% of the MEs belonged to the primary industry, 60% to the secondary industry and the rest 53% to the tertiary industry (Table1). The first type comprised of commercial poultry and fishery farm. The second type comprised of rural manufacturing, like food processing, wooden and steel furniture manufacturing, farm input and equipment manufacturing, engineering works[3], van/rickshaw body making, handicrafts, pottery etc. The third type comprised of service, like trade of egg, poultry feed, fish or farm input/equipment, van/rickshaw assembling and repairing, radio-watch repairing, tailoring, grocery, hotel and restaurant business, and information communication.

The establishment of MEs was likely to concentrate in the last five years (Table 2). About 42% of the MEs were established within the last five years, while the

Table 1. Sample micro-enterprises (MEs) in Comilla Sadar Upazila

Types	Economic activities	Number	%
I. Primary	Poultry and fisheries farm	11	7.00
II. Secondary	Food processing (rice/flour mill, *chanacur*, ice-cream)	17	10.8
	Furniture making (wooden, steel)	21	13.3
	Farm input and equipment manufacturing	6	3.8
	Engineering works (*dalai*, *lede*, sanitary ware)	10	6.3
	Handicrafts, pottery etc.	2	1.3
	Van/rickshaw body making	7	4.4
III. Tertiary	Egg, poultry feed and fish trade	5	3.2
	Van/rickshaw and radio-watch assembling/repairing	3	1.9
	Tailoring	13	8.2
	Grocery, pharmacy	18	11.4
	Hotel and restaurant	10	6.3
	Personal services (black/goldsmith, butcher, etc.)	18	11.4
	Farm input and equipment sales and mechanics	5	3.2
	Information and communication etc.	12	7.6
	Total	158 (100.0)	100

Source: Author's field survey (2005).

Table 2. Distribution of MEs by establishment, number of workers, location and ownership type (Sample=158 MEs)

Characteristics	Number	%
Establishment		
Below 6 years	67	42.4
6–10 years	44	27.8
11–15 years	11	7.0
16 years and above	36	22.8
Number of workers		
1 (Proprietor only)	60	38.0
2–3 persons	61	38.6
4–9 persons	37	23.4
Location		
Own homestead	24	15.3
Permanent shop in the bazaar	108	68.4
Roadside/public place	23	4.6
Ownership		
Sole proprietorship	127	80.4
Family enterprises	26	16.5
Partnership	5	3.2

Source: Author's field survey (2005).

rest 52% were established more than five years ago. Among the 67 MEs established within the last five years, the majority belonged to wooden and steel furniture manufacturing, tailoring, grocery, information communication and entertainment related service enterprises.

The average size of an ME was 2.47 workers including the proprietors and family workers (SD: 1.79), showing the range of 1 (min.) to 9 (max.) persons. Sixty MEs (38%) had only the proprietor, while 37 MEs (23.4%) had more than three workers. The comparatively large size MEs belonged to the secondary industry type, especially in food processing and furniture manufacturing. Being predominantly village based, 68% of the enterprises were located in rural markets or growth centers[4]; only 15% of the MEs in the own homestead area, but 17% of the MEs in the roadside or public places (Table 2).

2) Entrepreneurs and employments

About 97% of the MEs were individually owned (inclusive of family enterprises). But the labor force source of the MEs was dominated by hired workers (44%) (Table 2). As a society norm, the micro-entrepreneurs were predominantly male while female entrepreneurs constituted of only 2 out of MEs. Similarly, the female workers constituted of only 6.4%. About 90.5% entrepreneurs' households belonged to small and medium landholding classes. Majority of the entrepreneurs (73%) were relatively young like they were in the age group of 20–45 when they entered their businesses. About 95% of the entrepreneurs had educational background varying between primary to post-graduate levels. Furthermore, 32% of entrepreneurs received formal training at the institutions, or informal training through apprenticeship in their present enterprises and from other enterprises before entering their

enterprises. The trained entrepreneurs were found in engineering workshops, van/rickshaw assembling, radio-TV repairing, tailoring, and information communication. The percentage of full-time employment was relativity high (72%) in the MEs. Family workers occupied part-time employment.

3) Capital: establishment and operation

According to the survey, the average fixed capital required to set up an ME was BDT 0.61 million (SD: BDT 0.48 million)[5] showing a wide range of BDT 0.05 million at minimum for van rickshaw assembling, radio/TV repairing, tailoring, tea-stall etc. and BDT 2.35 million at maximum for information communication, food processing, furniture manufacturing and engineering works, farm input and equipment manufacturing, etc. The average working capital requirement per ME was BDT 0.40 million (SD: BDT 0.29 million). The observed inter-industry variation in the fixed and working capital requirements were generally explained by differences in the types of building structure (*pucca*[6] vs temporary sheds) used, scale of operation, product mix and degree of mechanization, etc.

The ME owners found it quite difficult to raise, especially because of the institutional credit market. To meet the capital requirement at the initial stage, savings of the entrepreneurs and support from the family played a crucial role. For example, 82% of the entrepreneurs fully depended on family support and individual initiative for meeting the capital requirements; only 18% of the entrepreneurs could receive some financial support from the micro finance institutions, commercial banks, village cooperatives etc.

4) Marketing of materials and inputs

Based on procuring inputs or raw materials and selling outputs, herein, the backward and forward linkages are to be interesting as part of the structural feature. Most of the products and services produced by the MEs constituted light consumer goods and services primarily for rural households. Some MEs related with poultry and fishery, food processing, furniture, tailoring, etc., met the local and urban demand. The MEs producing handicrafts, potteries etc., exported basically for urban and foreign market to some extent. The MEs such as van/rickshaw, radio-TV, grocery, pharmacy, hotel and restaurant, black/goldsmith, butcher, farm inputs basically met the local demand. It was notable that MEs such as information communication services increased recently in the study area due to wide application of mobile phones in the rural areas. As a whole, 90.5% of the MEs sold their products to the consumers directly in the locality to meet the local demand.

Meanwhile, around 32% of MEs depended on collecting materials (inputs or raw materials) produced by other sectors from distant markets like district towns, the capital city, or the port city. Only 9.5% of the MEs produced their products for the wholesale market, showing a forward linkage.

(2) Intensity, productivity and efficiency

Then, from the viewpoint of efficiency of resource use, intensity, productivity and profitability can be examined to shed light on several issues for management and development.

1) Factor intensity

As intensity index, labor intensity (=capital-labor ratio) and capital intensity (=capital-output ratio) can be useful. For a practical estimate, herein the capital were limited to fixed capital excluding the value of land, the output was defined as annual gross value added (as a total of wage, rent, interest paid and net profit accrued), and the labor was defined as a total number of laborers including entrepreneur, family labor, and hired worker. The average labor intensity and capital intensity for the MEs were BDT 0.28 million and BDT 2.06 respectively (Table 4–5). Compared to the results of similar studies, for example, average labor intensity and capital intensity were BDT 0.19 million and less than BDT 2.00 respectively (Ahmed, 2001), the factor intensity of the MEs was likely to be modest.

2) Factor productivity and efficiency

The partial productivities measured herein were respectively labor productivity (annual value added per worker) and capital productivity (annual value added per unit of fixed capital, excluding the value of land), while total factor productivity (TFP) for a comprehensive economic efficiency. Consequently, an index of profitability (ratio: net profit to total value addition) was estimated.

The labor productivity showed a wide range of BDT 0.0335 million to 0.57 million with the average figure of BDT 0.17 million. The capital productivity was BDT

1.06 on an average, ranging from BDT 0.09 to 8.83. Both of the averages were indicative of moderate labor and capital productivities.

The TFP can express a value added as a ratio of the weighted sum of labor and capital. Using the shadow (scarcity) prices of labor and capital, symbolically the TFP can be as follows: TFP=VA/(TA*R+L*W) (where VA: value added, TA: total assets, R: shadow price of capital, W: shadow price of labor wage, and L: total number of workers in the ME). The accounting rate of interest, which measured the shadow price of capital, was estimated to be 14.2% by the Trade and Industrial Policy Reform project, Bangladesh (Rab, 1988). Similarly, for estimating W in accounting terms (or for estimating the marginal product of labor) a conversion factor of 0.82 was applied to the average wage rates received by the adult workers in Bangladesh in 1987–88 (Bhuya, 1988). The average TFP for the MEs was 2.12, showing the efficient utilization of resources[7], while the profitability of the MEs was 0.42, on an average. Primary and secondary types of MEs accrued better profit with low level of resource use efficiency compared to the tertiary type of MEs (Table 3).

To explain the relative importance of factor intensity, productivity and profitability for the sample MEs were shown according to labor intensity classes (Table 4) and capital intensity classes (Table 5). For the classification of the MEs based on respective intensity, the range of intensity (labor: BDT 1,929–162,000, capital: BDT 0.12–10.92) was first equally divided into three classes (higher, medium and lower) and then the averages were made. Coefficient of correlation was measured to show the relationship between factor intensity with partial productivity, TFP and profit rate for all the MEs. In terms of labor intensity, only four enterprises (three belonged to secondary and one to tertiary type) accrued higher profit with low level of resource use, while in terms of capital intensity, about 140 MEs (89%) belonged to higher profit with a better level of resource use.

Table 4 and Table 5 showed (i) higher labor productivity associated with medium labor intensity; (ii) higher capital productivity associated with lower capital intensity; (iii) higher TFP associated with lower factor intensity; (iv) higher profitability associated with higher labor intensity but with lower capital intensity. Though profitability was relatively increasing with labor intensity and decreasing with capital intensity, in terms of capacity utilization and efficiency of production organization, the lower factor intensive MEs had better potentials.

There was significant positive correlation (r=0.57) between capital intensity and labor intensity (Figure 1). The majority of MEs belonged to lower factor intensive MEs (86% for lower labor intensive and 89% for lower capital intensive). This made clear the fact that the degree of capitalization or mechanization of rural MEs was still very low, which was an indicative of practicing moderate product mix of labor and capital required in

Table 3. Productivity and profitability of MEs by industry type

Industry type	TFP	Profit rate
Primary	1.70	0.50
Secondary	2.10	0.50
Tertiary	2.40	0.32
Average	2.12	0.42
Stad deviation	1.16	0.24

Source: Author's field survey (2005).

Table 4. Productivity and profitability of MEs by labor intensity classes

Labor intensity class@	Average labor Productivity (unit: BDT)	TFP	Profit rate
Higher labor intensive	26,800	1.22	0.75
Medium labor intensive	30,422	1.83	0.659
Lower labor intensive	14,565	2.18	0.38
Average	16,581 (0.54*)	2.12 (−0.30*)	0.42 (0.50*)

Source: Author's field survey (2005).

Notes 1) @: The range of labor intensity for each class was BDT 106,714–162,000 for the higher class, BDT 53,357–106,714 for the medium class, BDT 1,929–53,357 for the lower class. The average labor intensity was BDT 28,435.

2) Parentheses in column 3 showed correlation between average labor intensity and average TFP and those in column 4 represent correlation between average labor intensity and average profit rate.

3) *: Correlation is significant at the 0.05 level.

the rural MEs for increasing efficiency of the resource use and potentials for economic efficiency and growth.

(3) Operational constraints

The MEs suffered from various types of operational constraints, which impeded their growth and expansion. Lack of institutional credits, limited access to modern technology and almost total non-availability of market information and promotional support and extension services were the major constraints hindering the ME growth. A focus group discussion with key informants revealed that the irregular supply of electricity, shortage of working capital, stiff competition from domestic and foreign products, marketing problems, and bureaucratic hassles involved in obtaining trade licenses and other support services were the most critical among the most severely faced constraints by the MEs. About 45% of the MEs had a membership with some cooperatives or informal group of enterprises, though they did not have membership with any trade associations or their own chambers of commerce and industries to protect their interest against intended and unintended policy discriminations.

4. Conclusion

The overwhelming majority of the MEs were organized as individual or sole proprietorships. The entrepreneurs were relatively young, educated and trained. The majority of the MEs were labor intensive with the modest amount of fixed capital required. The impressive resource use efficiency and profitability of the MEs –these two things recognized the development potentials of MEs in the rural areas for the future. Though profitability was relatively increasing with labor intensity and decreasing with capital intensity, in terms of capacity utilization and efficiency of production organization, the lower factor intensive MEs had better potentials. It was also evident that the degree of capitalization or mechanization of the MEs was still very low.

However, despite having potentials, the MEs suffered from various types of operational constraints that impeded their growth and expansion of MEs. To resolve these operational constraints, the MEs deserve special attention. In this context, the MEs might be officially acknowledged as a separate category of industrial enterprises and declared as a "priority" sub-sector to stimulate their growth. An important first footstep in this direction would be to apply an operational definition to the MEs to award them as separate categories. In the next step, comprehensive policy package and ap-

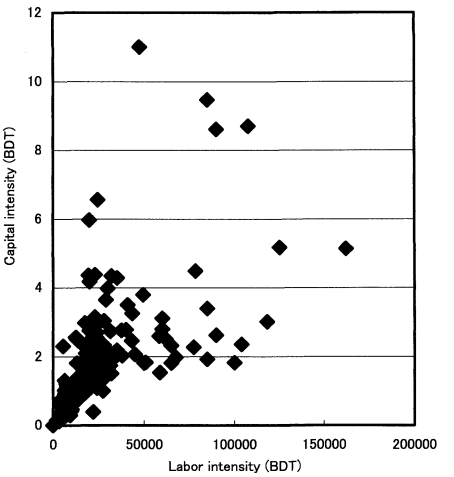

Figure 1. Labor intensity and capital intensity (Scatter diagram)
Source: Authors' field survey (2005).

Table 5. Productivity and profitability of MEs by capital intensity classes

Capital intensity class@	Average capital Productivity (unit: BDT)	TFP	Profit rate
Higher capital intensive	0.11	0.53	0.32
Medium capital intensive	0.25	0.97	0.39
Lower capital intensive	1.16	2.28	0.42
Average	1.06 (−0.38*)	2.12 (−0.50*)	0.42 (−0.004)

Source: Author's field survey (2005).

Notes 1) @: The range of capital intensity for each class was BDT 7.2-10.92 for the higher class, BDT 3.6-7.2 for the medium class, and BDT 0.12-3.6 for the lower class. The average capital intensity was BDT 2.06.

2) Parentheses in column 3 showed correlation between average capital intensity and average TFP and those in column 4 represent correlation between average capital intensity and average profit rate.

3) *: Correlation is significant at the 0.05 level.

propriate institutional network (More specifically, the Bangladesh Small and Cottage Industries Corporation, the prime mover organization concerned with small and cottage industries, might be strengthened) to implement such policies might be useful to reduce operational constraints of MEs in the path of exploiting development potentials of MEs in rural Bangladesh.

Notes

1) Ahmed (2001) defines ME as a commercially-run industrial enterprise cutting across the manufacturing, agro-processing, trade and service activities and employing between 5 to 20 workers, including both family and hired workers. National Private Sector Survey of Enterprises in Bangladesh 2003 conducted by the International Consulting Groups (ICG) and the Micro Industries Development Assistance and Services (MIDAS) defines ME as any income-generating activity that markets at least 75 percent of its products.
2) About 41% of the households belong to non-farming categories in Comilla *sadar upazila*, while national average for rural Bangladesh is 34% as of BBS, 1996.
3) Engineering works are defined as tools, equipment and spare parts, etc. to serve farmers and consumer goods including household items such as furniture, utensils, etc. produced and fabricated using intermediate technologies.
4) Growth center is the place in the rural areas where relatively better infrastructures have been developed.
5) As of 2005, US$ 1.00=Bangladeshi Taka (BDT) 66.57 (Bangladesh currency).
6) *Pacca* means Permanent.
7) In terms of factor efficiency level, Total Factor Productivity (TFP) decision rule says that less than 1 of TFP is 'inefficient', 1.0–2.0 of TFP 'marginal efficient', 2.1–2.5 of TFP 'efficient' and 2.51 and above of TFP 'highly efficient'.

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