

Clusters in Bangladesh: A simple case study

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ABSTRACT: Localized industries can play a great role in the development of a city. But the saga of such industries often remains unsung because of mismanagement, lack of cooperation or lack of sponsorship. These firms often share backward and forward linkages with the subsidiary markets as well as with the labour market directly or indirectly. Firms in cluster enjoy both competitive and marketing advantages. Moreover, the cluster creates an opportunity of specialization. Local government is often unaware of the significant role these industries can play in local development and in national development as well. Considering the disbursed sewing factories or readymade garments of Chittagong as a cluster, this paper tends to overview some characteristics of local sewing factories and seeks to quest for the setbacks of these factories. The paper further tries to outline some recommendations to overcome the shortcomings found and how the contribution of this localized industry can be utilized to improvise the situation of garments industry of the economy like the Silicon Valley of USA.

KEYWORDS: Small sewing industries, clusters, labour employment, backward linkages, division of labour vs. production, number of labours vs. production, Labour hour.

1 INTRODUCTION

One of the basic reasons behind the rapid expansion of garments industry in Bangladesh is 'cheap labour'. There is prohibition of selling the readymade garments in which imported clothes or the clothes produced in the external markets are being used as raw materials. Bangladesh has to export almost the full quantity of these readymade garments. This paper shades light on the fact that by using the huge flow of cheap labours and if the prohibition is cancelled to what extent the fundamental problem of clothing can be mitigated.

In this paper we are considering some small sewing industries. Together these small factories can be considered as 'clusters' (Michael Porter, 1990) or we can consider these as a localized industry. According to Marshall "a localized industry is an industry concentrated in certain localities. The main reason behind may be *"the patronage of a court' that produces a 'demand for a goods of special quality'. The mysteries of a trade become no mysteries, but as it were in the air and children learn many of them unconsciously."* (Marshall, 1920). Subsidiary firms grow up in the neighborhood, supplying it with implements and materials, organizing its traffic and in many ways conducting the economy of its material. Moreover, a localized industry offers 'a constant market for skill so that employers do not have any problem while looking for workers.

Almost all of these characteristics are quite prominent in the research area being considered. The sewing factories maintain a 'spoke and hub' relationship with the subsidiary firms. Inventions and innovations take place naturally and division of labour facilitates the ideas to grow. *"If one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus, it becomes the source of further new ideas"* (Marshall, 1920). These factories are often unorganized and are established for serving commercial purpose only.

Having all these potentials, the question arises whether these factories can be considered as localized clustered industry or not, are there any internal problems and if any how those can be mitigated and how maximum level of potential can be flourished.

2 SELECTION OF AREA OF RESEARCH

Micro or small sewing factories are disbursed all through the country. In Chittagong we have found the prominence in underlying areas:

- Madarbari
- CDA market
- Kajir dewri
- Bakolia
- Johur hawkers market
- Kahalifapotti in Ghatforhadbeg.
- Kajem ali by lane

But among these areas there are numerous sewing shops around khalifapotti, hawkers' market and teribazar. These shops can be specialized as a 'processing zone' as a whole. For this reason, we have taken samples from these areas to precede our research. We believe that this zone will represent the SME's of country as a whole.

3 METHODOLOGY OF THE STUDY

While we were trying to observe the backward and forward linkages within the factories, we were unable to find out any secondary source of data. Moreover, these factories do not maintain any record books. So we have to go to the way of direct observation and find out necessary information based on prepared questionnaires. To verify the authenticity of the information or data we have crosschecked those from some manufacturers who do not belong to our sample. The methodology includes econometric model as well as simple statistical tools like variance and correlation.

4 OBJECTIVE OF THE STUDY

The main objectives of this paper are to:

1. Find out the backward and forward linkage situation in the industry.
2. Analyze the interlinks among labours, raw materials, production, profit and expenditure.
3. Find out the contributory roles of these factories in the development and growth of the local area and of the country as a cluster.

5 HYPOTHESIS TESTING AND DECISION MAKING

5.1 HYPOTHESIS-1: "THERE IS A DIRECT BACKWARD LINKAGE AFFECT IN THE LABOUR MARKET AND AN INDIRECT BACKWARD LINKAGE AFFECT IN THE MARKET OF RELATED INPUTS DUE TO THE SEWING INDUSTRIES"

It is found from the history of the micro sewing industries that once there were not so many factories as there are now; there were only a few factories. The number of shops increased gradually and it is still on the rise. For setting up a production firm, both fixed and variable types of inputs are needed. So, for setting up these tailoring factories one has to buy new machines, as well as employ numerous labours.

Some figures have been furnished below regarding the factories situated in the study area.

Table 1.

Subject	Number
(1) Factory/ Tailoring Shop	450
(2) Shops selling necessary accessories for tailoring	10
(3) Machine repairing shop	3

Ref.: Khalifapatti Merchant Association and The Chattal Small Traders' Association.

Employees are appointed to the machine repairing shops and material selling shops as seen above. In the same way, employees have been employed in the tailoring factories in direct connection with the production. It has been seen in the survey that, on an average, there are 10-15 workers engaged at different levels of tailoring in every factory.

The following table contains an account of the matter.

Table 2.

Division/ type of labour	Number
(1) Total number of owners and labourers of the factory	6250 People (Approx.)
(2) Owners of factory	450 People (Approx.)
(3) Cutting man and tailoring artisans	800 People (Approx.)
(4) Tailoring worker (Helpers/ Iron men/ Packing men)	5000 People (Approx.)

Tailoring is a job that requires skill and creativity, whereas skill and smoothness in work is not any instant matter; it is the mere result of experience. So, when a worker is employed in any factory, he works as an apprentice up to a certain period just for boarding and lodging and does different types of work. At one stage he gets skill and begins to accumulate capital. When his saved capital becomes just about enough for investment, he takes a shop on rent in the same area or any other place and starts a small tailoring shop with one or two sewing machines. As a result, scopes of new employment are created in the new tailoring shop he has just started, as well as opportunity is created for other workers in the vacant job that he has left behind. The number of shops has increased mainly in this way in the area under study and a direct connection is being maintained with the labour market for employing workers. On the other hand, some people just come here to take training on tailoring. Those trained people are continuously leaving the area for other parts of the country, as well as the countries of Middle-East. According to the President of the Khalifa Patti Merchant Association, over the last 60 years, around 50,000 people have gone to different foreign countries including Saudi Arabia, United Arab Emirates after getting training here and are now earning foreign currency there.

Now we will see the backward development effect in the market of other materials. Locally-made fabrics and other local materials are used in the factories located in this area. This encourages the indigenous producers of fabrics. The establishment of more garments industries of this type will widen the road to flourishing more fabric industries in our country. In this study, due to the constraint of ability on my part, I have not been able to prove the backward development effect in the material market by analyzing the statistical data. However, the tendency of growing number of cloth stores in places like Terry Bazar of Chittagong, Islampur of Dhaka or Babui Bazar of Narshingdi, we can, at least, indirectly imagine the said effect. The owners of the garments industries of the area under this study also purchase their fabrics and other accessories from those markets. They are dependent on the locally arising shops for meeting their demands of thread, button and other related materials, too. Hence, many shops have sprouted here for selling such accessories and other related materials.

Hence, based on the above statistical proof and information we can take the hypothesis to be mostly correct, if not fully true.

5.2 HYPOTHESIS 2: “DIVISION OF LABOUR MAY RESULT INTO HIGHER LEVEL OF PRODUCTION”

Division of labour is an important aspect of production process. Division of labor increases dexterity and skill of the workers. When a person continuously performs the same task for a longer period, he becomes an expert. Division of labour facilitates mass production. Large scale production provides economies in the use of resources, such as raw materials, labour, tools etc. Optimum use of means of production helps to reduce cost of production and reduces wastage of the raw materials, increases productivity and improves the quality of the product. With the division of work, the range of occupation increases. In case, the work is split up into small processes, the task can be specialized in a short period and there can be much economy in time and efforts. Moreover, when a man is doing the same job over and over again, he sometimes succeeds in inventing easier methods of production and even new technology Our aim is to find out whether division of labor could bring out any good for the research area concerned.

In our research area we found out that, the same labour has to perform different tasks. Under various limitations like smaller firm size, limited or insufficient capital, poor numbers of machines; he cannot specialize or cannot do the task he wants to do. But in large firms with higher capital base division of labour is quite familiar and that increased the amount of profit and ensured a higher level of output. To prove this, we have to calculate the correlation between numbers of labours and production.

Table 3. Calculation of correlation between number of labours and amount of output

Sample	No. of labours (X)	Production (Y)	XY	X ²	Y ²
A ₁	8	1156	9248	64	1336306
A ₂	16	1690	27040	256	2856100
A ₃	12	1794.5	21528	144	3218436
A ₄	14	2160	30240	196	4665600
A ₅	12	1836	22032	144	3370896
B ₁	8	1664	13312	64	2768896
B ₂	20	2816	56320	400	7929856
B ₃	6	1085	6510	36	1177225
B ₄	18	2656	47808	324	7054336
B ₅	14	1573	12750	100	1625625
C ₁	10	1276	18540	144	2387025
C ₂	12	1545	59760	400	8928144
C ₃	20	2988	41760	256	6812100
C ₄	16	2610	19428	144	2621161
C ₅	12	1619	9560	64	1428025
D ₁	8	1195	15330	100	2350089
D ₂	10	1533	4014	36	447561
D ₃	6	1669	11385	81	1600225
D ₄	9	1265	4722	36	619369
D ₅	6	787	18600	144	2402500
E ₁	12	1550	25550	196	3330625
E ₂	14	1825	19152	144	2547216
E ₃	12	1596	45472	196	10549504
E ₄	14	3248	8440	100	712336
E ₅	10	844			
n=25	∑X=299	∑Y=42979	∑XY=57052	∑X ² =3965	∑Y ² =85213515

Source: fieldwork.

CORRELATION COEFFICIENT

$$\begin{aligned}
 r^2 &= \frac{\sum XY - \frac{\sum X \sum Y}{n}}{\sqrt{\left(\sum X^2 - \frac{(\sum X)^2}{n}\right) \left(\sum Y^2 - \frac{(\sum Y)^2}{n}\right)}} \\
 &= \frac{57052 - \frac{299 \times 42979}{25}}{\sqrt{\left(3965 - \frac{299^2}{25}\right) \left(85213515 - \frac{42979^2}{25}\right)}} \\
 &= \frac{56494.16}{\sqrt{4403899731}} \\
 &= \frac{56494.16}{66361.88} \\
 &= 0.8513043 \\
 &\approx 0.851(\text{approx.})
 \end{aligned}$$

$$\begin{aligned}
 r &= \pm 0.9226615 \\
 &= \pm 0.922(\text{approx.})
 \end{aligned}$$

Here value of r varies from +1 to -1 and the value is greater than 0.5. So, there is a highly positive correlation between the variables.

TEST OF HYPOTHESIS ABOUT COEFFICIENT OF CORRELATION

1. Null hypothesis: $H_0: \rho=0$ (there is no statistical relation between the variables)
2. Alternative hypothesis: $H_1: \rho \neq 0$ (there is statistical relation between the variables)

As the sample size is small, we are considering the sample static as ‘t statistic’.

CALCULATED VALUE OF ‘t’:

$$\begin{aligned}
 t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
 &= \frac{0.922\sqrt{25-2}}{\sqrt{1-(.922)^2}} \\
 &= \frac{4.421756}{0.3860051} \\
 &= 11.45517 \\
 &\approx 11.456
 \end{aligned}$$

CRITICAL VALUE OF ‘t’:

Here 5% level of significance is considered for type 1 error. But as the alternative hypothesis is indicating a two tailed test, level of significance is considered at 2.5% and if degree of freedom is (25-2)=23 then critical value of ‘t’ is ± 2.069 .

DECISION MAKING:

- i. If $t_c' < t < t_c$, we shall accept the null hypothesis.
- ii. If $t_c' > t > t_c$, we shall reject the null hypothesis.

Here, $t(11.456) > t_c(2.059)$. Hence the null hypothesis H_0 be rejected and alternative hypothesis H_a can be accepted where $t_c' = \text{Calculated } t$; $t_c = \text{Critical } t$.

Hence, we can say that there is a positive relationship between production and the number of workers in all small-scale garments industries. However, in this case, this study does not advocate increasing production by increasing number of workers, because, previously, in the test of hypothesis, it has been proved that if work is done in two shifts by employing more workers, the production will not increase, rather it can have negative effects. Here we propose to increase production by developing skill of labours through specialization and reallocation of labour. And to this end, the number of employments should be increased, at least to some extent, so that division of labour is possible moderately. However, the number of labours should be increased to such extent that the marginal cost of labour does not exceed the marginal production. On the other hand, the division of labour may not be possible if the factory is small in size, or if done, the marginal production may decrease. So, if the owners of a few small factories can join their capital and organize joint production, this may make specialization through the division of labour possible, as well as increase production.

So, based on the relationship we find between the division of labour and production after analyzing the hypothesis number 2, field survey of the samples and analysis of the ‘correlation’, we can take the hypothesis to be true.

5.3 HYPOTHESIS 3: “IF LABOUR HOUR CAN BE RESTRICTED TO 8 HOURS, MORE EMPLOYMENT GENERATION WILL BE POSSIBLE”

Although the international standard of working hour or labour hour is 8 hours per day, it is not generally followed in related industrial sector. The labours in our selective area generally work for 16 to 17 hours per day. This time limit is extended upto 19 to 20 hours during the festive seasons like Ramadan which is more than twice of international standard. The time duration can also be compared with two shifts of work (1 shift = 8 hours) although they get wages fixed up for the completion of a single shift. So it can be said that labours are exploited as there exists an asymmetric relation between wage and labour hour.

Now the questions that comes into the mind are-

Firstly, ‘Is the long duration of working hour worthy enough?’

In general, the labors have no specific working hour or office time. He starts from early morning and works till he is totally exhausted. He works through shiny morning, husky afternoon and gloomy midnights. From dawn to dusk he keeps working and stays at his workplace at night. As a result, his work progresses in a very slow motion, because of his exhaustion and reluctance to boundless working hours. In case he gets fatigued or disturbed during this long hour of working, he generally manages to and gets himself out of the factory for a longer break. So this provides an opportunity of shirking and extra hours of labours do not result into extra productivity or efficient labours. The labour works with full devotion only when he gets paid for extra labour hours. But in that period also rigorous work schedule and continuous pressure results in defective outputs in most the times. those defective products are in general sold into local markets at a very insignificant price meaning a loss to the industry whereas those products could have been imported if produced with proper dedication.

Second: Is it possible to make the labours work in shifts to ensure more productivity and efficiency rather than insisting them for a long period of time?

The answer is definitely a big 'no'. Because if the number of variable inputs is increased without increasing the amount of fixed inputs, the result will be zero. That means it will create an inverse effect on the production process as increased number of labours employed to generate higher productivity in two different shifts will only add to the variable cost in the form of extra wages and other facilities like housing of the labours etc.

So, we can conclude that, if shifts are created to generate labour employment under the probation of fixed labour hour, it will create an inverse effect on production and many producers and investors will get disheartened. As a result, the related hypothesis can be rejected.

CONCLUSION AND RECOMMENDATIONS

- These small and medium factories have not yet reached the long-term equilibrium because of barriers to entry and exit. As the demand for readymade garments is on increase, there is huge scope for new entrants and thus the industry will also flourish if barriers are withdrawn.
- If managed properly, the arrangement provides 'flexible specialization'. Moreover, the firms will not have to turn down a big order due to lack of capital or capacity and will get some marketing advantages.
- From the history of localized sewing industries, the fact is obvious that firms earn normal profit here at the breakeven level rather than earning supernormal profits. And the normal profit is also the consequence of entrepreneur's personal management, capital supply and level of embracement of risk. If import of ready-to-wear products from china and other foreign countries is restricted, the relevant location can become the center of likely industries in Bangladesh.
- These firms have not received any government assistance in 60 years. Moreover, electricity crisis and lack of easy loan facilities have made their problems acute. If government stops enforcing irrational and boiling regulations and provide some legal and financial assistance, provide training facilities (active collective efficiency) to the industry, it will obviously flourish in a gigantic manner.
- The industry goes a long way in reducing unemployment. According to our research the industry has the capability to provide employment to forty thousand labours within two years. It has increased the level of income in the relevant locality and also added a feather in women empowerment.
- The industry faces market competitiveness and it is demand driven to a greater extent. So, to survive the competitiveness the relevant producers should focus on greater quality, attractive design regarding recent fashion trends and offer the products at a consumer-friendly rate.

After all the discussions above we can conclude that if necessary, steps are taken by the government and other institutions to make the industry dynamic, the industry would surely add a new dimension in the country's economic development. Local agglomeration will definitely facilitate comparative advantage and following it backward and forward linkage industry will gear up. These firms or factories can gain some benefits by the fact of location; named as 'passive collective efficiency' (Khalid Nadvi,1990)

LIMITATIONS

Only 25 samples are taken while executing the research work, though real information are presented here. Most of the shops do not keep any record book.

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