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Research Note

TANNING INDUSTRY IN BANGLADESH: IS PERFORMANCE IMPROVING?

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ABSTRACT

Tanning industry is one of the important export oriented industries in Bangladesh. Its performances have been evaluated by using six dimensions: capacity utilization, progressiveness of the firm, share of foreign exchange earnings, amount of revenue earned, job opportunities and image of its products in the international market. Performance has been improving over time but not yet satisfactory. Some scopes are identified and necessary measures are suggested for the improvement of performance of the industry.

I. INTRODUCTION

The government of Bangladesh has adopted a policy to increase the contribution of tanning industry to foreign exchange earnings by phasing out the export of wet blue and building up the capacity to produce leather and leather products for export market. As a primary step the export of wet blue has been banned since July 1, 1990.

Performance of an industry has several dimensions for measurement. As all the industries are not alike so a special set of performance dimensions of one industry may not be applicable to another. Therefore, a variety of measurements of performance have been used by researchers depending on the objectives of the study, availability of data and researches' bias. See for example Bain (1959, pp 340-427), Caves (1967, pp. 94 -111), Goerge (1971, pp. 67-80 and 114-131), and Holterman (1973, pp. 119-139).

The tanning industry is labour intensive and is based on domestic raw materials i. e. hides and skins, but most of the machines and other inputs are imported from abroad. Despite its importance and valuable contribution, there is hardly any research work in this area except a study by Huq and Islam (1990) and a few reports of committees commissioned by the government,. In this condition a study on the performance of tanning industry is necessitated from the point of utilization of raw hides and skins, use of factory facilities and identification of probable scope for improvement in performance.

Considering the nature of the tanning industry and availability of data, the performance is analysed in this study on the basis of the following six dimensions

i) Firms' capacity utilization;
ii) Progressiveness of the industry;
iii) Contribution to foreign exchange earnings ;
iv) Tax revenue to the government exchequer ;
v) Employment generation ;
vi) Market image of Bangladesh leather..

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A general review of literature suggests that in practice the majority of empirical studies have used profitability of the firm or industry as one of the aspects of performance. But due to non-availability of requisite data profitability dimension of market performance is not analysed directly in this study. However, at least the first three of the above six dimensions contribute positively to the profitability of the firm. Therefore, we can draw inferences about profitability of the firms on the basis of these three dimensions indirectly.

The specific objectives of the paper are as follows:

i) To evaluate performance of the training industry;

ii) To suggest measures for the improvement of performance.

The paper is organised into four sections. Methodology of the study is discussed in Section II. Dimensions of performance have been analysed and some measures for improvement are presented in Section III while conclusions are given in Section IV.

II. METHODOLOGY

Sample and data

During the period of November 1987 to June 1988, 221 tanning units were recorded in Bangladesh of which 28 were closed. The remaining 193 units/firms taken as population of tannery and stratified into three i.e. large, medium and small firms. A large firm is one which processes 500 or more pieces of cow hide (or skin equivalent) per day. The medium firm processes more than 200 but less than 500 pieces of cow hide (or skin equivalent) per day (Raha 1989, p. 29). Total number of firms in each stratum and the number of firms selected in the sample are given in Table 1.

Table 1. Distribution of Population and Sample Size.

Stratum	Total Population	Sample Size
Large	10	10
Medium	15	7
Small	168	38
Total	193	55

Source: Field Survey, 1987-88.

Decision was taken to cover 30 percent of the total population i.e. 58 firms out of 193. Considering the greater importance and small number, all the large and 50 percent of the medium firms and the rest 40 firms were taken from small firms. Out of the selected 58 firms one medium sized and two small sized firms did not respond. The firms were located one each in the district of Khulna, Jessore, and Kushtia while 49 firms in Dhaka and 6 firms in Chittagong.

The study is based on both the primary and secondary data and collected by the researcher himself. Primary data related to installed capacity, actual production of wet blue plus crust and finished leather for the period of 1977-78 to 1986-87, causes of underutilization, employment position, market image of the product, stage of technological adoption etc. Secondary data related to export earnings, revenue from export duty on wet blue etc. were collected from leather cell of Export Promotion Bureau and Custom House in Dhaka and Custom House in Chittagong Port respectively.

The compound growth rate per annum of output and value in US $ have been estimated for tanning industry over the period of 1976-77 to 1990-91. The model used was $Y_t = Ae^{bt}$ which, when written in the logarithmic form becomes $\text{Log}_e Y = \text{Log}_e A + bt$ where, $e^b - 1$ is the compound growth rate.

III. DIMENSIONS OF PERFORMANCE AND AREAS OF IMPROVEMENT

Six dimensions of performance have been applied in turn to evaluate the performance of tanning industry in Bangladesh.

Capacity Utilization

The capacity utilization of 24 crust and finished leather producing units has been measured and presented in Table 2.

Table 2. Capacity utilization by firm size in crust/finished leather in Bangladesh.

Year	No. of firms			Average percent of capacity utilization		
	Large	Medium	Small	Large	Medium	Small
1981-82	2	2	-	4.47	5.54	-
1982-83	5	6	1	15.93	6.69	11.75
1983-84	6	8	1	47.27	4.46	12.50
1984-85	7	11	2	40.82	8.13	49.26
1985-86	8	11	2	47.60	5.34	12.14
1986-87	9	12	3	71.57	31.50	32.00

The rate of capacity utilization in each group of firms has fluctuated over the years (Table 2). The highest utilization in case of large and medium firm was recorded in 1986-87 (71.7% and 31.5% respectively). In small firms the highest utilization was about 49.3 per cent in 1984-85. The highest level of utilization was achieved by the large firms followed by small and medium sized firm. The lower utilization rate in 1984-85 by the large firms was attributable to the entry of a new firm which utilized 4 per cent of its capacity. These units were not only produce crust/finished leather but also processed wet blue. Here, a question may arise. How do the firms survive with a low capacity utilization? In practice, all the tanning units were not dependent on crust/finished leather only but also produced and exported wet blue. And the capacity utilization in case of wet blue was very high. If capacity utilization of the firm is calculated including wet blue also, the picture improves tremendously (for details see Raha 1990). On an average, the rate of capacity utilization was very low which is not conducive to the growth of the tanning industry. However, there were a few exception.

Progressiveness of the Industry

Progressiveness is an important aspect of performance of the industry. It is expected that an industry should add to its factors of 'production, improve the quality of its products, develop variety of products and also improve the teclutiyues. Progressiveness is generally measured b} the rate of technical changes of the industry and the amount of resources devoted to research and development.

To appraise the progress of tanning industry the firms are divided into tow groups on the basis of technical achievement. Five large size and two medium sized firms engaged in the production of crust/finished leather were technically progressive. The technically backward firms i.e. most of the small sized firms were mainly processing wet blue. However, one ofthe technically developed firms was also producing and exporting wet blue in 1986-87.

The field investigation revealed that there was no investment by the firms of small size on research and development. They spent only on entertainment of buyer and paid a commission of 4 to 5 per cent on FOB value of their export. Even the investment hy the large and medium sized firms was not on R & D but in physical plant. Actually, research was totally absence in tanning industry in Bangladesh. Some large firms have got technical support from their partners in joint venture project while the other firms were doing on the basis of "learning by doing process". The changes in the techniques of processing of wet blue in small units were negligible. For example the hand measurement system has been replaced by machine. Even in 1982 a few tanners used to shave the tanned goods to desire thickness which was uneconomic and also caused wastage of chemicals already used in processing i.e. from soaking to tanning (Chowdhury 1982, p. 14). But, splitting ofleather had now become common practice. Man)' of the firms were using these facilities at the Common Finishing Facility Centre (CFFC).

There was a change in medium and large sized firms. Many of the medium sized firms have imported modem machines either under Balancing, Modernization, Replacement and Expansion (BMRE) project or through self-financing. About seven firms already installed modem machines necessary for the production of crust and finished leather such as fleshing, sammying, splitting, shaving, twin vaccum dryer, toggling dryer, vibration stacking, jaw stacking, buffing, dedusting, h%draulic press, auto-spray, boiler and measuring machine including all other facilities.

Thus, the quality of the product of tanning industry has been improving though it was found the 58 per cent of the respondents were not satisfied with the present quality. The proportion of wet blue to crust/finished leather in the total export has been declining over time since 1981-82 (Table 3).

Table 3. Annual Variation of Export, 1981-82 to 1990-91.

Year	*Export in million Wet blue	Crust/finished	Sq. ft. Change from previous year (%) Wet blue	Crust/finished
1981-82	86.73	.55	-	-
1982-83	89.69	4.20	+3.41	+663.64
1983-84	88.30	14.61	- 1.55	+ 247.86
1984-85	66.54	15.21	- 24.64	+ 4.11
1985-86	53.79	18.82	- 19.16	+ 23.73
1986-87	98.61	38.85	+ 83.32	+ 106.43
1987-88	82.62	35.59	- 16.22	- 8.39
1988-89	65.75	61.81	- 20.42	+ 73.67
1989-90	74.51	82.72	+ 13.32	+ 33.83
1990-91	16.34	91.30	- 78.07	+ 10.37

Source : *Export Promotion Bureau, Dhaka, Bangladesh
+ Increase
- Decrease

Table 3 shows that annual variation in export both in the form of wet blue and crust/finished leather. An increase in export of crust/finished leather indicated the improvement of product-mix in the tanning industry. But it is also seen from Table 3 that the share of wet blue increased in 1986-87 and 1988-89 over the previous years. The higher unit price induced the firms to export large volume of wet blue in 1986-87 and 1989-90.

Table 4. The Growth of Leather Export from Bangladesh, 1976-77 to 1990-91.

Year	Quantity in million sq. ft.	Value in million Us $
1976-77	53.17	40.00
1977-78	87.17	45.38
1978-79	82.79	76.49
1979-80	43.34	65 55
1980-81	80.60	56.67
1981-82	87.28	63.02
1982-83	93.89	58.46
1983-84	102.91	85.26
1984-85	81.75	69.80
1985-86	72.61	60.73
1986-87	137.46	134.82
1987-88	118.21	147.17
1988-89	127.56	136.98
1989-90	157.22	178.89
1990-91	107.64	134.29
Growth rate	5.78%	9.21%

Source: Leather Cell, Export Promotion Bureau, Dhaka.

Contribution to Foreign Exchange Earnings

Leather is mainly an export oriented product in Bangladesh. So earnings from its export serve as an important indicator of performance of tanning industry. The volume of leather export has been increasing since independence of Bangladesh. But data on export volume were available from 1976-77 which are presented in Table 4.

Table 4 shows that although the export in 1990-91 was about 102.44 per cent higher than the volume of 1976-77 but the year to year variation has been uneven.

The volume of export increased at the compound growth rate of 5.78 per cent per annum over the 15 years from 1976-77 to 1990-91 while, the compound growth rate of export value in US $ was 9.21 per cent. The growth rate in money terms was higher as compound to growth rate in physical volume partly because of price inflation.

Table 5. Index Numbers of Leather Export from Bangladesh, 1976-77 to 1990-91.

Year	Export volume Fixed base 1976-77 = 100	Chain base	Value in US $ Fixed base 1976-77 = 100	Chain base
1976-77	100.00	100.00	100.00	100.00
1977-78	163.95	163.95	113.45	113.45
1978-79	155.71	94.98	191.23	168.55
1979-80	81.51	52.35	163.88	85.70
1980-81	151.59	185.97	141.68	86.85
1981-82	164.15	108.29	157.55	111.21
1982-83	176.58	107.57	146.15	92.76
1983-84	193.55	109.61	213.15	145.84
1984-85	153.75	79.44	174.50	81.87
1985-86	136.56	88.82	151.83	87.01
1986-87	258.53	189.31	337.05	222.00
1987-88	222.32	85.99	367.93	109 16
1988-89	239.91	107.91	342.45	93.08
1989-90	295.69	123.35	447.23	130.59
1990-91	202.44	68.46	335.73	75.07

Source: Computation based on data in Table 4.

Fixed base and chain base (Yamane 1967, pp. 281-282) index numbers are computed by using the data of Table 4 and results are presented in Table 5.

Table 5 shows no consistency in the fluctuation of index numbers over the years for export volume and for export earnings. This was due to variations in per unit price, share of skins and hides and also proportion of wet blue and crust/finished leather. Considering 1976-77 as base year the export volume increased to about 202 whereas export earnings in US dollar was increased nearly 336 in 1990-91. The chain base index number on export volume was found lower in 7 years than the previous years over the 15 years while the export earnings index numbers was lower only in 6 years than the previous year out of 15 years in US dollar.

The share of leather in total export earnings was encouraging which increased from 9.19 per cent in 1977-78 to 12.71 per cent in 1986-87 (Table 6).

Table 6. Share of Leather in the total Export Earnings of Bangladesh.

Year	Total export in million US $	Export of leather in million US $	Share of leather in total export (%)
1977-78	494.00	45.38	9.91
1978-79	619.00	76.49	12.36
1979-80	726.00	65.55	9.03
1980-81	710.00	56.67	7.98
1981-82	626.00	63.02	10.07
1982-83	687.00	58.46	8.51
1983-84	811.00	85.26	10.51
1984-85	934.00	69.80	7.47
1985-86	819.00	60.73	7.52
1986-87	1061.00	134.82	12.71

Source: Export Promotion Bureau, Dhaka.

It should be emphasized that there was tremendous scope for improvement of performance by mere exporting of crust and finished leather in lieu of wet blue.

Tax Revenue to Government Exchequer

The tanning industry not only earned foreign currency but the government also received a large amount of revenue as income tax of the wet blue processing firms and export duty on export of wet blue. Information on income tax was not available in disaggregated form for different industries. However, data on export duty on wet blue from 1977-78 to 1986-87 are presented in Table 7. Data on export duty for the year 1977-78 and 1980-81 were collected from the files of the Custom House, Chittagong. The monthly data were averaged for the respective two years. The amount of export duty for other years were estimated by using the volume of export of wet blue and the rate of export duty for the given years. The rate varied from 5 to 15 per cent on FOB value over the reference period. Export duty was increased 5 to 10 per cent from January 1978 and continued upto June 1980. It increased further to 15 per cent in July 1980 but declined in the next month and was valid for next two years. Then it increased again at 10 per cent for the year of 1983-84 and 1984-85. From 1985-86 the rate reduced to half i.e. 5 per cent.

Table 7. Revenue from Export Duty on Wet Blue, 1977-78 to 1986-87.

Year	Amount of export duty in million Taka
1977-78	45.944
1978-79	114.700
1979-80	101.427
1980-81	48.998
1981-82	62.705
1982-83	64.305
1983-84	171.230
1984-85	138.890
1985-86	60.065
1986-87	141.155
1987-88	144.000
1988-89	99.185
1989-90	123.630
1990-91	28.82

The main objective of the export duty was not to earn revenue but to discourage the exporters in exporting wet blue. Table 7 implies that the objective of the government could not be achieved. So the performance of the tanning industry on the basis of export duty was not satisfactory.

Employment Generation

The level of employment i.e. the number of persons engaged or employed is one of the indicators of the performance of the industry. It is easier for the unskilled labour to work in the tanning industry as most of the 17 sub-processes of the complete process of leather manufacturing required not a high level of skill (Huq and Aragaw 1981, pp. 19-22). Unskilled labour with a few months on the job training can acquire the skill necessary for most sub-processes. Of course there are some operations such as fleshing, splitting and shaving which require a longer period of training and experience. Trained leather technologists are also employed for overall supervision of some specialized processes. The employment information on the basis of 55 firms in the sample is presented in Table 8.

Table 8 shows that about 2922 people were working in 55 firms of which 74 per cent were permanent and 26 per cent were on temporary basis. The percentage of temporary labour was the highest (40.7%) in small sized firms followed by medium sized (24%) and large sized firms (20%). Secondly, it is seen from Table 8 that all the firms employed lesser number of labourers in relation to their requirement. Moreover, the industry employed about 26 per cent labour force on temporary basis. It means that 26 per cent labourers were deprived of all types of facilities available in permanent job. On the other hand the permanent workers were over burdened. It was found that there was no clear cut division of work even at the higher level of the firm with an exception of 3 or 4 firms. It is understood through discussion with the Labour Union of tannery workers that there was a large number of minor aged labourers in tanning industry. So far employment is concerned the performance of tanning industry was not satisfactory.

Table 8. Manpower requirement and actual employment of workers in the sample firms.

Firm size	No. Of respon dents	No. of workers required	No. of actual employment Permanent	Temporary	Total employ ment	Percentage of actual employment to requirement
Large	10	1703	1278 (80.48)	310 (19.52)	1588 (100)	93.25
Medium	7	635	449 (76.49)	138 (23.51)	587 (100)	92.44
Small	38	897	443 (59.30)	304 (40.70)	747 (100)	83.28
Total	55	3235	2170	752	2922	90.32

Figures in parentheses indicate percentages

Market Image of Bangladesh Leather

The market image of a product is an important factor for the industry. The present findings based on information collected from 38 out of 55 (69.1%) firms which responded and informal discussions with knowledgeable persons confirmed that there had been some complaints made in respect of leather export from Bangladesh which caused damage to market image. The respondents' responses are grouped into four and presented in Table 9.

Table 9. Complaints as raised against leather export

Firm size	No of respondents	Sub-standard processing	Delay in supply	Adulteration of grade	Shortage in measurement
Large	8	6 (75.00)	8 (100.00)	5 (62.00)	4 (50.00)
Medium	5	5 (100.00)	5 (100.00)	4 (80.00)	3 (60.00)
Small	25	25 (100.00)	20 (80.00)	23 (92.00)	21 (84.00)
Total	38	36 (94.74)	33 (86.84)	32 (84.221)	28 (73.68)

Figures in parentheses indicate percentages.

Table 9 indicates that the complaints in order of intensity were sub-standard processing, delay in supply of goods, adulteration of grade and shortage in measurement.

The fact that these complaints were elicited by the respondents themselves though none of them did accept those against their own firm but the responses carried a lot of weight in regard to the market image of the product and the producers.

All these four complaints were mainly against the wet blue producers and exporters. On the other hand, the exporters had also grievances that some of the importers intentionally raised the complaints or tried to revoke the contract when the market was unfavorable to them or to get some extra benefit from the exports. But the Bangladeshi exporters did not defend their image or reputation either in legal court or by submitting to arbitration.

However, the situation has been changing in Bangladesh. Attitude of the exporters has been changing and they have become more conscious about the brand name in the competitive market condition. Secondly, tie measurement by machine has been introduced in many cases. In addition, some producers of crust/finished leather have succeeded to create a goodwill of their product in international leather market.

Areas of Improvement

The areas for improvement of performance of tanning industry are discussed below: Firstly, proper measures should be taken for the solution of infrastructural facilities such as road, water supply, power supply including gas, communication etc. and also to improve R and D in tanning industry.

Secondly, the performance of tanning industry is greatly dependent on quality of raw materials and their timely availability. Generally slaughtering of animals are done over the country and mainly outside the slaughter house. Chowdhury (1982, pp. 18-21) noted that about 10 per cent minimum loss in quality of hides and skins and another 20 per cent loss in value due to existing marketing system and defective flaying and curing process. In this situation a mere training programme of the concerned persons i.e. producers, butchers, hide traders can help to improve and to maintain good quality of hides and skins which is important for improving industry's performance.

Thirdly, the collectors of fallen hides may be provided with financial facility and training as fallen hides constitute about 11 per cent of total supply.

Fourthly, additional foreign exchange earnings and creation of more employment opportunities could be possible by modernizing the existing units through BMRE or establishing new ones.

Fifthly, sales through a central sales organization would improve bargaining position and enable the exporters to get better price by negotiating all international sales contracts on behalf of the tanning industry consequently eliminate the destructive price slashing activities prevailing in the industry.

Sixthly, timely shipment should be ensured as leather is mainly used for luxurious goods which are subject to change in fashion and style. Time is very important factor in finished leather marketing.

Lastly, in the interest of the country and improvement of tanning industry the producer-exporters should be provided with necessary facilities which are being enjoyed by their competitors in India, Pakistan and other countries.

IV. CONCLUSIONS

The capacity utilization for crust/finished leather processing units has been slowly improving. There is a definite, albeit small, shift in the policy of the firms in favour of crust/finished leather through times. Performance could be improved by increasing the share of crust/finished leather in total export. Government's aim to discourage exporters of wet blue by imposing export duty was not successful. But export of wet blue has been banned later since July 1, 1990. Though it is a labour intensive industry but its performance was not satisfactory so far employment is concerned. Higher employment opportunities could be explored by producing crust/finished leather. The image of wet blue exporters was not desirable but changes in attitudes of producer-exporters lead to improve the situations. Some producers of crust/finished leather already created goodwill of their products.

It may be concluded that the overall performance of this industry has been improving within the existing techno-economic condition. But this level of performance can not be accepted as satisfactory. However, wide scope exists for improving the performance of tanning industry in future.

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