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BIDS WORKING PAPER

Working Paper No.8

OUTPUT MARKETING IN MATCH INDUSTRY IN BANGLADESH*

K.M. NABIUL ISLAM

June 1989

Bangladesh Institute of Development Studies,
E-17, Agargaon, Sher-e-Bangla Nagar
Dhaka - 7, G.P.O. Box No. 3854

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BANGLADESH INSTITUTE OF DEVELOPMENT STUDIES
DHAKA, BANGLADESH

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The paper is prepared within the framework of the study on 'Bangladesh Match Industry: A Provisional Prognosis of a Proposed Move Toward Greater Automation'.

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OUTPUT MARKETING IN MATCH INDUSTRY IN BANGLADESH

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1.1 Introduction

There were no match factories in the then East Pakistan at the time of partition in 1947. At the time of liberation of Bangladesh in 1971 there were, in all, 18 match industries all of which were private enterprises. After the liberation, however, 9 were nationalised and placed under the control of the Bangladesh Chemical Industries Corporation. Excepting one all of these enterprises, again, were later disinvested. Two larger match enterprises, namely, Dhaka Match and Dada Match Works were disinvested in 1984-85 to form Dhaka Match Industries Company (DAMICO) which is a joint venture (JV) of BCIC, Swedish Match (a private Swedish match company) and Swedfund (a Swedish public body). Following the disinvestment, the JV brought about expansion in its capacity and output through intensive modernisation of the industry. Subsequently, a study was undertaken by BIDS, titled 'Bangladesh Match Industry: A Provisional Prognosis of a Proposed Move Toward Greater Automation'. The study was intendet to look into current structure, operative modalities . demand and marketing issues, and choice options of match industry in Bangladesh so as to provide a background for a preliminary assessment of the Joint Venture. One of the fields of interest of the study is output marketing.

In successfully running of an enterprise the role of marketing as a whole, and output marketing in particular, can hardly be overemphasized. The role of marketing in the production process is more important in case of small and medium sized enterprises which, in general, are constrained by lack of adequate capital, infrastructural and transportation facilities and which face close marketing competition from large industries.

1.2. Study Objectives

The broad objective of this part of the main study is to examine various organisational and operational aspects of marketing system of match industry in Bangladesh. An attempt has been made to identify various agents and intermediaries through which the end products are reached to ultimate consumers. Flow of products through various markets, market areas, regions, has been examined with a view to finding incidence of regional variations, if any, with respect to distribution, pricing, design, brand and type of products marketed. Ex factory prices and market prices, at various stages of distribution of individual brands have been studied. Attempts have also been made to assess the nature and extent of competition among various prominent brands and enterprises. Seasonal variation in prices has also been looked into. Other issues examined include costs of marketing and profit margins at the distributors' wholesalers' and relailers' level of distribution network.

1.3 Traders' Survey

For the purpose of this exercise a 'one shot traders survey' covering distributors, wholesalers and retailers was carried out. As shown in Table 1, in all, a total of 53 traders covering three regions namely, Dhaka, Rajshahi and Chittagong were interviewed. Besides administering structured questionnaires informal meetings were held with the respondends to supplement the information.

The traders' survey was so designed that comparisons among regions could be obtained with respect to prices, sales etc. Ideally, a two-shot survey and also a large sample would have been more appropriate to obtain the full implications of the Joint Venture and to assess more exactly the seasonal and regional variations. But since the survey was constrained to a one-shot survey the findings presented here in this report are tentative.

Table 1

Distribution of sample traders by types and regions

Region	Distri-butor	Whole-saler	Retailer	Total
Dhaka	9	4	7	20(37.7)
Chittagong	-	8	2	10(18.9)
Rajshahi	2	4	4	10(18.9)
Bogra	3	5	4	12(22.6)
Pabna	1	-	-	1(1.9)
Total	15 (28.3)	21 (39.6)	17 (32.1)	53(100.0) (100.0)

Figures in parentheses give percentages.

Table 2

Distribution of sample distributors by enterprises

Enterprise	No. of distributors
Dhaka Match Industries, Dhaka	8
Ujala Match Factory, Dhaka	2
R.K. Industries (formerly Habib Match), Dhaka	3
New Jalalabad Match Factory, Dhaka	1
Dada Match Factory, Khulna	3
Bangladesh Match Co., Khulna	1
Aziz Match Factory, Rajshahi	1
*Total:	19

*Out of 15 distributors interviewed, 4 are simultaneously enlisted with two enterprises.

2. Organisation of Marketing

2.1 Market Structure

We may now get on to examining the market structure and operation of marketing agents including their marketing practices and behaviour. Like most other industrial products,

distribution of matches also takes place through standard chain of marketing agents, namely, distributors, wholesalers, and retailers. The total number of match producing industrial enterprises at present is 20 located at 7 different districts. The number of factories at different locations are:

Dhaka	8
Chittagong	5
Khulna	2
Rajshahi	1
Bogra	1
Chandpur	2
Khepupara	1
	20

The factories, in general, are concentrated in bigger towns; especially the larger enterprises are concentrated in two or three cities. Their geographical sphere of marketing however, is more widely spread than those enterprises of smaller size and operation. The smaller units usually have no fixed distribution network; they mainly cater to local markets. Some of the smaller enterprises themselves act as distributors of their own product. They usually sell their products directly to the wholesalers and in a few cases even to retailers. There are, also some mid-level traders between distributors and wholesalers who have adequate working capital to hoard matches, buying them in dull season at comparatively lower prices and selling them at much higher prices during peak period. Such

agents are mostly found operating at Dhaka market. Some affluent distributors themselves act as such stockists since they can forecast more precisely the market situation depending on the production schedule of the industrial enterprises. As such, these agents are in a position to influence the market to their advantage.

Under the existing system of marketing of matches the industrial units appoint formal distributors for a specific area who are supposed to deliver matches to wholesalers at specific rates. The wholesalers may or may not be enlisted with the distributors. As already mentioned, distributors are supposed to sell to wholesalers at a particular margin. However, given the market uncertainty and price fluctuations characterizing the match market, the distributors are often forced to operate at a loss. In particular, during periods when the prices fall much below the ex-factory rates, the distributors incur considerable losses in marketing matches. At such time the system of fixed and attached wholesalers does not operate in practice. The distributors have to regain the losses during the peak season when market prices are well above the ex-factory prices. Thus, a good amount of risk is involved in operating as formal distributors specially if one does not have enough capital to accumulate stocks during off-season for sales during peak season.

On the other hand, wholesalers operate on the basis of daily market prices and they usually do not have any commitment with the distributors with regard to lifting matches from them at specific rates. Hence, wholesalers have little risk involved in marketing their items. A distributor usually has a fixed deposit with concerned industry as security money whereas any trader can be a wholesaler through procurement of a trade license from the municipality.

2.2 Number of distributors by enterprise and region

Table 3 shows spread of the distributors by enterprise and by regions. Available information reveal that about 53 percent of the distributors are appointed in Dhaka division, followed by 21 percent in Rajshahi division, 19 percent in Chittagong division and only 7 percent in Khulna division. Among 14 enterprises interviewed. R.K. Industries (formerly Habib Match) has the largest marketing network consisting of 168 outlets, more than 50 per cent of which are in Dhaka division. Chattal Match of Chittagong and Samabay Match of Patuakhali does not have any distributors. None of the 4 Chittagong based enterprises have any distributor in Chittagong. Sattar Match has a good network of 50 outlets outside Chittagong but does not have a single local distributor. However, they do have a local sales centre from which they deliver only a small proportion of their products. Aziz Match of Rajshahi has its market mostly within North Bengal only. They have appointed all their 10 distributors in Rajshahi region and have no outlet in Dhaka or elsewhere. Similarly, none of the other small enterprises namely Habib Match, Samabay Match and Chattal Match have any marketing outlet in Dhaka region. Ujala, the only public enterprise has maximum proportion of distributors appointed in Dhaka. Out of its total 19 distributors, 14 are in Dhaka, 2 in Chattagong and 3 in Rajshahi division. Bangladesh Match Co. which is based in Khulna is a big enterprise compared to many. They have their local outlet in Khulna. DAMICO and R.K. industries also have distributors in Khulna division. Other than these three enterprises none has any market outlets at distributors' level in whole of Khulna division. Information on distribution network of Sattar Match was not available. Just 50 per cent of the total number of DAMICO distributors are appointed in Dhaka division, the rest 50 percent

Table 3

Number of distributors by enterprise* and regions

Enterprise / Divisions	Dhaka	Chitta-gong	Rajshahi	Khulna	Total
DAMICO	23	7	7	9	46
R.K. Industries	88	44	24	12	168
Ujala Match	14	2	3	-	19
New Jalalabad	20	-	10	-	30
Amin Match	1	2	-	-	3
Shamsher Industry	1	-	-	-	1
Sattar Match ***	NA	-	NA	NA	50
Chattal Match	-	-	-	-	-
Ibrahim Match	3	-	1	-	4
A.K. Khan	1	-	-	-	1
Bangladesh Match Co.***	NA	NA	NA	NA	25
Aziz Match	-	-	10	-	10
Habib Match	-	-	6	-	6
Samabay Match**	-	-	-	-	-
	151 (53)	55 (19)	61 (21)	21 (7)	288 (100)

Notes: *We were able to investigate 14 out of 20 enterprises.

**Chattal Match and Samabay Match do not have any distributor - the companies themselves act as distributors.

***Information on distribution network by rigions of Satter Match and Bangladesh Matel Co. were not available.

being spread over other three divisions. The cottage type industry namely, Samabay Match at Khepupura has its market within Patuakhali district only, the distribution being undertaken by themselves. A.K. Khan Match has also engaged no distributor. This industry is being run under sub-contract (Tk. 5/- per gross being paid to original owner) by some one who is known to be one of the biggest stockist in Match Market in Dhaka. Shamsher Industry of Dhaka is also reported to be run by the same person. Similarly, Chattal Match is run and controlled by Sattar Match Factory. Standard Match Factory of Chandpur is also reported to be run and managed by Sattar Match Factory.

2.3 Category of Distributors

As already mentioned earlier, we have carried out survey of 15 distributors over the following markets;

Dhaka	7
Narayangonj	2
Rajshahi	2
Bogra	3
Pabna	1
	15

Out of these 15 distributors, 4 are appointed simultaneously with 2 enterprises as mentioned below:

Dhaka Match Industries Co. (DAMICO)	8
Ujala Match Factory	2
R.K. Industries	3
New Jalalabad Match	1
Dada Match Factory	3
Bangladesh Match Co.	1
Aziz Match Factory	1
	19

Under the existing system, there prevails 3 categories of distributorship, namely A,B and C depending on the volume of monthly quota and security money kept with respective enterprises. Only 3 enterprises, namely DAMICO, R.K. Industries and Ujala Match have all the 3 categories of distributors. All other enterprises have currently only one category of distributor.

2.4 Monthly quota and security money

Out of 14, only 5 industrial enterprises have the system of monthly quota and security money. Table 4 provides information on category of distributorship and the corresponding quota and security money. From the table the following figures can be obtained:

	Monthly quota averaged over all categories (gross)	Per gross security money (Tk.)
DAMICO	12,433	4.69
R.K. Industries(Habib Match)	2,000	32.50
Ujala Match	2,833	30.00
BMCO	6,000	8.33
Aziz Match	5,000	5.00

The maximum monthly quota averaged over all categories occurs for DAMICO with minimum amount of security money. Minimum quota occurs in case of R.K. Industry. Monthly quota offered by DAMICO is more than 6 times the quota offered by R.K. Industries whereas security money in case of R.K. Industries is 7 times higher than that of DAMICO.

It is observed that most of the industries, particularly the smaller sized enterprises do not have the system of attaching monthly quota and security money even if they appoint distributors for marketing their products. This is presumably because in that case the enterprises can reserve the selling right and thereby exercise control over the market in their favour.

Table 4

Category of distributorships and monthly quota and security money by enterprises

Industries	Monthly quota (Gr.) in category			Security money in category (Tk)		
	A	B	C	A	B	C
DAMICO	20,000	12,500	4,800	100,000	50,000	25,000
R.K. Industries(Habib Match)	3,000	2,000	1,000	30,000	25,000	10,000
Ujala	5,000	2,500	1,000	50,000	25,000	10,000
Dada	22,000	-	-	100,000	-	-
BMCO	6,000	-	-	50,000	-	-
Aziz	6,000	-	-	25,000	-	-
Sattar*	-	-	-	10,000	-	-

*Sattar Match has no fixed quota.

2.5 Market Areas

Match enterprises are mostly located in urban areas. But match is an essential consumer product and hence its geographical sphere of marketing is widely spread. Marketing of matches takes place through a chain of intermediaries involving distributors, wholesalers and retailers. Wholesalers' markets are mostly located in urban and semi-urban areas. Dhaka, the capital city is the

biggest wholesale market. In case of large majority of the enterprises, the main market of match is the capital city market. Particularly the large sized enterprises have their primary market located in Dhaka. A large majority of the industries has the highest number of distributors and wholesalers concentrated in city. As mentioned before, some of the enterprises do not have any distributors outside Dhaka. For example, Ibrahim Match and A.K. Khan Match of Chittagong have no distribution outlet in Chittagong, although this is the second largest city, not only in terms of population but also in terms of location of match industries. Most of the brands produced by enterprises in Chittagong first reaches Dhaka before it is redirected to Chittagong market to meet local demand. Moulvi Bazar, Begum Bazar, Chowk Bazar are the most important wholesale markets in the capital city. Dewangonj, Bakshi Bazar, Sat Kania, Khatunganj are some of the important markets in Chittagong. Shaheb Bazar of of Rajshahi, Helatala of Khulna are some other important wholwsale trading markets. Below is presented a list showing important whole sale markets in selected districts of the country.(Table - 5)

3. Occupational involvement and educational level of the intermediaries, and source of perchase :

Distributors:

Table 6 gives primary occupation of the distributors by years of involvement in match distribution. As can be seen from the table, 40 per cent of the traders entered into match trade during last ten years period, 53 per cent entered during last 10-20 years period and only one has been involved in match trade for longer than 20 years.

Table 5
A list of selected wholesale markets

District/Region	Wholesale markets
Dhaka	Moulvi Bazar, Begum Bazar, Chowk Bazar, Sreenagar, Narsingdi
Narayanganj	Kalir Bazar, Dikbadur Bazar
Mymensingh	Bhairab Bazar
Jamalpur	Sherpur
Comilla	Chowk Bazar
Noakhali	Feni
Chittagong	Khatunganj, Satkania, Dewan Hat
Khulna	Helatala
Barisal	Chowk Bazar
Jhalakathi	Manahasipatty
Jossore	Jhenaidah, P Mashba
Pabna	Kashinathpur, Ishwardi
Faridpur	Chowk Bazar, Gopalganj
Bogra	Raja Bazar
Rangpur	Haragacha, Lalmonirhat
Dinajpur	Fulbari, Thakurgaon
Rajshahi	Shaheb Bazar
Sylhet	New Market, Kalighat
Habiganj	Chowdhury Bazar

Table 6

Primary occupation of distributors by years of involvement in match trade

Years of involvement in match trade	Primary occupation			
	Trading in match	Trading in cigarette, milk etc.	Others	Total
0 - 10	3	1	2	6
10 - 20	6	1	1	8
20 +	1	-	-	1
Total	10	2	3	15

Most of the sample distributors trade in a number of other items in addition to match. As can be seen from the table, 66 per cent of the distributors have match trade as their primary occupation.

As regards educational level, about 40 percent of the distributors are fairly educated, having education upto intermediate level and beyond, and the remaining 60 percent have a school level education.

Wholesalers

About half of the sample wholesalers have been involved in match trade for more than 5 years and the remaining half are newcomers. As in the case of distributors, wholesalers do not trade in match alone. Out of 21 wholesalers interviewed, only one wholesaler trades in only match. Most other wholesalers deal in a wide range of commodities like cigarettes, soaps, baby foods, confectionery etc. along with match. Wholesale trading in such items is the primary occupation in the case of sample wholesalers. Another 5 wholesalers have other activities as their primary occupation.

As regards educational level, the position of wholesalers is worse then that of the distributors. None of the wholesalers has education beyond SSC level, most of whom again, are not even able to read and write properly.

Although wholesalers get supplies of major proportion of matches (51 per cent) from distributors, considerable proportion (44 per cent) of parchases are made from other wholesalers. Only one wholesaler gets supplies directly from factory accounting for remaining 5 per cent of total volume of parchase.

Table 7

Primary occupation of wholesalers by years of involvement in match trade

Years of involvement	Primary Occupation			Total
	Wholesale trading in match	Wholesale trading in other items e.g. cigarette, soap, baby foods etc.	Others	
0 - 5	-	7	3	10 (48)
5 - 10	1	4	3	6 (28)
10 -	-	4	1	5 (24)
Total :	1 (5)	15 (71)	5 (24)	21(100) (100)

Retailers:

Retailers operate in a small shop; most of them are minor children trading in varieties of items like bidi, cigarettes, betel-nuts and grocery items. Most of the shops are located on or near foot paths and hardly have any permanent structure or address. Most of the retailers are young and ne comers, their business involvement being for less than 5 years. No retailers have any other occupation other than this trading although this type of trading cannot fetch even a minimum livelihood for them. Most of the traders are illiterate.

As regards purchases, some 16 per cent of the purchases are made directly from distributors and the remaining 84 per cent made from wholesalers.

4. Brands under production

There exists a variety of brands under various names and styles produced by different enterprises. Total number of brands currently under use by the 20 existing match enterprises is 62. In course of this study we interviewed 13 enterprises and identified 47 different brands. Table 8 presents these brand names and factory prices thereof by enterprise. As can be seen from the table, single brand is produced by Ibrahim Match and Shamsher Industries, maximum number of brands (6) are produced by Sattar Match

Table 8

Brand under production and factory prices

Industry	No. of Brands	Brands	Factory price	Factory price averaged over brands	Average price as % of DAMICO average price
(1)	(2)	(3)	(4)	(5)	(6)
DAMICO	5	Butterfly	62.0		
		1-Horse	59.0		
		Rickshaw	60.0	59.80	100.00
		7-Horse	59.0	(1.95)	
		Taxi	59.0		
R.K. Industries	4	Sunflower	62.0		
		3-Horse	59.0	59.75	99.9
		Meghna	59.0	(2.25)	
		Swan	59.0		

Contd..

Table 8(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
Ujala Match	4	Cock	55.0		
		Ship	58.0	55.75	93.2
		7-Star	55.0	(2.33)	
		Dream flower	55.0		
Amin Match	4	Bagla	50.0		
		6-Horse	50.0	50.00	83.6
		1-Tiger	50.0	(-)	
		Shampan	50.0		
Shamsher	1	Zabra	45.0	45.0	75.25
				(-)	
New Jalalabad	3	Rani	51.0		
			54.0	52.67	88.08
			53.0	(2.37)	
Sattar Match	6	Torch	55.90		
		Cock	55.90		
		D.Gun	55.90	55.90	93.48
		Pistol	55.90	(-)	
		Gold cup	55.90		
		Handsake	55.90		
Chattal Match	2	7-P Horse	52.0	52.00	86.96
		Lion	52.0	(-)	

Contd...

Table 8 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)
A.K. Khan	4	Zahaj	55.0		
		F.Basket	55.0	55.00	91.97
		Disco	55.0	(-)	
		Royal Bengal Tiger	55.0		
Ibrahim Match	1	3-Star	52.0	52.00 (-)	86.96
Aziz Match	4	Uttara	55.0		
		Padma	55.0		
		Champion	54.0	54.75	91.56
		5-Horse	55.0	(-)	
Habib Match	3	Engine			
		Lucky	NA	-	-
		Lucy-7			
Bangladesh Match Co.	3	Star	55.0		
		Shilpi	55.0	55.00	91.97
		Red flower	55.0	(-)	
Samabay	3	Pradip	38.0		
		Olympic	38.0	38.00	63.55
		Samabay	38.0	(-)	
ALL	47	-	-	53.9 (10.1)	90.13

Figures in parentheses are co-efficient of variation (CV)

followed by 5 brands produced by DAMICO. To what extent and in what respect do differences exist among various brnads produced by respective enterprises? Asked to identify the differences, about 52 per cent of the wholesalers mentioned that there prevails hardly any significant difference among various brands produced by respective enterprises. They opined that the differences among brands in labels only. However, 48 per cent of wholesalers interviewed mentioned that the differences exist with regard to size and shape of match boxes, and not with regard to quality of the match.

Factory prices (per gross) averaged over brands produced by each enterprise are also shown in Table 8. The lowest price (Tk. 38/- per gross) is observed in the case of matches produced by cottage type enterprise, namely Samabay Match of Khepupara of Patuakhali. In other cases, prices are found to vary from Tk. 45 to Tk. 60 among the various brnads. Variation in prices between different brands of the same enterprises is negligible, as expressed by co-efficient of variation which is as low as around 2 per cent. However, the variability of average prices of different brands accross industry is considerable. (CV is around 10 percent).

Table 9 provides information on average sales by distributors, wholesalers and retailers in the study month (April 1987) according to the enterprise origin of the match. Table 10 provides information on volume of sales by brand name in the reference month.

As is evident from these tables, DAMICO brands have the highest sales both at distributors and wholesalers' level. Among DAMICO brands sold in the month of survey, Butterfly has the highest sales at distributors'level amounting to around 3.7 thousand gross per distributor, and 7-Horse has the highest sales at wholesalers'

Table 9

Average sales by traders by enterprise origin

Enterprise	Average sales in reference month(Gross)		
	Per Distributor	Per Wholesaler	Per Retailer
DAMICO	5856 (77.0)	538 (66.7)	2.74 (45.6)
R.K. Industries	467 (6.1)	36 (4.5)	0.06 (1.0)
Ujala	216 (2.9)	41 (5.1)	0.09 (2.0)
New Jalalabad	133 (1.7)	3 (0.3)	0.35 (2.0)
Sattar Match	-	17 (2.0)	-
Chattal Match	-	5 (0.6)	-
A.K. Khan	-	12 (1.5)	-
Aziz Match	266 (3.5)	70 (8.7)	1.94 (32.4)
Habib Match	-	33 (4.1)	0.24 (4.0)
Bangladesh Match	66 (8.8)	52 (6.4)	0.53 (8.8)
Total	7604 (100.0)	807 (100.0)	5.99 (100.0)

Table 10

Average sales by brands in reference month

brands	Distributors		Wholesalers	
	Volume of sales (Gross)	Average sale per distributor (Gross)	Volume of sales (Gross)	Average sale per wholesale (Gross)
	(2)	(3)	(4)	(5)
utterfly	55850	3723	4000	190
-Horse	4000	267	800	38
ickshaw	500	33	-	-
-Horse	21500	1433	5850	279
axi	6000	400	650	31
unflower	1500	100	350	17
-Horse	5500	367	400	19
eghna	-	-	-	-
wan	-	-	-	-
ck	1250	83	50	2
nip	200	133	170	8
-Star	-	-	650	31
ream flower	-	-	-	-

Retailers	
Volume of sales (Gross)	Average sale per retailer (Gross)
(6)	(7)
8.7	0.51
14.0	0.82
-	-
8.8	0.52
15.0	0.88
1.0	0.06
-	-
-	-
-	-
-	-
1.5	0.09
-	-
-	-

Contd...

Table 10 (Contd.)

)	(2)	(3)	(4)	(5)
Bagla	-	-	-	-
5-Horse	-	-	-	-
1-Tiger	-	-	-	-
Zebra	-	-	-	-
ani	-	-	60	3
eauty	500	33	-	-
ara	1500	100	-	-
orch	-	-	-	-
ock	-	-	-	-
. Gun	-	-	350	17
istol	-	-	-	-
old cup	-	-	-	-
andsake	-	-	-	-
P Horse	-	-	100	5
on	-	-	-	-

(6)	(7)
-	-
-	-
-	-
-	-
6.)	0.35
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Contd...

Table 10 (Contd.)

(1)		(2)	(3)	(4)	(5)	(6)	(7)
A.K. Khan	Zahaj	-	-	-	-	-	-
	F.Basket	-	-	250	12	-	-
	Disco	-	-	-	-	-	-
	R.B.Tiger	-	-	-	-	-	-
Ibrahim	3-Star	-	-	-	-	-	-
Aziz Match	Uttara	2500	167	650	31	16.0	0.94
	Padma	1500	100	400	19	-	-
	Champion	-	-	200	10	9.0	0.53
	5-Horse	-	-	200	10	8.0	0.47
Habib Match	Engine	-	-	250	12	-	-
	Luck	-	-	300	14	-	-
	Lucky-7	-	-	150	7	4.0	0.24
Bangladesh Match Co.	Star	5000	333	550	26	-	-
	Shilpi	5000	333	550	26	6.0	0.35
	Red flower	-	-	-	-	3.0	0.18

level amounting to around 3 hundred gross per wholesaler. This is followed by such brands as Taxi of DAMICO and 3-Horse of R.K. Industries. Other dominant brnads in respect of volume of sales are Star and Shilpi of Bangladesh Match Co., 1-Horse of DAMICO, Uttara and Padma of Aziz Match industries, ship of Ujala Match Factory.

Adding together, the volume of sales both at wholesalers', and distributors'level, the various brands sold in the market can be placed in the following order:

Brands	% of sales	Enterprise producing
Butterfly	45.7	DAMICO
7-Horse	20.9	DAMICO
Taxi	5.1	DAMICO
3-Horse	4.5	R.K. Industries
Star	4.2	BMCO
Shilpi	4.2	BMCO
1-Horse	3.7	DAMICO
Uttara	2.4	Axix Match
Ship	1.7	Ujala
Padma	1.5	Aziz Match
Sun-flower	1.4	R.K. Industries
Tara	1.1	New Jalalabad

It appears from Table 9 that an average distributor sells around 8 thousand gross of matches monthly in which DAMICO's share is more than three fourths. Similarly, an average wholesaler sells around 8 hundred gross monthly in which DAMICO's

share is about two thirds. During the month of survey, the average sales per sample retailer was about 6 gross of which about 46 per cent were DAMICO brands.

An attempt is made below to explain the variation in volume of sales by brands. The dependent variable is volume of sales (in gross) by individent industries and explenatory variables considered seperately an

i) No. of distributors

ii) No. of brands

iii) Volume of productions (in gross)

A regorous multiple regression exercise is not worth while given the small size of our sumple. Hence, we have carried out simple two variable regression taking into account of the above three independent variable separately.

1) The estimated regression equation for no of distributors is

$$Y = 1491.7020 + 5.6544\ X$$
$$(0.002365)$$

Y = Volume of sales by wholesalers by industries

X = No. of distributors of individual industries

$R = 0.082456 \quad t_R = 0.234017 \quad t_B = 2390.0$

Figures in parentheses refer to standard errors of regression co-efficients. Co-relation co-efficient is insignificant indicating no probable association between volume of sales of industries by wholesalers and no. of distributors appointed by industries.

Taking into account combined volume sales by wholesalers and distributors, the estimated regression equation is

$$Y = 7692.7286 + 151.9739\ X$$
$$(0.002299)$$

Where Y = volume of sales jointly by wholesalers and distributors of industries

X = No. of distributors of individual industries.

$R = 0.2477659$ $t_R = 0.7233$ $t_B = 66092.0$ Figures in parenthesis refer to standard errors of regression co-efficients.

(1) The estimated regression equation for no. of brands is

$$Y = 2193.2353 + 1766\ X$$
$$(0.0738451)$$

Where Y = volume of sales by industries through wholesalers

X = No. of brands sold by wholesalers.

$R = 0.6377255$ $t_R = 2.3417$ $t_B = 23921.3$

(Figure in parenthesis is the standard error of regression co-efficient)

Co-relation Co-efficient is significant at 5 per cent level of significance indicating an association between volume of sales and no. of brands.

(2) We now make an attempt to examine whether there exists any association between, volume of sales by industries through distributors and wholesalers, and production volume by industries. The production volume refers to year 1985-86 and volume of sales refers to April, 1987. The estimated regression equation is

$$Y = -6.2207 + 0.0156863\ X$$
$$(0.0000141207)$$

Where Y = volume of sales

X = production volume

$R = 0.984103 \quad t_R = 12.39 \quad t_B = 1110.9$

(Figure in parenthesis refers to standard error)

Co-relation co-efficient is highly significant and one can observe close association between volume of sales and volume of production. This leads one to inter that those industries which have larger production have larger sales also, and no industries have the tendency to have stocks of production unsold in normal condition. This, again, indicate that there still exists a gap between production and demand.

6. Volume of Sales and Returns Compared to 3 years back

During the course of the present study attempts were made to compare the present volume of sales and returns as against that 3 years back. The findings so obtained are presented in table 11. It appears from the table that About 33 per cent of the respondent traders reported no change in the volume of sales and about 42 per cent reported no change in the rate of return. However, more than 46 per cent of the respondents reported the present volume of sales to be 58 per cent higher compared to that 3 years back and 27 per cent of the respondent traders reported the present rate of return to be 76 per cent higher than they had 3 years back. About 22 per cent of the respondents reported the present sales to be less by 22 per cent and 33 per cent reported rate of return to be less by 15 per cent than it was 3 years back.

Table 11

Present volume of sales and return compared to 3 years back

		% of Volume of sales is			% of Return on sales		
	No. of respondents	less	more	constant	less	more	constant
Distributors	13	6(23)	5(49)	2(C)	12(13)	-	1(C)
Wholesalers	19	3(22)	12(74)	4(C)	2(28)	7(116)	10(C)
Retailers	14	1(20)	4(20)	9(C)	1(20)	5(21)	8(C)
Total	46	10(22)	21(58)	15(C)	15(15)	12(76)	19(C)

Figures outside parentheses represent number of respondents and figures in parentheses represent proportions of sales and returns compared to 3 years back.

C-indicate the proportion to be constant.

7. Price variability and seasonal variation

7.1 Peak and non-peak period

The sample distributors were asked to identify peak and non-peak months in match marketing. Table 12 presents distribution of the respondents by the months identified as peak months. As can be seen from the table 80 percent of the respondents identified 4 months (July through October) as the peak period.

The period during July through October is comparitively a wet season when stock of matches gets damped. As a result the proportion of wastages of match sticks due to mis-fires considerably increases. This may be one of the factors leading to higher consumption rate of matches during this period. Match consumption is higher also in this period presumably because of higher rate of smoking during this period of storms, rainy and cold weather. This phenomenon is more true in rural and remote areas where there exists meagre electrical infrustructure. On the other hand, productions of match are more or less uniform except that those of the cottage type enterprises are hampered to some extent during rainy days due to lack of adequate drying facilities.

Table 12

Identification of Peak and non-peak period by sample traders

Months identified as peak months	No. of peak months	No. of respondents
April, May, June, July	4	4(8.2)
May, June, July, August	4	1(2.0)
July, August, Sept., Oct.,	4	39(79.6)
November, December	2	2(4.1)
June, August, Nove.,Dec.,	5	2(4.1)
Uniform throughout	-	1(2.0)
	4.0	49(100.0)

Table 13 gives average monthly sales during peak and non-peak period by trader type. As can be seen from the table, average monthly sale in peak period is higher than that in non-peak period by 18 per cent in the case of distributors, 26 per cent in the case of wholesalers and 30 per cent in the case of retailers.

Distributors and wholesalers sell on cash, credit or advance. During non-peak period, however, there is no sale on advance payment. During peak period, on the other hand,

there are hardly any credit sale. These information are presented in Table 14. As can be seen from this Table, at least two-thirds of the sales of the distributors, and three-fourths of those of the wholesalers are made on credits during non-peak period.

Table 13

Average monthly sales during peak and non-peak period (Tk)

Traders	Average monthly sales (Gr) during	
	Peak period	Non-peak period
Distributors	8214 (59.1)	5678 (40.9)
Wholesalers	1905 (63.0)	1095 (37.0)
Retailers	11 (64.7)	6 (35.3)
	10130 (63.7)	5779 (36.3)

Figures in brackets denote percentages.

Table 14

Proportion of cash and credit sales of wholesalers and distributors in peak and non-peak period

	Percentage of sales by distributors on			Percentage of sales by wholesalers on		
	Cash	Credit	Advance	Cash	Credit	Advance
Peak period	75.0	10.0	15.0	90.6	4.9	4.5
Non-peak period	32.7	67.3	-	24.3	75.7	-
Whole year	46.8	48.2	5.0	46.4	52.1	1.5

7.2 Price Variability

Table 15 gives maximum price and minimum price of major brands during last 3 years as quoted by the distributors. The table shows that average price of match in 1985 was higher than that in 1984 by 7 per cent while the average price of match in 1986 was 19 per cent higher than in 1985. Maximum variability in price was observed in case of 1- Horse brand and minimum in the case of Uttara brand.

It appears that except for Uttara brand of Aziz Match Factory (CV is 7 percent) considerable variability accross years occurs for all other brands (CVs are more than 10 percent). Among within different brands of matches, variability also occurs significently over a particular year, (CVs being more than 10 percent). For all brands taken togather, co-efficient of variation was estimated to be 16 percent.

Table 15

Per gross average price of selected brands over the last 3 years (in Taka)

Brand	1984			1985			1986			Average over 3 years
	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average	
7-Horse	48.50	55.00	51.75	48.50	57.00	52.75	59.50	66.00	62.75	55.8 (11.0)
3-Horse	48.50	52.00	50.25	48.50	56.00	52.25	59.50	67.00	63.25	55.3 (11.9)
Butterfly	46.88	55.50	51.19	48.10	56.25	52.18	55.50	66.50	61.00	55.3 (13.1)
1-Horse	32.50	37.70	35.10	41.00	46.00	43.50	55.00	57.00	56.00	45.0 (19.4)
Uttara	45.00	47.00	46.00	48.00	50.00	49.00	54.00	55.00	54.50	49.8 (7.3)
Cock	36.00	44.00	40.00	40.00	50.00	45.00	48.00	55.00	51.50	45.5 (13.9)
Average	42.90	48.53	45.72 (15.0)	45.68	52.54	49.11 (10.6)	55.25	61.08	58.67 (10.2)	51.1 (15.8)

Figures in parentheses are Co-efficient of variations.

7.3 Regional variation in price

Table 16 gives wholesale price of match in selected urban centres in different years. As can be seen from the Table, regional variation in price was different in different years. Highest variation was observed in 1985-86. Co-efficient of variation for that year was estimated at about 14 per cent. However, an analysis of variance shows that region as a factor affecting price is not statistically significant.(F=0.0188)

7.4 Wholesale and retail prices

Table 17 presents price of different brands of matches at different trading levels at the time of the survey. Table 18 shows the price averages over various brands for each enterprise. As can be seen from the Table, price per gross of match averaged over all enterprises is Tk. 57.36 at distributors' level, Tk. 58.93 at wholesalers' level and Tk. 76.67 at retailers' level. Intra-enterprise difference in price is not very significant. The highest price is commanded by DAMICO products followed by R.K. Industries while the lowest price (about 15 per cent lower than that of DAMICO) is observed in the case of Chattal match which happens to be a cottage type enterprises.

Table 16

Wholesale prices of match in selected urban centres

(Tk. per gross)

Town	82-83	83-84	84-85	85-86	86-87
Dhaka	47	38	40	61	65.34
Narayanganj	48	38	43	62	65.63
Chittagong	43	41	41	59	65.15
Rajshahi	39	39	39	54	63.93
Khulna	38	36	40	60	69.02
Sylhet	46	40	44	39	65.02
Rangpur	40	38	40	64	71.02
Average	42.00	38.57	41.00	57.00	66.44
CV	8.8	3.9	4.1	13.8	3.6

Source: BBS and Traders's survey.

8. Traders costs and margin

As transportation is the main cost item in the match trade we have considered no other costs than transport costs. As regards distributors, matches are disposed off not at the factory gates but at the premises of the distributors by means of enterprises' own transport. This is true for most of the enterprises and for

almost all categories of distributors. So, distributors normally do not have to incur any transportation costs.

Table 17

Prices of selected brands at different trading levels

(Tk./gross)

Industry/brands		Distributors' Selling Price	Wholesalers' Selling Price	Retailers' Selling Price
(1)	(2)	(3)	(4)	(5)
DAMICO	Butterfly	61.39	63.70	[illegible].44
	1-Horse	59.10	62.22	72.00
	Rickshaw	60.00	-	-
	7-Horse	58.99	61.64	72.00
	Taxi	59.50	62.54	72.00
R.K. Industries	Sun-flower	61.00	62.00	72.00
	3-Horse	59.64	61.81	-
Ujala	Cock	55.92	56.80	-
	Ship	57.[illegible]0	58.[illegible]2	72.00
	7-Star	-	58.38	-
New Jalalabad	Rani	-	59.00	85.40
	Beauty	54.12	-	-
	Tara	53.25	-	-
Sattar	D. Gun	-	59.17	-
Chattal	7-P Horse	-	53.00	-
A.K. Khan	F. Basket	-	59.08	-

Contd...

Table 17(Contd.)

(1)	(2)	(3)	(4)	(5)
Aziz	Uttara	55.25	59.69	75.60
	Padma	54.10	59.63	-
	Champion	-	60.00	75.24
	5-Horse	-	60.00	72.00
Habib	Engine	-	52.00	-
	Lucky	-	54.58	-
	Lucky-7	-	53.00	72.00
BMCO	Star	55.60	60.00	-
	Shilpi	55.60	60.00	84.00
	Red flower	-	-	72.00
All		57.36	58.93	74.67

Co-efficient of variation among wholesalers' prices of different brands, CV - 5.4%.

As already stated, wholesalers get supplies of major proportion of matches (51 per cent) from distributors, but considerable proportion (44 per cent) are traded in from other wholesalers. Only one out of 21 wholesalers interviewed, gets supplies directly from factory accounting for remaining 5 per cent of total value of purchase. About one-third of the total number of wholesalers usually make the purchases from the same market(within 50 yds' distance) and most of the rest two thirds make purchases from nearby markets (withing a distance of 1 mile).

Table 18

Prices averaged over brands by enterprise

(Tk./gross)

Enterprise	Factory	Distri-butors' price	Whole-salers' price	Wholesaler price as % of DAMICO wholesalers' price
DAMICO	59.80	59.80	62.52	100.00
R.K. Industries	59.75	60.32	61.91	99.02
Ujala Match	55.75	56.46	57.77	92.40
New Jalalabad	52.67	53.69	59.00	94.37
Sattar Match	55.90	-	59.17	94.64
Chattal Match	52.00	-	53.00	84.77
A.K. Khan	55.00	-	59.08	94.50
Aziz Match	54.75	54.68	59.83	93.70
Habib Match	-	-	53.22	85.12
BMCO	55.00	55.60	60.00	95.97

General practice seems to be for the wholesalers to carrymer chandise by head loads. Only a small proportion of match are supplied by means of rickshaw or van. On an average, a wholesaler is to incur a cost of Tk. 2.75 per 100 gross for transportation.

In so far as the retailers are concerned, about two thirds of them make purchases from within a distance of less than a mile, and one third made purchases from within 5 miles. Transport cost appears to be negligible since general practice seems to be for large majority of the retailers to carry match along with other trade items on head loads and on foot.

Price information available in the study month for selected brands presented earlier in Table 17 reveal that distributors under study dealing in a total number of 15 brands incur losses in survey month in marketing the following five brands:

Brands	Loss/Gr	Enterprises
Sunflower	1.00	R.K. Industries
Ship	1.00	Ujala Match
Padma	0.90	Aziz Match
Butterfly	0.61	DAMICO
7-Horse	0.01	DAMICO

Nevertheless,, losses incurred in selling these brands are usually fairly compensated by selling other brands or items. Over and above, our survey month was rather a dull period when usually many distributors have to incur some amount of losses in the expectation of better fortune in the peak season. On the other hand, the wholesalers do not have to undergo any losses in any brands.

Now, in order to have an estimate of gross margins of the traders over the year we are to consider prices of both peak and non-peak periods. Prices collected from the survey in the month of April may be considered to be a rough estimate of the average price in the non-peak period. An estimate of the average price during the preceeding peak period was also gathered from the traders during the course of the study. Now given the quantities of individual brands sold both in peak and non-peak periods (used as weights) we made an attempt of making estimate of gross margins of traders at various levels over the year. It shows that although some of the distributors have incurred losses in the survey month overall crude profit margins over the year is not discouraging. An average distributor thus earns a gross margin of Tk. 1.24 per gross throughout the year. Wholesalers' margin have been more or less uniform throughout the year and they hardly incur any losses. An average wholesaler and retailer earn a gross profit of Tk. 2.78 and Tk. 14.07 per gross respectively throughout the year.

9. Traders Perception

9.1 Quality of matches

During the course of our study attempts were made to have some knowledge regarding people's reaction and attitude towards quality of matches in general, and DAMICO matches in particular. With this perspective, we have tried to incorporate the opinions of the traders about consumers' preference towards type and quality of matches. The findings so obtained are presented in Table 19. It reveals that only one fourth of the wholesalers and distributors are of the opinion that consumers will prefer carborized matches even at a slightly higher price. The rest three fourths of the traders are in favour of low prices even if that mean no betterment of quality.

In this context, one has to mention that sharp differences are reported in practices and behaviours of rural and urban consumers. In the remote and rural areas consumers are less educated and are thus indifferent to relative cost and benefit of any product, and are more concerned about prices than quality. They generally look for low priced matches not bothering about quality. Similar opinion was voiced by about two thirds of the retailers interviewed.

9.2 DAMICO matches

Responses of the traders to the question about the effectiveness of the joint venture and matches produced by DAMICO were recorded in relation to four alternatives of prices and quality levels (Table 20). It needs to be mentioned here that most of the retailers are not in the know of the newly formed joint venture. However, they are aware of the labels of the company. Hence, for the retailers we referred to labels of the company while interviewing them and tried to assess opinions about the quality and prices in question. On the other hand, cent per cent of distributors and 95 per cent of the wholesalers did know about DAMICO.

As revealed in Table 20 most of the retailers (60 per cent) are of the opinion that DAMICO matches are not of more than average quality but has a comparatively higher price. Specially, Butterfly brand was referred to in this context. In their view, even brands like Flower Basket, Sunflower and Red Flower are in no way inforior to Butterfly; Butterfly is reported to have the highest proportion of waste sticks. Earning of comparatively higher profit margins from other brands may have resulted in such opinions of the retailers. All the traders considered, 18 per cent are of the opinion that DAMICO matches are really of

Table 19

Traders perception about consumers' preference

Traders	No. of respon-dents	Consumers preferring	
		Carborized matches at the cost of little but high price	Low price at the cost of quality
Distributors	15	4 (26.7)	11 (73.3)
Wholesalers	21	5 (23.8)	15 (76.3)
Retailers	15	5 (33.3)	10 (66.7)
Total	51	14 (27.5)	37 (72.5)

Table 20

Traders perception about DAMICO matches

Traders	No.of respon-dents	Traders' perceptions about DAMICO matches			
		Average quality and average price	Average quality but compara-tively higher price	Higher quality but aver-age price	Higher quality and higher price
Wholesalers	10	2	1	3	4
Retailers	12	-	7	1	4
Total	22 (100)	2 (9.1)	8 (36.4)	4 (18.2)	8 (36.4)

higher quality although prices are average. On the other hand 36 per cent opined that the matches are no doubt of higher quality but prices are also high.

9.3 Match industry and business

Traders interviewed were asked to give their opinion regarding the likely impact of the establishment of DAMICO on Bangladesh match industry in general and on their individual business activity in particular. The responses so obtained are presented in Table 21.

As can be seen from the table, more than 44 per cent of traders were reluctant to pass any comment. About 25 per cent of the respondents opined a favourable impact on overall industry and about 17 per cent of the respondents feel that there would be an unfavourable impact leaving 14 per cent citing that establishment of DAMICO would create no impact on match industries in Bangladesh. Corresponding figures on opinions about their overall business position are almost similar which are 28 per cent, 19 per cent and 8 per cent respectively.

Table 21

Impact on overall industry and business

	No. comment	Impect on Overall industries position			Impact on Overall business position		
		Favour-able	Un-favour-able	No effect	Favour-able	Un-favour-able	No effect
Distributors							
DAMICO	2	3	1	4	3	3	2
NON-DAMICO	2	1	1	1	-	2	1
Wholesalers	12	5	4	-	7	2	-
TOTAL	16 (44.4)	9 (25.0)	6 (16.6)	5 (14.0)	10 (27.7)	7 (19.4)	3 (8.3)