

## Sustainable Revenue and Net Profit: Study on Food & Allied Industry in Bangladesh

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**Abstract:** Food and Allied enterprise supply the basic needs of human being in Bangladesh. This industry is considered as one of the most important manufacturing sectors. Like other business enterprises, such enterprises need to incur selling & distribution cost for marketing their products. By examining the impact of such selling & distribution cost on revenue and profit with reference to eight sample firms, this study finds that selling & distribution cost is highly correlated with revenue and net profit and the coefficients of correlation are 0.990 and 0.989 respectively. For further analysis marketing cost or selling & distribution cost again classified into two groups namely promotional cost and non – promotional cost. Correlation of promotional cost with revenue and net profit is reflected by coefficients, which are 0.986 and 0.982 respectively whereas coefficients of correlation of non – promotional cost with revenue and net profit are 0.991 and 0.993 respectively. This study finally get the result that revenue and net profit is more depended on promotional cost as compared to overall selling and distribution cost and non – promotional cost. To sustain in the industry and to generate more revenue and profit, the company should be aware about their sales volume, net profit, promotional and non – promotional and overall selling and distribution cost of self as well as competitors. So proper understanding of relationship between revenue & cost helps a company to avoid unnecessary costs and attempt to cost reduction approach significantly.

**Keywords:** Food Companies, Selling & Distribution Cost, Promotional Cost, Non – promotional cost, Sales Revenue, Net Profit.

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### I. Introduction

Business and organizations that produce, manage, regulate, and distribute food and beverages comprise the food and beverage production industry. They are an essential part of society. As a fundamental human need, food and beverages always have played a central part in our lives. Food industry is a rapidly growing sector in Bangladesh, employing a significant portion of the labor force in the country. From 2004 to 2010, the food processing industry in Bangladesh grew at an average 7.7 percent per annum. The food industry employs 2.45 percent of the country's total labor force and its share in the GDP was 2.01 percent in 2010. There are also numerous small scale factories and domestic units engaged in food processing throughout the country. Food processing in Bangladesh has traditionally been small scale, with domestic or family business using common processing knowledge for the conservation and handling of raw agricultural commodities to make them usable as food and feed. With the passes of time to meet the demand of large population of the country this food industry becomes modernize day by day. Technological advancement has made a dramatic change in large scale production of this industry. Now the food processing sector in Bangladesh is entered to dairy, edible oil, sugar, rice, wheat, fruit and vegetable, tea, poultry/beef, pulses and spices and fish processing industries. In today's world people become conscious about health, and thus food processing and packaging has an objective of providing a safe nutritious diet in order to maintain health. Good packaging system not only ensures safety of food but also increase sales volume by creating good appearance and customer appeal. So packaging, advertising and marketing become an area of vital importance for food manufactures if they are going to continue to complete and expand.

### II. Statement of the Problem

The crux of the problem in the context of marketing of food industry is that the market in Bangladesh remains tiny compared to the population size because of the lack of spending power of the people. On the contrary the encouraging feature is that the increased awareness of food care sector is causing the demand to expand in this sector. Domestic market size of food has a direct relationship with economic variables, such as population growth, healthcare expenditure, income level, etc. In Bangladesh, the industry has been experiencing

a good growth over the last few years. The growth is attributable to rising population with increasing food expenditure per capita. Noticeably, the increase in food expenditure is due to higher level of private spending, demonstrating rising food awareness among the people. In this connection it is also notable that a significant number of food consumers obtain food without awareness. The quantity of safe food purchased often depends more on the consumer's finances than on the required. But the cost/price calculation of food does not consider 'the ability to pay' of population in under developed or developing countries like Bangladesh. In case of some food that are not subject to a fixed price, there is considerable price sensitivity in Bangladesh, which is explained by the very high variation in quality with significant incidents of health-damaging spurious food and fake food that contain no active ingredient. Thus, it is not uncommon for the high quality branded generics of the leading manufacturers to have a 100% or more price premium over their competitors. Selling & distribution cost or marketing cost which includes advertisement and promotional expense is one of the elements of cost of sale of food products. In marketing cost and advertisement & promotional cost are necessary for providing food to the customers. But unfortunately, marketing cost includes some irrelevant expenses such as free sample, gift to agent, wholesaler, and retailer etc. Which are unwanted expenditure from the view point of consumer, and this burdened to be borne by the ultimate consumers. In this context the nature of selling and distribution cost, its relation to sustainable revenue & profit, the extent of promotional cost and its impact on sustainable revenue & profit are considered as an important area of investigation to which this paper makes an attempt.

### **III. Literature Review**

At the global world, many valuable studies are available on food industry and related sectors on various aspects. But such studies are not many in Bangladesh especially in the aspect of selling and distribution cost or marketing costs & promotional cost and their impact on sales revenue and profit. In such a context a brief review on some selected studies are made below with reference to aspects of selling and distribution cost or marketing costs & promotional costs. Kenneth Marsh and Bugusu B. (2007) evaluate the advances in food processing and food packaging and find this task play a primary role in continuing the food supply among the safest in the world. The paper concentrate on packaging technology that must balance food protection with other issues, including energy and material costs, heightened social and environmental consciousness and strict regulations on pollutants and disposal of municipal solid waste and finally it addresses disposal methods and legislation on packaging disposal. SDC position paper (2009) Sustainable Development Commission (SDC) has both followed and contributed to the reemerging debate about UK food security with great interest. The paper argues that sense can only be made of the debate if food security policy is based on delivering sustainability. The message that there is an ideal 'fit' between sustainable development and food security is in danger of being submerged in appeals to single-issue solutions. Food security is a complex issue which in future will require the entire food system and consumers to change. Noman A. and Atahar Ali M. A. (2013) suggested that despite different reasons for the unsafe treatment and adulteration of foodstuffs in Bangladesh, this study will concentrate on the regulatory failures to combat the current food safety problems persisting in the country. Aigbogun E. et al (2018), based on their research, state that it is evidently clear that the role of nanotechnology in food industries cannot be overemphasized. Currently, in nanotechnology, nanosensors serve as diagnostic devices to monitor food processes to meet the wholeness and safety of food.

In such a context a brief review on some select studies are made below with reference to aspects of selling & distribution costs and promotional cost. Verdon et al (1968) while studying the relationship between advertising and aggregate demand found that advertising has a positive relation with aggregate demand. Elliot (2001) revealed that advertising has a significantly positive effect on food industry sales and that the relationship between advertising expenditure and sales appears to be stable.

In the context of the aspect of profit and profitability a number of studies were found. For instance, Dan et al (1984) explained, the effects of advertisement and interpersonal communication on profit. That study found different effect on profitability on the basis of different stages of product life cycle. At the initial stage advertising costs was very high and as the product moves towards maturity firm gradually reduce its advertising expenses. Engel (1996) outlined financial ratios such as Gross Profit Margin, Operating Profit Margin and Net Profit Margin as the main indicators of profitability. Burroughs R. and Harper D. (2002) examine profitability trends in the Canadian food processing industry compared to other manufacturing industries during the period 1990- 1998. The paper used the rate of return (ROR) on long-term capital as the measure of profitability in the food processing industry and the manufacturing sector (without food processing). Nimalathasan (2009) defined profit as an absolute measure of earning capacity, while profitability is a relative measure of earning capacity. On the other hand, Harvey et al (2012) labeled profitability ratio as a benchmark for evaluating the financial position and performance of a firm. Joshi & Hanssens (2010) stated that, there exists a long – term relationship between advertising expenditure and market capitalization. Morgenson (2011) in a study defined profitability as a measure of the difference between the purchase price and the cost of bringing to market i.e. the revenue the company derives from its operations, minus all explicit costs. He emphasized on profitability denoting

sustainability of excess earnings of a venture or from product. According to him it is a reflection of the value consumers get from the product or service, the employees getting fair wages and the company making an expected return on their investment. Olusola A. (2011) demonstrated the impact of advertising on the sales and profit of a business organization taking StarcommsPlc as a case and suggested that impact of advertising at Starcomms was clearly defined and it should have become a continuous practice for Starcomms. Schiefer J. and Hartmann M. (2013) showed that firm characteristics are far more important than industry structure in determining food industry profitability. Main effects and interactions of year and country membership are weak, indicating that performance differentials can poorly be explained by macroeconomic and trade theory. Abdullahi and Dauda (2015) showed a significant positive relationship between advertising and profitability of firms. But it does not consider the other factors of promotional cost such as sales promotion, personal selling, publicity etc. Husain S. and Alnefae S. (2016) examined the statistical significance of the impact of working capital management on profitability of the selected listed agriculture and food companies of Saudi Arabia and the research aims at finding out the relationship between the components of working capital management and the profitability of firms. They found that the regression analysis revealed that there is no significant impact of working capital management on profitability of the selected listed agriculture and food companies of Saudi Arabia.

The above review revealed that there is some consensus on food processing and food safety and the economic impact of selling & distribution or marketing cost and advertising cost on net profit although some studies have shown diverse results. Most of the studies conducted on only impact of advertisement cost and profitability, not on impact of promotional cost as whole and on revenue. In such a context it is considered worthwhile to examine the situation as to the impact of selling & distribution or marketing cost and promotional costs including advertising cost on sales revenue and net profit of food industry in Bangladesh.

#### **IV. Objectives of the Study**

The present study has been designed to examine the impact of selling and distribution cost, especially promotional costs on sales and revenue of food industry in Bangladesh. In such a context the following were taken as the major objectives:

- a. To identify the elements of selling and distribution costs and the constituents of advertising & promotional costs and to point out the basic difference between these two sets
- b. To evaluate the extent to which the selling and distribution costs specially the promotional costs including advertising costs effect sales revenue and net profit.
- c. To examine the growth pattern and trend of sales revenue and net profit.

#### **V. Methodology of the Study**

The study is mainly based on secondary data and information. Most of the organizational data and information have been collected from the annual reports of the respective sample companies. Along with, some information revealed from case studies, journal articles, books, newspapers, bulletins, and companies' websites. Different government and non-government organizations' websites also have been consulted to collect necessary data for the study. After collection of data, they were tabulated and analyzed. Simple statistical tools like percentage, regression and correlation (using SPSS) have been used to interpret the data and draw inferences there from.

#### **VI. Scope of the study**

The scope of this study is limited to eight (8) food companies out of eighteen (18) listed food companies in the country. These eight companies which have nation – wide operational area have been selected as sample for this study with the expectation that they will be of representative character. Data for three years were collected which have been analyzed for arriving at conclusions. The data collected have been tabulated and explained by the researchers as per need of the analysis. It is to be mentioned that in two sample companies, accounting year was 1<sup>st</sup> July to 30<sup>th</sup> June. Another notable issue is that in some cases update information was not available. That's why for three sample companies, namely Fu Wang foods, Rangpur dairy and Beach hatchery, financial data of 2017 was not included in this paper. So the scope of the study is limited by the availability of financial information of eight sample companies moreover for analytical simplicity non promotional cost has ignored.

#### **VII. The Conceptual Aspects**

##### **a. Selling & distribution Cost: Meaning and Importance**

A selling & distribution cost or marketing cost is an amount of money the company spends on marketing. Selling & distribution cost is an important consideration for all businesses because marketing is a primary business function that creates a customer for the business. It includes employee costs, agency fees,

advertising, digital marketing, publications, sponsorships, seminars, business travel, gifts to clients, etc. For detail analysis marketing cost can be broadly classified as promotional and non-promotional cost.

In fact selling & distribution costs or marketing costs are essential for every type of business. Businesses enterprises invest in selling & distribution or marketing to increase marketing orbit, enhance sales revenue and accelerate growth.

As regards elements of selling & distribution costs or marketing cost, the employee costs can be significant if there is an internal marketing department in the organization. In that case businesses houses may employ specialists, such as website managers, marketing communications managers or press officers, in addition to a marketing manager or director.

As to advertising and promotion costs, companies with small advertising budgets may plan and manage campaigns internally, rather than using an agency because it requires paying the media owner for the space or time slot. Large companies often resort to agency help and use their expertise, which of course requires large advertising expenditure.

Digital marketing has becoming popular day by day. Such marketing expenses include the internal or external costs of designing and managing the website together with the ongoing costs of developing and updating site contents.

Companies especially small ones significantly prefers direct marketing because direct marketing by mail or email is a cost-effective way to communicate with current and potential customers.

If a company offers seminars, workshops to the staff or customers, these are also considered as marketing expenses. Any travel fees to meet customers, refreshment facility to attract customers, honorarium for presenters that to present seminars to potential customers etc. also qualify as marketing expenses. The gifts to clients including promotional coupons are also be included in marketing costs to the effort.

Indirect marketing activities can be resorted with social efforts. For example, when a company sponsors a local sporting event, charity fundraiser or a local athlete or artist, this is a marketing expense. The cost of having a logo applied to sportswear, as well as any funding of an event's marketing efforts is included under this head.

#### **b. Selling & distribution Costs: Elements**

In the context of study of selling and distribution cost or marketing costs of the sample enterprises, first an attempt was made to identify the elements that are spend by the firms and in this regard the following items are found to have been incurred and reported as marketing cost in the financial statements by the representative food companies of Bangladesh:

Salary & Allowances , TA/DA , Carrying Charges , Dealer Incentive Program ,Advertising & Publicity , Business Promotion, Tour & Travels , Research & Development , Free Sample, Depot Expenses , Export Expenses, Sales Promotion Vehicle Maintenance, Incentive, Toll Charge, Bed Debts , Carriage Outward , Commission on Sales ,Donation & subscription ,Electricity Expense, Entertainment , Festival Bonus , Ice Purchase , Labor Charge , Loading & Unloading Charges , Oxygen Purchase ,Packing Materials : (Styro Foam Box , Gum Tape , Rubber Band , Polybag & Polythene,) Paper, Books & Periodicals , Photostat Exp., Postage & Courier Exp., Printing & Stationery , sales staff meal, Telex, Fax & Telephone ,Traveling & Conveyance, Fuel and Electricity ,Sales Incentive, Employee Training / Welfare, Freight and Forwarding Expenses, Carriage outwards & Loading, Depreciation , Repairs & Maintenance, Subs. Newspaper & Periodicals, Promotion Expenses, Membership Subscription, Guest House expense, Donation & Subscription, Freight & Forwarding, Business promotion and development expense, Salary and benefits, Printing and stationary, Conveyance, Entertainment, Repair and maintenance, Cost of packaging materials,
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#### **c. Promotional costs: Importance and Constituents**

A promotion expense is a cost that a business incurs to make its products or services better known to consumers. As to marketing products and enhancing sales, the role of advertising and sale promotion is found to be very significant. It is especially important to face competition and expand market share. Advertising is any form of non - personal presentation and promotion of ideas, goods, or services by an identified sponsor, with an objective of a specific communication task to be accomplished with a specific target audience during a specific period of time. Advertisement encompass activities relevant to suggesting new uses for a product, informing the market of a price change, describing available services and support, correcting false impressions, persuading customers to purchase now and to receive a sales call, convincing customers to tell others about the brand, reminding consumers where to buy the product and finally keeping the brand in customer's mind during off - seasons. In this study, the following heads of advertisement & promotional costs have been segregated from marketing cost which is mentioned in the financial statements by the sample food companies:

Carriage outward, TA/DA , Carrying Charges, ,Advertising & Publicity , Business Promotion, Free Sample, Vehicle Maintenance, , Incentive, Commission on Sales , Packing Materials : (Styro Foam Box , Gum Tape , Rubber Band , Polybag & Polythene,) Paper, Books & Periodicals , Photostat Exp., Postage & Courier Exp., Printing & Stationery , Telex, Fax & Telephone ,Traveling & Conveyance, Sales Incentive, Freight and Forwarding Expenses, Carriage outwards & Loading, Donation & Subscription, Entertainment, Guest House, Bonuses, Travelling & Conveyance, Subs. Newspaper & Periodicals.

### VIII. Analysis

Table - 1: Financial Performance of Food Industry: context of Revenue and Net Profit, Promotional and Non-promotional Costs and also Total Selling & Distribution Cost (Figure in lakh taka)

Name of Companies	Year	Revenue	Net Profit	Promotional cost*	Non-promotional Cost*	Total selling And distribution expense
Olympic Industries Limited	2017	112,905.58	16,432.51	6,214.75	7,007.50	13,222.25
	2016	109,650.43	16,237.18	5,810.78	6,654.29	12,465.07
	2015	89,961.49	10,943.40	4,740.27	5,234.25	9,974.52
	Total	312,517.50	43,613.09	16,765.80	18,896.04	35,661.85
	Average	104,172.50	14,537.70	5,588.60	6,298.68	11,887.28
APEX Food Limited	2017	16,427.72	89.195	142.41	640.851	783.26
	2016	20,319.47	(132.29)	254.70	720.42	975.12
	2015	27,517.80	848.43	677.03	759.25	1,436.28
	Total	64,264.99	805.335	1,074.14	2,120.53	3,194.67
	Average	21,421.663	268.45	358.05	706.84	1,064.89
Fine foods Limited	2017	477.12	86.30	08.99	13.09	22.08
	2016	348.74	106.47	02.03	16.53	18.56
	2015	260.56	(19.44)	04.93	17.58	22.51
	Total	1,086.43	173.33	15.95	47.20	63.15
	Average	362.14	57.78	05.32	15.70	21.05
Fu-wang foods Limited	2016	7,671.09	851.60	38.79	211.47	250.26
	2015	8,198.52	1,100.54	44.98	209.81	254.79
	2014	7,944.1	596.94	41.4	224.44	265.84
	Total	23,813.7	2,549.08	125.17	645.72	770.89
	Average	7,937.91	849.69	41.72	215.24	256.96
"PRAN" Agricultural Marketing Co. Ltd.	2016-17	23,803.35	549.37	1,300.27	798.36	2,098.63
	2015-16	20,915.53	529.98	1,111.83	625.49	1,737.32
	2014-15	18,865.05	555.85	1,039.01	631.91	1,670.92
	Total	63,583.93	1,635.20	3,451.11	2,055.76	5,506.87
	Average	21,194.64	545.07	1,150.37	685.25	1835.62
Rangpur Dairy and Food Products Limited	2016	5,324.31	353.76	84.05	196.69	280.74
	2015	4,685.89	330.59	76.75	59.84	136.59
	2014	4,677.95	410.47	86.6	139.85	226.45
	Total	14,688.15	1,094.82	247.4	396.38	643.78
	Average	4,896.05	364.94	82.47	132.13	214.59
BEACH Hatchery Limited	2016	281.56	(218.66)	38.14	19.96	58.10
	2014	1,316.49	211.23	217.40	131.32	348.72
	2013	1,415.15	390.06	207.81	98.41	306.22
	Total	3,013.20	382.63	463.35	249.69	713.04
	Average	1,004.40	127.54	154.45	83.23	237.68
GEMINI Sea Food Limited	2016-17	13,551.24	215.55	5.27	10.27	15.54
	2015-16	11,121.37	227.82	4.13	08.17	12.3
	2014-15	9,052.38	75.74	4.22	12.27	16.49
	Total	33,724.99	519.11	13.62	30.71	44.33
	Average	11,241.66	173.04	4.54	10.24	14.78

[Source: Annual Reports of respective companies.]

\* Promotional cost and Non- Promotional costs are segregated from Total Selling and Distribution Expenses

For analytical convenient the above table can be summarized in the following way by highlighting average of three years and including industry average which has calculated on the basis of eight sample companies. The table is used to make a comparison among the sample companies on the basis of industry average.

**Table- 2:** Financial Performance of Food Industry: context of Average Revenue and Average Net Profit vis – a – vis Average Promotional and Average Non-promotional Costs and also Average Total Selling & Distribution Cost (Figure in lakh taka)

Name of Companies	Revenue	Net Profit	Promotional cost*	Non-promotional Cost*	Selling and Distribution expenses
Olympic Industries Limited	104,172.50	14,537.70	5,588.60	6,298.68	11,887.28
APEX Food Limited	21,421.66	268.45	358.05	706.84	1,064.89
Fine Foods Limited	362.14	57.78	5.32	15.70	21.05
Fu-wangFoodsLimited	7,937.91	849.69	41.72	215.24	256.96
“PRAN” Agricultural Marketing Co. Ltd	21,194.64	545.07	1,150.37	685.25	1,835.62
Rangpur Dairy and Food Products Limited	4,896.05	364.94	82.47	132.13	214.59
BEACH Hatchery Limited	1,004.40	127.54	154.45	83.23	237.68
GEMINI SeaFood Limited	11,241.66	173.04	4.54	10.24	14.76
Industry Average	21,528.87	2,115.526	923.19	1,018.414	1,941.604

From the above table we find different scenarios of average revenue for different companies. Broadly we can categorize them into three categories by comparing company revenue with industry average. One category indicates higher average revenue than industry average and only Olympic Industries limited (Tk. 104,172.50 lakh) included in this category. Another category includes two companies namely APEX Food limited (Tk. 21,421.66 lakh) and “PRAN” Agricultural Marketing Co. Ltd (Tk. 21,194.64 lakh) where company’s average revenue and industry average revenue almost same. In the third category, all remaining companies show lower revenue as compared to industry average. In case of net profit, it is clear that except Olympic Industries limited all remaining companies have a net profit of below industry average. The average net profit of Olympic Industries Ltd. is Tk. 14,537.70 (lakh), which is nearly 6.87 times greater than industry average of net profit. Now by critically analyzing different cost from the table it is found that Olympic industries Ltd. incurred very high promotional and non- promotional cost that is total selling & distribution costs as compared to other companies. This company makes a promotional cost of 6.05 times, non – promotional cost of 6.18 times and selling & distribution cost of 6.12 times of industry average. Among the remaining companies only PRAN incurred the marketing cost nearly industry average and cost of all other companies are significantly low in comparing to industry. Moreover if we look at the cost of GEMINI Sea Food Limited and Fine Foods, we see they are standing in the bottom line.

To analyze the relation between cost, revenue and profit the following table is prepared. The table mainly presents the percentage of average promotional cost, average non- promotional cost and average selling & distribution cost by taking average revenue and average profit as the basis of percentages.

**Table- 3:** Status of Financial Performance of Food Industry: context of percentage of Average cost in terms of Average Revenue and of Average Net Profit(Figure in lakh)

Name of Companies	Promotional Cost		Non-Promotional Cost		Selling & Distribution Cost	
	To revenue (%)	To net profit (%)	To revenue (%)	To net Profit (%)	To revenue (%)	To net Profit (%)
Olympic Industries Ltd.	5.36	38.44	6.05	43.33	11.41	81.77
APEX Food Ltd.	1.67	133.38	3.30	263.30	4.97	396.68
Fine Foods Ltd.	1.47	9.21	4.33	27.17	5.81	36.43
Fu-wangFoods Ltd.	0.53	4.91	2.71	25.33	3.23	30.24
“PRAN” Agricultural Marketing Co. Ltd	5.43	211.05	3.23	125.72	8.66	336.77
Rangpur Dairy and Food Products Ltd.	1.68	22.60	2.70	36.20	4.38	58.80
BEACH Hatchery Ltd.	15.38	121.10	8.28	65.26	23.66	186.36
GEMINI Seafood Ltd.	0.04	2.62	0.09	5.92	0.13	8.54
Industry Average	3.95	67.91	3.84	74.03	7.78	141.95

When we express average promotional cost as a percentage of average revenue, the above table shows that BEACH Hatchery Ltd. standing in the highest position and GEMINI SeaFood Ltd. is in the lowest position. By comparing these percentages with industry average, it is clear that except BEACH Hatchery Ltd, all the companies are lower than industry average. But Olympic Industries Ltd and “PRAN” Agricultural Marketing Co. Ltd are very close to industry result, whereas other companies are very far from industry average. Almost same result obtained from percentage of average selling and distribution cost to average revenue, where BEACH Hatchery Ltd. and GEMINI Seafood Ltd. are in the highest and lowest position respectively. Among the

remaining company APEX Food Ltd. and “PRAN” Agricultural Marketing Co. Ltd have higher and the other four companies have lower percentage of revenue in comparison to industry average.

Now we consider net profit as a basis to analysis the selling and distribution cost. There is a great fluctuation among the companies. APEX Food Ltd., “PRAN” Agricultural Marketing Co. Ltd and BEACH Hatchery Ltd have very high percentage of selling and distribution cost to its net profit and their position is above industry average. On the other hand there are five companies namely Olympic Industries Ltd., Fine Foods Ltd., Fu- wang Foods Ltd., Rangpur Dairy and Food Products Ltd. and GEMINI Seafood Ltd. which not only have a lower percentage than industry average but also their results are significantly poor. The percentage of promotional cost of APEX Food Ltd., “PRAN” Agricultural Marketing Co. Ltd and BEACH Hatchery Ltd. of their respective net profit is very high as compared to industry average. All the remaining companies are incurring the cost below industry.

It is revealed from an analysis of the table that, BEACH Hatchery Limited incurred more Promotion cost and selling and distribution cost in terms of revenue (15.38% and 23.66% respectively), and PRAN Agricultural Marketing Co. Ltd and APEX Food limited incurred more Promotion cost and selling and distribution cost in terms of Net profit (211.05% and 396.68% respectively) than other companies.

**VIII.I. Regression and Correlation Analysis of Selling and Distribution Cost & Revenue**

In business world, marketing is considered as vital business activities without which no business can survive in the competitive environment, because the marketing activities mainly create and expand customers and enhance sales revenue. So revenue is dependent on marketing activities that is marketing cost or selling & distribution cost. But this dependence varies from product to product, industry to industry, country to country. Now in this paper we try to find out the extent to which sales revenue is depended on selling and distribution cost. With a view to do so the following table is prepared by calculating correlation coefficient of revenue and marketing cost

**Table 4: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	5282.396	2031.768		2.600	.041
	Selling	8.368	.476	.990	17.592	.000

• Dependent Variable: Revenue

The above tables show that, the revenue and selling and distribution cost is highly correlated. The relationship between selling & distribution cost and revenue is strongly positive. This relationship also implies that, 99.00% of sales revenue is affected by selling & distribution cost. Constant of Regression Equation (a) = 5282.39 and Slope of Regression Equation (b) = 8.368. It indicates that, if a company increases Tk. 1 in selling & distribution cost, sales revenue will increase by Tk. 8.368.

In this regard an attempt was made to show what would be position on revenue of companies if they spend same amount of selling and distribution cost including advertisement costs. i. e. impact of selling and distribution cost on revenue. Table below shows the picture.

**Table 5: (Figure in lakh)**

Companies	Average Selling & distribution Cost (x)	Average Revenue (y)	Estimated Revenue Y = 5282.396 + 8.368x	Change in Revenue
Olympic Industries Limited	11887.28	104172.50	104,755.2	582.655
APEX Food Limited	1064.89	21421.66	14,193.4	-7228.26
Fine Foods Limited	21.05	362.14	5,458.542	5096.402
Fu-wang Foods Limited	256.96	7937.91	7,432.637	-505.273
PRAN Agricultural Marketing Co. Ltd	1835.62	21194.64	20,642.86	-551.776
Rangpur Dairy and Food Products Limited	214.59	4896.05	7,078.085	2182.035
BEACH Hatchery Limited	237.68	1004.40	7,271.302	6266.902
GEMINI SeaFood Limited	14.76	11241.66	5,405.908	-5835.75
Industry Average		21528.87	21529.74	0.86618

From the above table we observed three different scenarios as to natures of dependence of revenue on selling & distribution cost. Firstly, estimated revenues of BEACH Hatchery Limited, Fine Foods Limited and Rangpur Dairy And Food Products Limited are largely depended on selling & distribution costs because estimated revenue of these three company will increase by Tk. 6,266.902 (in lakh), Tk. 5,096.402 (in lakh) and Tk. 2,182.035 (in lakh) respectively. Secondly, estimated revenue of Olympic Industries Ltd is not largely depended on selling & distribution costs. It may cause economy of scale of sales and very strong marketing

channel. Thirdly, estimated revenues of APEX Food Limited, Fu-Wang Foods Ltd., “PRAN” Agricultural Marketing Co. Ltd and GEMINI Sea Food Limited are lower than actual revenue. In this backdrop a regression analysis was restarted as shown below.

**VIII.II. Regression and Correlation Analysis of Promotional Cost & Revenue**

**Table 6: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	5267.793	2468.669		2.134	.077
Promotional cost	17.614	1.221	.986	14.429	.000

a. Dependent Variable: Revenue

The above tables revealed that, promotional cost and revenue is strongly correlated. The relationship between promotional cost and revenue is high. This relationship also implies that, 98.60 % of revenue is affected by promotional cost.

In this context a further attempt has made to show what would be the impact on revenue, if sample enterprises spend same amount of promotional cost as before. The result is shown in the following table:

**Table 7: (Figure in lakh)**

Companies	Average Promotional cost (x)	Average Revenue (y)	Estimated Revenue $Y = 5267.793 + 17.614x$	Change in Revenue
Olympic Industries Limited	5588.60	104,172.50	103705.4	-467.107
APEX Food Limited	358.05	21,421.66	11574.49	-9847.17
Fine Foods Limited	5.32	362.14	5361.499	4999.359
Fu-wangFoods Limited	41.72	7937.91	6002.649	-1935.26
“PRAN” Agricultural Marketing Co. Ltd	1150.37	21,194.64	25530.41	4335.77
Rangpur Dairy and Food Products Limited	82.47	4,896.05	6720.42	1824.37
BEACH Hatchery Limited	154.45	1,004.40	7988.275	6983.875
GEMINI SeaFood Limited	4.54	11,241.66	5347.761	-5893.9
Industry Average		21,528.87	21,528.86	-0.00834

The above table reveals that, the relationship between promotional cost and revenues is strongly correlated ( $r = 0.986$ ). The slope of the regression equation is  $b = 17.614$ . It indicates that, if a company increases in Tk. 1 in advertisement & promotional cost, the sales revenue will increase by Tk. 17.614. As a result, three types of dependency of revenue on promotional cost are observed. Firstly, estimated revenue of BEACH Hatchery Limited, Fine Foods Limited and “PRAN” Agricultural Marketing Co. Ltd are largely depended on promotional costs. Because estimated revenue of these companies will increase by Tk. 6,983.875 (in lakh), Tk. 4,999.359 (in lakh) and Tk. 4,335.770 lakh respectively as a direct influence of this cost. Secondly, estimated revenue of Rangpur Dairy And Food Products Limited is not largely depended on promotional cost. Thirdly, estimated revenue of Olympic Industries limited, APEX Food Limited, Fu-wang foods limited and GEMINI Sea Food Limited observed to be lower than actual revenue. Newly setup cost of advertisement & promotional channels and fixed advertisement & promotional cost incurred at the moment are known to be the principal causes for this situation. In this connection regression analysis was resorted to. Following table

**VIII.III. Regression and Correlation Analysis of Non - Promotional Cost & Revenue**

**Table 8: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	5412.968	1974.754		2.741	.034
NPC	15.825	.875	.991	18.078	.000

a. Dependent Variable: Revenue

The result of this table implies that 99.1% of revenue is affected by non-promotional cost. Although it's a high result, promotional cost is more strongly related with sales revenue. In this context a further attempt was to show what would be the impact on revenue, if sample enterprises spend same amount of non - promotional cost. The result is shown in the following table: (Figure in lakh)



**Table 9:**

Companies	Average Non - Promotional cost (x)	Average Revenue (y)	Estimated Revenue $Y = 5,412.968 + 15.825x$	Change in Revenue
Olympic Industries Limited	6,298.68	104,172.50	105,089.58	917.08
APEX Food Limited	706.84	21,421.66	16,598.71	-4,822.95
Fine Foods Limited	15.70	362.14	5,661.42	5,299.28
Fu-wangFoods Limited	215.24	7937.91	8,819.14	881.23
“PRAN” Agricultural Marketing Co. Ltd	685.25	21,194.64	16,257.05	-4,937.59
Rangpur Dairy and Food Products Limited	132.13	4,896.05	7,503.93	2,607.88
BEACH Hatchery Limited	83.23	1,004.40	6,730.08	5,725.68
GEMINI Sea Food Limited	10.24	11,241.66	5,575.02	-5,666.64
Industry Average		21,528.87	21,529.37	0.495594

By comparing estimated revenue with actual revenue it is clear that except APEX Food Limited “PRAN” Agricultural Marketing Co. Ltd and GEMINI Sea Food Limited, all the companies can generate more revenue by following regression line between non promotional cost and revenue.

**VIII.IV. Regression and Correlation Analysis of Net Profit and Selling and Distribution Cost**

**Table 10:Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-257.731	314.654		-.819	.444
Selling	1.222	.074	.989	16.594	.000

a. Dependent Variable: Net Profit

The above tables revealed that, selling & distribution cost and net profit is strongly correlated. The relationship between selling & distribution cost and profit is high. This relationship also implies that, 98.90% of net profit is affected by selling & distribution cost. In this regard the following table is prepared to find out the impact of selling and distribution cost on net profit.(Figure in lakh)

**Table 11:**

Companies	Average selling & distribution cost (x)	Average Net Profit (y)	Estimated Net Profit $Y = -257.731 + 1.222x$	Change in Net Profit
Olympic Industries Limited	11887.28	14537.70	14268.53	-269.175
APEX Food Limited	1064.89	268.45	1043.565	775.1146
Fine Foods Limited	21.05	57.78	-232.008	-289.788
Fu-wangFoods Limited	256.96	849.69	56.27412	-793.416
Pran Agricultural Marketing Co. Ltd	1835.62	545.07	1985.397	1440.327
Rangpur Dairy and Food Products Ltd	214.59	364.94	4.49798	-360.442
BEACH Hatchery Limited	237.68	127.54	32.71396	-94.826
GEMINI Sea Food Limited	14.76	173.04	-239.694	-412.734
Industry Average		2115.526	2114.909	-0.61747

It has been revealed that, the relationship between selling & distribution cost and net profit is significantly correlated (r = 0.989). The slope of the regression equation is b = 1.222. It indicates that, if a company increases Tk. 1 in selling & distribution cost, net profit will increase by Tk. 1.222. As a result, two types of dependence of net profit on selling & distribution cost have been observed among the sample units. Firstly, estimated net profits of “PRAN” Agricultural Marketing Co. Ltd and APEX Food limited are found to largely depend on marketing cost. Because estimated revenues of them may increase by Tk.1440.327 lakh and 775.1146 lakh respectively. The estimated change will be 264.24%, and 288.74% respectively. It may be a cause of substantial growth of food industry in Bangladesh. Secondly, estimated net profit of all the remaining companies is lower than actual.

Against this backdrop of evaluation of marketing cost with reference to revenue and profit, now an attempt is made to evaluate advertisement and promotion costs in the same angle. In this context table below shows evaluation results thereof.

**VIII.V. Regression and Correlation Analysis of Net Profit and Promotional cost**

**Table 12: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	-252.517	410.924		-.615	.561
Promotional Cost	2.565	.203	.982	12.623	.000

a. Dependent Variable: Net profit

This relationship implies that, 98.20 % of net profit is affected by selling & distribution cost and remaining 1.80% is affected by other factor. In this context a further attempt was in this regard to show what would be the impact on net profit, if sample enterprises spend same amount of promotional costs, the result is shown in the following table:

**Table 13: (Figure in lakh)**

Companies	Average Promotional cost (x)	Average Net Profit (y)	Estimated Net Profit $Y = -252.517 + 2.565x$	Change in Net Profit
Olympic Industries Limited	5588.60	14537.70	14082.24	-455.458
APEX Food Limited	358.05	268.45	665.8813	397.4313
Fine Foods Limited	5.32	57.78	-238.871	-296.651
Fu-wang Foods Limited	41.72	849.69	-145.505	-995.195
PRAN Agricultural Marketing Co. Ltd	1150.37	545.07	2698.182	2153.112
Rangpur Dairy and Food Products Ltd.	82.47	364.94	-40.9815	-405.921
BEACH Hatchery Limited	154.45	127.54	143.6473	16.10725
GEMINI Sea Food Limited	4.54	173.04	-240.872	-413.912
Industry Average		2115.526	2115.465	-0.0609

It is revealed from the table that, the relationship between promotional cost including advertising cost and net profit is significant ( $r = 0.982$ ). The slope of the regression equation is,  $b = 2.565$ . It indicates that, if a company increases Tk. 1 in promotional cost, net profit will increase by Tk. 2.565. This table shows that, estimated net profit of “PRAN” Agricultural Marketing Co. Ltd and APEX Food limited are largely depended on advertisement & promotional cost. Estimated net profit of BEACH Hatchery Limited is insignificantly depended on advertisement & promotional cost. The estimated net profit of BEACH Hatchery Limited will increase by Tk. 16.107 (in lakh). It is also seen that change will occur only by 12.629 %. Again the change in net profits of remaining companies is known to be negative. It may be due to newly setup marketing channel and fixed advertisement & promotional cost incurred at that time.

**VIII.VI. Regression and Correlation Analysis of Net Profit and Non – promotional cost**

**Table 14: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
Constant)	-245.131	262.930		-.932	.387
NPC	2.318	.117	.993	19.888	.000

a. Dependent Variable: Profit

The above tables revealed that, non - promotional cost and net profit is strongly correlated. In order to find out the impact of non-promotional cost on net profit, the following table is prepared:

**Table 15: (Figure in lakh)**

Companies	Average Non - Promotional cost(x)	Average Net Profit (y)	Estimated Net Profit $Y = -245.131 + 2.318x$	Change in Net Profit
Olympic Industries Limited	6,298.68	14,537.70	14,355.21	-182.491
APEX Food Limited	706.84	268.45	1,393.324	1,124.874
Fine Foods Limited	15.70	57.78	-208.738	-266.518
Fu-wang Foods Limited	215.24	849.69	253.7953	-595.895
PRAN Agricultural Marketing Co. Ltd	685.25	545.07	1,343.279	798.2085
Rangpur Dairy and Food Products Ltd	132.13	364.94	61.14634	-303.794
BEACH Hatchery Limited	83.23	127.54	-52.2039	-179.744
GEMINI Sea Food Limited	10.24	173.04	-221.395	-394.435
Industry Average		2,115.526	2,115.552	0.026072

The slope of the regression equation is  $b = 2.318$ . It indicates that, if a company increases in Tk. 1 in non - promotional cost, the sales revenue will increase by Tk. 2.318. As a result, we find that non – promotional cost has positive influence on net profit in only Fine Foods Limited and “PRAN” Agricultural Marketing Co. Ltd. Rest of companies showed negative change in net profit.

### IX. Results and Recommendation

There are following results found from the above analysis of our two dependent variables:

Revenues:

Total Selling and distribution cost	Regression line: $Y = 5,282.96 + 8.368x$
	Coefficient of correlation: 0.990
Promotional cost	Regression line: $Y = 5,267.793 + 17.614x$
	Coefficient of correlation: 0.986
Non – promotional cost	Regression line: $Y = 5,412.968 + 15.825x$
	Coefficient of correlation: 0.991

Net profit:

Total Selling and distribution cost	Regression line: $Y = - 257.731 + 1.222x$
	Coefficient of correlation: 0.989
Promotional cost	Regression line: $Y = - 252.517 + 2.565x$
	Coefficient of correlation: 0.982
Non – promotional cost	Regression line: $Y = - 245.131 + 2.318x$
	Coefficient of correlation: 0.993

From the above table, we have seen that the revenue will increase Tk. 8.368 and 15.825 with respect to the increase in selling and distribution cost and non – promotional cost respectively. On the other hand, revenue will increase by Tk. 17.614 with due to increase in promotional cost items which is greater than that of selling and distribution cost and non-promotional cost. It is also seen that net profit will increase Tk. 1.222, 2.318 and Tk. 2.565 with due to increase in selling & distribution cost, non – promotional cost and promotional cost respectively.

### X. Evaluation of the Findings

In this study the relation of selling and distribution cost with revenue and profit is very high. Their correlations are 0.990 and 0.989 respectively. In this way promotional cost also strongly related with revenue and profit which can express by correlation of 0.986 and 0.982 respectively. The relationship also high of non-promotional cost with revenue and profit and their correlations are 0.991 and 0.993 respectively. The dependency of sales revenues and net profit of food industry on selling & distribution cost or marketing cost is represented by  $b = 8.368$  and  $b = 1.222$  respectively. It means that, if food companies spend additional one taka on marketing cost, the company will generate revenue of Tk. 8.368 and net profit of Tk. 1.222 respectively. Dependency of sales revenues and net profit of food industry on advertisement and promotional cost are shown by  $b = 17.614$ ,  $b = 2.565$  respectively. It also means that, if food companies incur additional one taka on promotional cost, they will generate revenue of Tk. 17.614 and net profit of Tk. 2.565 respectively. Revenue and net profit will increase by Tk. 15.825 and Tk. 2.318 respectively due to change in non – promotional cost.

After verification of the above data it seen that, food companies can generate more revenue and operating profit by spending more promotional cost. Because, the positive change in revenue on promotional cost (17.614) is greater than that of selling and distribution cost (8.368) and non-promotional cost (15.825). This change in revenue can be significantly attributable to promotional cost as its role is greater than that of selling and distribution cost. Exactly in the same way promotional cost has great contribution in the increase of net profit.

### XI. Conclusion

Marketing communication are the means by which firms attempt to inform, persuade, and remind consumer – directly or indirectly – about the products and brands they sell. The marketing costs, which are incurred for persuasive communication (advertising, sales promotion, events and experiences, public relations and publicity, direct marketing, interactive marketing, word of mouth marketing and personal selling) attempt to change or reinforce ones’ prior attitude, inform customers about products, persuades customers to purchase the product. All such related costs are called promotional costs as a part of selling and distribution cost or marketing costs. The study is based on secondary data collected with reference to the selling and distribution costs promotional costs, non-promotional cost, sales revenue and net profit of 8 listed large and nation – wide marketing operational food companies working in Bangladesh. The data and related information have been collected from annual reports and websites of respective food companies. From the evaluation of the findings of the study, it is seen that, if the food industry incurs Tk. 1 more on selling and distribution cost it may generate Tk. 8.368 more of revenue and Tk. 1.222 more of net profit and if the food industry incurs Tk. 1 more on

promotional cost, it may generate Tk. 17.614 more of revenue and Tk. 2.565 more of net profit. It is also ascertained that, the food companies will be benefited by incurring Tk. 1 in promotional cost than inselling and distribution cost by Tk. 9.246 in revenue and Tk. 1.343 in net profit. Through this process the food industry can greatly improve their operation and strength in Bangladesh and such scope remain much for future. As food is the basic human need and many people of our country are so poor that they even can't reach to some inexpensive product, the companies should set the price of food product by considering income level of our general people. In this regard a conscious costing method will be helpful for the companies to generate more profit without increasing unnecessary cost.

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