

Value Chain Analysis of Processed Poultry Products (Egg and Meat) in Some Selected Areas of Bangladesh

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Abstract Knowing the existing nature of processed poultry and poultry products marketing system, from producer to consumer via value chain were considered among two mega Districts Dhaka and Chittagong as a respondent. A total of 123 respondent from each districts in 8 different categories of stakeholders those were directly related to this business namely 10 broiler, 10 layer farmers; 10 Chain shop; 20 Fast food shops; 15 Chinese restaurants; 20 normal Hotel; 15 wet market Buyer; 20 Consumer and 3 Poultry product processing industries. All actors were randomly selected towards collection of relevant information following pretested questionnaire. Simple statistical tools were applied for analysis of collected data. Surveyed data analysis clearly revealed that for achieving margin of profit, average value addition for farmers cases 13% and 16.5% respectively for meat/kg and eggs/no; for whole seller/Aratdar added extra value 5.09% and 0.28%; and for retailer 7% and 8% level and for whole seller to consumer's added extra value near about 7% and 5.5% and for meat and egg finally processed poultry meat 30% and further processed meat 125% respectively. During value addition consideration each and every stake holder all production cost factor along with other management activities costing were considered before marketed to one stakeholder or to others. For item-wise of value added poultry meat and eggs were found in different number and names. Average 5-6 no. meat type and 3-4 no egg type for hotel for Chinese restaurant 17-18 no meat products and 8-9 no. egg products, for fast food shop cases 28-30 no. meat products and 6-8 egg products; for chain super market 40-45 no. meat products and 7-8 no. egg products;. The total value added was found higher in Hotel especially for meat cases. Production cost for open market was found only 6.5% whereas for structured or processed market tends to estimate 40.5% because of manages mental, transportation and publicity cost incurs involvement. To flourish or gear-up of processed or further processed poultry & poultry products business in our country profitably need to be set up a well-structured marketing system in replace of wet market. Ensuring available safe and quality poultry and poultry derived food products to meet consumers demand, value chain actors especially entrepreneur public private partnership initiative need to come forward to run processed or further processed business to a great extend.

Keywords: value chain, meat, egg, processed and further processed poultry products

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1. Introduction

In our daily life we need to take meat for getting animal protein. So producing a big quantity of eggs and meat as a animal quality protein plays a significant role to our national health strategy as well as economy. Poultry helps the livelihood as well as contribute towards improving the family diet with eggs and meat [1] Poultry and poultry products become as a cheap source of animal protein in terms of meat and eggs [16]. Poultry meat alone contributes 37% of the total meat production in the country and 22 to 27% of total animal protein [1,6]. Egg production has been increased during last 10 years; Poultry meat production has been doubled. It contributes-poverty reduction, new employment generation, women empowerment and strengthened nutritional status. The

demand for food in Bangladesh and around the world is changing rapidly. Driven by economic growth, rising incomes, and urbanization, demand is shifting away from traditional staples toward high-value food commodities. In recent years influenced by changes in consumer demand and rapid technological and institutional intervention the structure of agribusiness has changed rapidly or dramatically flourished and its performance has been highly dynamic. High value agricultural commodities include fruits, vegetables, spices, fish, and livestock products, many of them processed before reaching the market. There are about thousands of fast food and hotel; 45 premium Chinese restaurants; 27 chain super chain shop; and 4-5 poultry processors are doing their business in our country especially in metropolitan city [21]. Value addition means economically add value to a product by changing its current place, time and from one set of characteristics to other characteristics that are more

preferred in the market place. Poultry industry adds more values than any other industries. Food industries have grown up based on chicken that produce soups, nuggets, sausages and other products in accordance with the changing preferences of the customers. Some of these local poultry-based and value-added products have found some export markets as well. This represents an enormous opportunity for food producers, processors, and sellers. Owing to the greater labour intensity characteristic of high value agricultural production provides an opportunity to generate rural employment and raise rural incomes make an important strategic priority for those seeking to reduce poverty in the country. Value chain actor involved in marketing make a better profit than actors involved in operational and managerial process of broiler farming in the country(9). Most of the poultry industries in Bangladesh are medium in size having unorganized supply chain network with lack of coordination among stakeholders. Access to timely updated and reliable market information and to intervention of new technologies will act as an indicator for determining the competitiveness and profitability of agro-businesses. Applied market based research is needed to build an effective knowledge base that is available to investors who participate and compete in high-value agro-business. High-value agriculture requires technical skills and knowledge not generally associated with more traditional production, making human capital development and knowledge management important elements in the transition. There is a lack of reliable data on most high-value agricultural commodities that deprives policy makers, planners, and investors of critical information. Systematically benchmarking and monitoring this information will enable planners to identify, document, and scale-up best practices in high value agriculture and related to value chains. This paper was tried to in depth scenario especially value added poultry and poultry products across to mega city of the country with a view to determine of value addition level persists under processed poultry or further processed poultry products (meat and egg) from raw to marketing stage and also to find out the constraints and prospects of this sector as overview that helps to formulate policy guideline for poultry products (meat and egg) in a sustainable marketing system develop throughout the country.

2. Material and Methods

Assessing the margin of value addition practiced from small and medium scale broiler and layer farmers via different market mobilizing actor to consumers levels. Two Districts (Dhaka and Chittagong) was considered to meet up the research objectives. A random survey was performed with the help of constructed and pretested questionnaire following face to face interview to collect relevant information from different stakeholder those are directly involved to this business. A Purposive sample technique was also applied for selecting the respondents to full fill the desired data for analysis. Farmers to consumers all were interviewed with a view to collection of necessary data and information following semi-structured interview schedule. Before starting the interview each of the respondent was given a brief

description about the nature and purpose the study. For representing data from all market actors taking 10 broiler, 10 layer farmers, 10 chain shop, 20 fast food shops, 15chinese restaurants, 20 hotels, 15 wet marketer/buyer, 20 consumers and 3 poultry product processing industries were randomly selected as respondent for information collection of each districts. Samples distribution in study areas is given in Table 1.

Table 1. Distribution of samples in the study area (Source: Field survey, 2014)

Sample categories	Study area		Sample size
	Dhaka	Chittagong	
Broiler farmer	10	10	20
Layer farmer	10	10	20
Chain shop	10	10	20
Fast food shops	20	20	40
Chinese restaurants	15	15	30
Hotel	20	20	40
Marketer/buyer	15	15	30
Consumers	20	20	40
Processing plant	3	3	6
Total No.	123	123	246

This study is an exploratory one. For research purpose, a survey was conducted on a small sample of the owners and marketers of the poultry industry as well as consumers. Data have been presented in descriptive, tabulators, graphics for better and easy analysis simple average and percentage techniques were used to analyze for their simplicity and easiness to understand.

Secondary Information was collected from company database, relevant papers and documents provided by the Marketing institution, publications of different organizations, daily newspaper, internet, and related market based company websites.

After collecting the necessary data and information from field survey, were classified, edited and coded. For analysing the data a combination of tabular and mathematical tools were used to achieve the objective and to get the meaningful results. Graphical representation and descriptive analysis such as sum, average and percentage were deriving and calculate to present the results for reporting.

3. Results and Discussion

Current study was conducted at Dhaka and Chittagong district addressing different actors involved to poultry business from farm level to consumer either in the form of live or processed or further processed poultry products that were explored as the value chain of poultry and processed poultry products. Value chain analysis is the profit and cost effectiveness analysis of an enterprise. Profit is the difference between the total value of the products and total cost of performing the activities. The sequences of activities from production down to consumers and classified as value chain is in this study; Producer value chain; Marketing value chain and Consumers value chain.

A) Producer (at farm) level value chain

Under this group covers males, females and children within the farm family and performs production of birds and egg. The farmers/producer production cost was

calculated to broiler meat and eggs based on variable cost incurs cost of day-old chicks, feed, bedding materials, vaccine, medicine, electricity etc. Surveyed result revealed that primary producer added more value about 13% for meat and 16% for egg over production cost while dealing with whole seller (Figure 1).

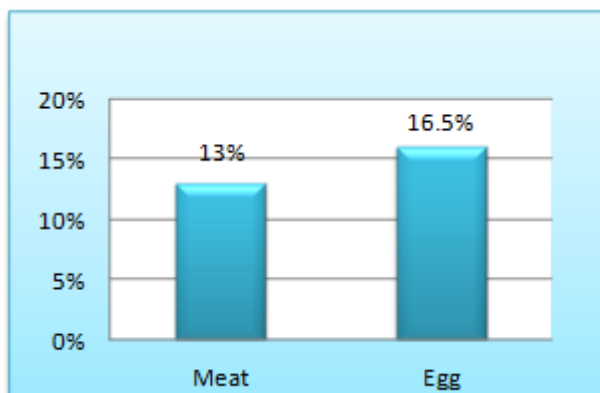


Figure 1. Value addition of meat and egg at producer level

In connection with market based field study reported by Kalidas 2011 that for broiler meat production at farmers level average value addition accounts about 20%. Farmers produce poultry and poultry products and sold to traders, collectors or whole sellers consider profit margin over

production cost as value addition. Ethics and attitude of the actors involved in supply, production and marketing chains remarkably influence price and margin of value addition of product. Table-2 showed at farmer’s level or farm gate level for Dhaka division found poultry meat added 11% value and 15% value addition for egg cases estimated over production cost. Begum et al., 2010 reported that production costs of broiler was such as day old chick, feed housing, labour, vaccine, medicine, fuel, electricity, litter and overhead costs. During value addition calculation author also considered chick feed, medicine, litter, house, transport, fuel, labour, credit interest cost also, Net profit is calculated excluding all variable cost making value addition over production cost in all cases even farmers sold to urban assembler or whole seller, For Chittagong districts value addition price was little bit higher compare to Dhaka for meat selling price was 17.25Tk/kg and for egg 1.07 Tk/egg over production cost accordingly.

B) Different stakeholder Market level value chain

Following actors are directly and indirectly involved to marketed and value added of their product and their activities were found in market such a way considering value addition or profit margin. Value addition pattern of the poultry meat and egg at marketing under study areas is given Table 2.

Table 2. Value addition of the poultry meat and egg at marketing estimating value chain for Dhaka and Chittagong Division

Location	Products type	Production cost (Tk)	Producer level price (Tk)	Whole sealer price (Tk)	Retail price at market (Tk)	Consumer price (TK)	Value addition at producer level		Value addition at whole sealer level		Value addition at retailer level		Value addition at consumer level	
							Value addition (TK)	% Value addition	Value addition (TK)	% Value addition	Value addition (TK)	% Value addition	Value addition (TK)	% Value addition
							Dhaka	Meat	110.0	122.10	127.0	135.89	144.0	12.10
Chittagong	115.0	132.25	137.54	147.16	158.9	17.25	15.0		5.29	5.0	9.62	7.0	9.62	8.0
Average	112.5	116.18	132.27	141.52	151.45	14.67	13.0		5.09	4.5	9.25	7.0	8.86	7.0
Dhaka	Egg	5.75	6.67	6.87	7.41	7.78	0.92	16.0	0.20	3.0	0.54	8.0	0.37	5.0
Chittagong		6.30	7.37	7.73	8.19	8.68	1.07	17.0	0.36	5.0	0.46	8.0	0.49	6.0
Average		6.025	7.02	7.30	7.80	8.23	0.99	16.5	0.28	4.0	0.50	8.0	0.43	5.5

Village collectors / Urban assemblers: This group of chain actors has immediate contact with farmers who supply bird and egg to the market. They buy egg and bird from local market and resell urban assemblers and whole sellers for getting profit. These groups are also important performed as actors in the market value chain by transacting the product from farmers and village collectors to whole sellers and consumers in the local and regional markets or travel to nearby local markets to buy birds and egg by competing with village collectors. They have better capital and most of them are full time traders than village collectors. Even these assemblers supply their birds and egg for hotels and restaurants and retailers and whole sellers in city and regional markets. Village collectors and urban assemblers were not considered as actor under this study.

Whole sellers: Whole sellers in village poultry marketing chain refer to those traders who sell large

quantities of birds and egg to other traders via brokers or direct communication. In egg marketing chain whole sellers buy egg from urban assemblers and village collectors from local and regional markets and sell in bulk for shops, Hotels and Restaurants in local and regional markets. They are full time traders and travel to different areas to buy egg. These traders have strong financial resource and better information on the price and supply of egg in the source and destination markets. In bird marketing chain whole sellers are conducting important marketing functions by linking the town and regional markets with the terminal market. Table-2 showed whole seller for Dhaka division poultry meat cases 4.9 Tk/kg over collection cost and added 4% value addition and for egg cases found 0.20Tk/egg over collection cost and added 3% value addition. During value addition they consider feed, medicine, litter, house, transport, shop rent, fuel labour, interest cost also, For Chittagong districts

value addition price was little bit higher compare to Dhaka for meat was 5.29Tk/kg and for egg was found 0.36 Tk/egg over collection cost and value addition rate was for meat 5% and 5% found accordingly.

Retailers: Retailers in bird and egg marketing chain are those actors who perform the last marketing function by linking consumers with other traders and/or producers. The number of these traders varies according to the demand and supply condition. Table 2 showed whole seller for Dhaka division poultry meat cases 8.89 Tk/kg over collection cost and added 7% value addition and for egg cases found 0.54Tk/egg over collection cost and added 8% value addition. During value addition calculation considered feed, medicine, litter, house, transport, fuel labour, interest cost also, excluding all mentioned cost net profit is considered as value addition over collection and other management cost sold to urban assembler or whole seller, For Chittagong districts value addition price was found a bit higher compare to Dhaka for meat selling price is 9.62Tk/kg and for egg 0.046Tk/egg over management and collection cost where as value addition rate was for meat 7% and 8% also found respectively. In live market consumer bought their product through whole sellers and retailers. The value addition percentage for meat and egg at live market of survey area is shown in Figure 2.

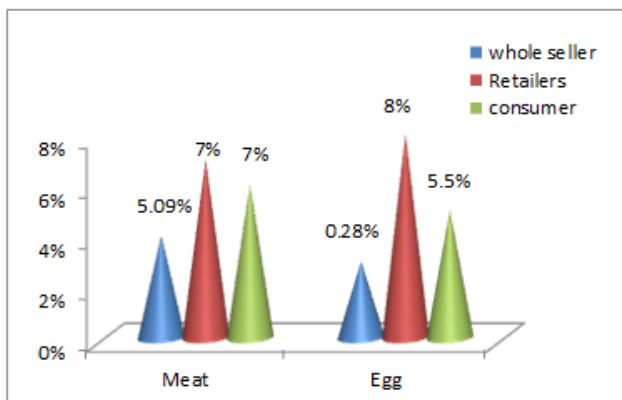


Figure 2. Value addition of meat and egg at live market

C) Consumers level value chain

The demand pattern, sociocultural distribution and geographic location can have influence on the entire marketing efficiency parameters along the market chain. Consumers are the final end points and are the ultimate goal of the production and marketing process. Value addition of live broilers and egg in term of percentage starting from production down to end consumers in the study areas are shown in table-2 showed that whole seller for Dhaka division poultry meat cases 8.11 Tk/kg and egg cases found 0.37Tk/egg over production cost added 6% and 5% value for meat and egg cases as sold to urban assembler or whole seller, For Chittagong districts value addition price is littlebit hire compare to Dhaka for meat selling price is 9.625Tk/kg and for egg 0.49 Tk/egg over production and over production cost as value addition rate was for meat 8% and 6% found respectively. Kalidas (9) reported based on his research findings that for broiler meat value addition accounted 32% from producer to consumer level. The degree of variation was observed from location to location. The variation was mainly due to demand and availability

of inputs and distance and communication facilities of the area concerned. It was also evident that all together both for Dhaka and Chittagong division 31.5% value addition (taka 29.01) had been estimated per kg of broiler starting from production down to consumers and for egg 34 % value addition (taka 2.2) that is mated with kalidas report. Data also revealed that for meat and egg average value addition at production level was 13% and 16.5% and at market level 18.25% and 17.5% respectively.

3.1. Processed Poultry Products Market Level Value Chain

The number of actors in this category is very limited and birds are supplied to consumers in the form of processing or further processing adding market profit to the product. Surveyed data covers from chain shop, fast food shops, Chinese restaurants, hotels of each selected district (Dhaka and Chittagong) including few renowned restaurants, fast food shops and chain super shops namely KFC, CP outlet, Luncheon, Star Kabab, Meena Bazaar Sopno, Agora etc. Analyzed value addition of processed poultry products data have been presented in Fig-3. showed whole seller for Dhaka and Chittagong division for first food shop, hotel, chinese and chain super shop poultry meat cases value addition accounted 45%, 40%; 52% and 25% over production cost as processed cost and for egg cases found 25% 30% 35% and 15% over production cost respectively.

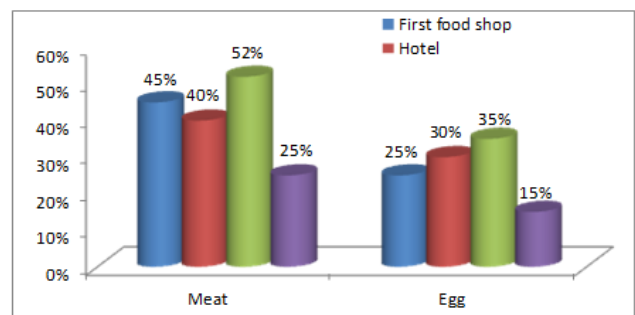


Figure 3. Value addition at processed market

During value addition consider raw meat or egg along with spices, utility, labor, tax. AC operated charge, place rent; transport, inspection cost, quality assurance cost, advertisement and packaging, cost etc. All these cost were accumulated and regarded as production cost. To get profit from business excluding all cost from production cost to selling cost as value added cost. Every actors make profit over selling or production cost. In connection with this a study conducted by SEDF (2005) was evident that parent stock farms provided 8% commission to local agents and local agent make profit 21% by selling of chicks and 8% from commission for feed marketing whole seller make profit 1.5 to 2.5tk/kg addition to commission feed manufacturer provide 3% commission to local feed sellers and they make overall 11% profit (8% sell+3% commission).

3.2. Value Addition of Meat Processors

In study area Figure 4 showed for Dhaka and Chittagong Division processed and further processed of processing unit average value addition for poultry meat

was estimated to 30% and 125% respectively over production cost. During consider value addition of raw meat or egg, along with spices, utility, labour, tax. Ac, rent, transport, inspection, advertisement and packaging all management, cost etc. All these cost are accumulated and regarded as production cost.

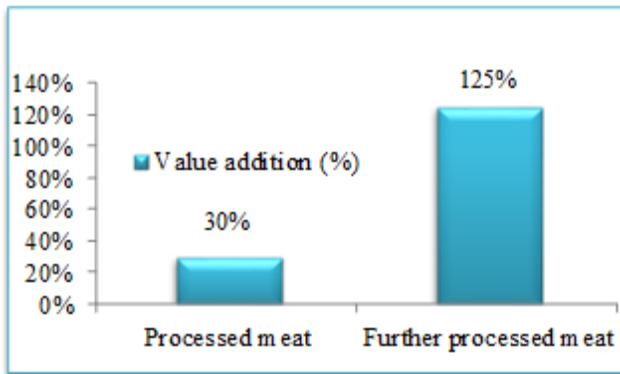


Figure 4. Value addition of meat by processors

3.3. Wet Market vs Processed Market Value Addition:

In Bangladesh, processed markets are not so popular incompatible to wet market. Research results showed (Figure 5) that value addition by processed market was much higher (40.5%) than wet market (6.5%).

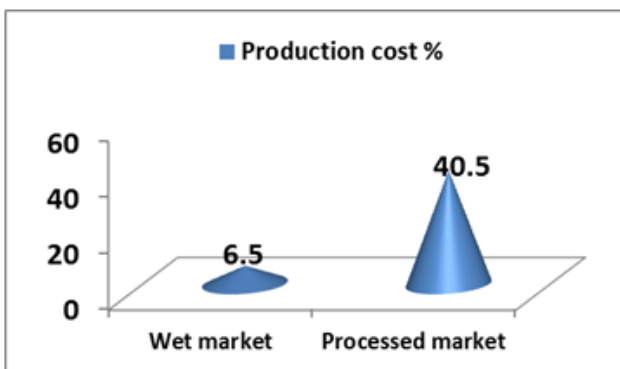


Figure 5. Production cost % at wet and processed market

3.3. Problems Embedded Processed Poultry Products at Field Level Were Identified

- Indiscriminate open market practices
- Absence of structure poultry slaughter
- Existing policy is not properly implemented
- Burden excess vat and tax on process or further processed product
- Absence of assigned Halal certified authority to convinced importer on quality assurance of exportable product
- Lack of training and awareness in every market actors to maintain quality control
- Lack of monitoring on existing marketing system
- Dominance of imported products and wet market invasion

Provision need to support Sustainability value chain business: The provision of business support services such as access to credit, information, storage facility and

training on the production and the functioning and dynamic nature of markets need to be competitive establishment of these services particularly in agricultural products by the government. These services are of course entirely non-existent in the study areas at any stage of the market chain. So that, the government and other development partners should exert profound effort to assist the chain actors in holistic manner for flourishing this business in full swing to meet up the public demand especially ensuring quality food.

4. Conclusion and Recommendation

For making efficient value added based marketing system development needs to be initiated stopped Open market & set up structured slaughter house and Halal certified authority should be assigned instantly; Strict on implementing of existing slaughter house policy and also Law and enforcing agency should be centralized and pricing control; Strengthening monitoring & examination on food safety and quality control issues. on value added products ins and outs beneficiary effects to the end users. Finally need to strengthening mass media publicity Value added poultry segments needs to be vigorously promoted for boosting production to increase the domestic consumption of processed products and also for promoting their export. Family dynamics, rising income, increasing exposure to various mass media, changing food habits with preference for fast foods and heavily industrialization and urbanization will greatly enhance the demand for fresh or frozen and nutritionally superior value added products. Policy makers, meat producer cum processor, food processor, food technologist etc. have to work together to transform this sector into a more dynamic and vibrant enterprise in the long run

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