



# International Journal of Sciences: Basic and Applied Research (IJSBAR)

ISSN 2307-4531  
(Print & Online)

<http://gssrr.org/index.php?journal=JournalOfBasicAndApplied>



---

## SME Development Challenges and Opportunities in Bangladesh: A Case Study on Poultry Hatcheries by Triple Triangle Framework (TTF)

Md. Shamsuzzaman<sup>a\*</sup>, Sheikh Morshed Jahan<sup>b</sup>

<sup>a</sup>DBA Student, Institute of Business Administration, University of Dhaka, Bangladesh

<sup>b</sup>Associate Professor, Institute of Business Administration, University of Dhaka, Bangladesh

<sup>a</sup>Email: [fatherofsaiki@gmail.com](mailto:fatherofsaiki@gmail.com)

<sup>b</sup>Email: [smj@iba-du.edu](mailto:smj@iba-du.edu)

### Abstract

In the last half decade, there has been a visible growth in the poultry industry of Bangladesh leading to an increase in the per capita availability and consumption of chicken meat and egg. Although this growth has resulted in the minimization of the gap of human protein requirement, but compared to other developing countries as well as developed countries, per capita meat consumption is still very much lower. So there is a vast opportunity to improve total poultry industry by setting proper strategy to manage challenges and using opportunities effectively as well as efficiently. As a result the prime objectives of researchers are to explore the challenges and opportunities of poultry hatcheries focusing on SME players. Primary data has been collected by in-depth interviews and focus group discussions with different tiers of poultry professionals. Major findings of the research are the knowledge gap in respect of competitive dynamics, strategic management, global linkage potentials and modern technologies as well as another prime constraint is funding and fund management in terms of accessibility, availability and affordability (3A).

**Keywords:** SME (Small & Medium Enterprise); Poultry Hatchery; GP (Grand Parents); PS (Parents Stock); DOC (Day Old Chicken); Triple Triangle Framework (TTF).

---

\* Corresponding author.

## **1. Introduction**

Poultry have been domesticated for thousands of years. Archaeological evidence suggests that domesticated chickens existed in China 8000 years ago and that they later spread to Western Europe, possibly by the way of Russia. Domestication may have occurred separately in India or domesticated birds may have been introduced from Southeast Asia [1]. From the then village household poultry rearing started in Bangladesh. But commercial poultry farming has been pioneered by the Eggs and Hens Ltd. as early as 1954 and steered by the Biman Poultry Complex after the independence, commercial poultry industry took a smooth take off through heavy investment of private sectors during nineties, and it accounts for an estimated capital investment of about US\$ 3.0 billion facilitating employment of about 6.0 million peoples [2].

After that poultry industry has started to grow aggressively in the commercial sector, even then considering consumption of poultry meat, Bangladesh ranks as one of the lowest consuming countries. Industry observers claim that the average consumer eats about 3.2 kg of poultry meat annually [3]. OEFD-FAO Agricultural Outlook, however, states that the per capita consumption is even lower at just 1.2 kg per year per person.

This figure is lower than regional countries like India and Pakistan. The cause of such a low consumption figure is due to the vast population sector in the country who fall into the poor and middle class. These people consume meat occasionally and have a lower per capita income compared to the neighbors India and Pakistan. In comparison, Malaysia and the United States are at the top end of the poultry meat consumption chart, with 41.4kg per capita and 47.6kg per capita respectively [3].

So it can be clearly concluded that there is a big gap between demand and supply of poultry meat in Bangladesh considering developed as well as developing neighboring countries. Now a day's poultry industry is one of the extreme potential sector for a developing country like Bangladesh. This industry has high potential to help nation by broadening the scope food security especially enhancing protein availability, affordability and consumption.

It is unquestionable that in the modern global business arena the Small and medium scale Enterprise (SME) is the engine of economic growth considering major national economic indicators like GDP growth acceleration, reducing poverty, income equality and regional disparity through increasing purchase power by generating employment, minimizing balance of trade by using the export potentials, finally improving inclusive economic growth. Poultry hatchery which is the starting point of poultry value chain are also playing a very vital role to minimize demand- supply gap of human protein requirement resulting in healthier Bangladesh.

Now a days, importance of SME hatcheries is very commendable, since most of the small commercial broiler and layer farms are highly dependent on SME hatcheries for commercial DOC and other related supports. Because of regional connectivity, relationship and convenience they take support from them rather than large players. If we can properly activate them, only SME players could be able to fulfill the local demand as well as work as active component of value chain of large players to take all kind of preparedness for entering global market.

As a result researchers tried to find out the challenges and opportunity of SME poultry hatcheries which are the major driver for inclusive growth in the poultry industry as well as national economy of Bangladesh. Because, most of the research works were conducted on the total Poultry Industry, the Layer Industry, and the Broiler Industry, where the researchers had a lesser scope of emphasizing on SME hatcheries. Only a very limited number of research work was done on the SME Hatchery which is arguably the most important for adding value into the entire poultry industry.

## **2. Objectives of the research**

### ***Broad Objective***

The broad objective of the research is to explore the challenges and opportunities of SME poultry hatcheries along the domains and dimensions of the triple triangle framework (TTF) [4].

### ***The Specific Objectives***

- To explore the influence of level factors of TTF such as capacity, capital, cultural orientation which are the extended version of resource-based school of thoughts for the development of SME hatcheries.
- To analyze how industry level factors of TTF which are the compressed version of Porter's five forces model like customer, competition and collaboration create barrier or facilitate the growth process of SME hatcheries.
- To extract challenges and opportunities of SME poultry hatcheries in respect of micro level factors such as state and support, globalization and internal forces and technology.

## **3. Limitation**

The researches could not cross the barrier of limitations while doing this research that have been identified as follows:

1. There was an insufficient, as well as, a lack of reliable source of secondary data in government and private sector.
2. Trying to analyze all the components of challenges and opportunities of poultry hatcheries of Bangladesh would require a herculean effort, with a single research work being insufficient to portray them entirely.
3. The research findings were analyzed using the Triple Triangle Framework (TTF) which has covered salient features of the research objectives but not everything.
4. The researchers have conducted in-depth interviews and focus group discussion with the professionals of ten different size of poultry hatcheries. So, there are many hatcheries which have not been covered in this research work.

#### **4. Research Methodology**

An intensive literature review has been conducted covering historical development, challenges and opportunities, competitive dynamics, sustainable competitive advantage, and value chain management of poultry hatcheries focusing on local vs. global market which has given a clear indication to the researcher for developing a refined research methodology to conduct the research successfully.

Researcher has visited few hatcheries at each of large, medium and small segment to experience their operations technical and business operation methods. Most of the primary data has been collected through in-depth interview as well as focus group discussion with key informant of ten hatcheries of two from large, four from medium and four from small segment. Judgmental sampling method were followed to collect data considering required technical and managerial knowledge of poultry hatcheries. Researcher also conducted interview with the key person of different association especially General Secretary of Breeder Association of Bangladesh (BAB) and World's Poultry Science Association, Bangladesh Branch.

A series of interviews have been conducted with respective government officials especially from research and admin wings. To know the business dynamics of feed and poultry medicine industry relating to hatchery, researchers have conducted two focus group discussion having senior management people of feed industry and poultry medicine industry.

Secondary data has been retrieved from different internationally published research papers of different international journals, key note papers of different seminars, statistical yearbooks, annual reports of public limited company, reports of international and national NGO's related to poultry hatcheries and its value chain management.

#### **5. Literature Review**

##### ***5.1 Definition of SME and Proposed Classification of SME Hatcheries***

It is very complex job to define SME only on the basis of amount of investment as well as number of employee. There are so many factors related to categorize SME for different industries since different industry have different character. Even than most of the organizations as well as countries prefer to categorize on the basis of above two factors. Some of the definitions are given below:

According to the European Union (2003), SMEs are defined as enterprises, which have at most 250 employees and an annual turnover not exceeding 50 million Euros. Further, there is the distinction of small enterprises. They have fewer than 50 staff members and less than 10 million Euros turnover and micro-enterprises (less than 10 persons and 2 million Euros turnover) [18].

According to the World Bank (2006), medium enterprises are defined as enterprises, which have at most 300 employees and an annual turnover not exceeding 15 million US dollars. Further, there is the distinction of small enterprises — they have fewer than 50 staff members and up to 3 million US dollars turnover — and micro-

enterprises have up to 10 persons and \$100,000 turnover [18].

According to the Industrial policy 2005, SME definition has been in terms of fixed assets and no. of employees of three major sectors: service, manufacturing and trading but the present definition which was recommended by Better Business Forum and accepted as a uniform one by Ministry of Industry and Bangladesh Bank included Cottage and micro industry as SME in Bangladesh. Bangladesh Bank has revised the SME definition through its ACSPD Circular No.08, dated 26th May, 2008 and then through its SME SPD Circular No.01, dated 19th June, 2011. Accordingly the medium manufacturing concern are defined as the enterprises which have total fixed assets of BDT 1000-3000 lac and no. of employee is 100-250 and small manufacturing concerns which have total fixed assets 50-1000 lac and total number of employee is in between 25 to 99.

Researchers desire to add few parameters to define SMEs over and above the amount of investment and number of workers such as required method and technology, technical complexity of production, degree of professional, skilled, semi-skilled, unskilled team players requirement including knowledge and skills, target market segment, customer expectation regarding product and services, waste management activities and socio-economical culture of the nation.

We know that poultry hatchery business is a very much technology driven business, so it is not wise to classify SMEs poultry hatcheries as per the latest definition of Bangladesh Bank, because if researchers work on the basis of this definition research work will not meet the objectives. As a result on the basis of several focus group discussion and subsequent in-depth interviews with different hatcheries professionals of different tier a proposed SMEs category has been defined below considering four parameters-

**Table 1:** Proposed SME s Classification of Poultry Hatcheries in Bangladesh

Class	DOC Production Capacity (Per week)	DOC Regular Production (Per week)	Capital	Employment
Small	More than 50,000pcs	Below 50,000pcs	Below 50 Crore	Below 100
Medium	2,00,000 -3,00,000 pcs	50,000 to 2,00,000pcs	50-100 Crore	100-250
Large	More than 3,00,000pcs	More than 2,00,000pcs	More than 100 Crore	More than 250

Source: Proposed by authors, developed based on primary and secondary information

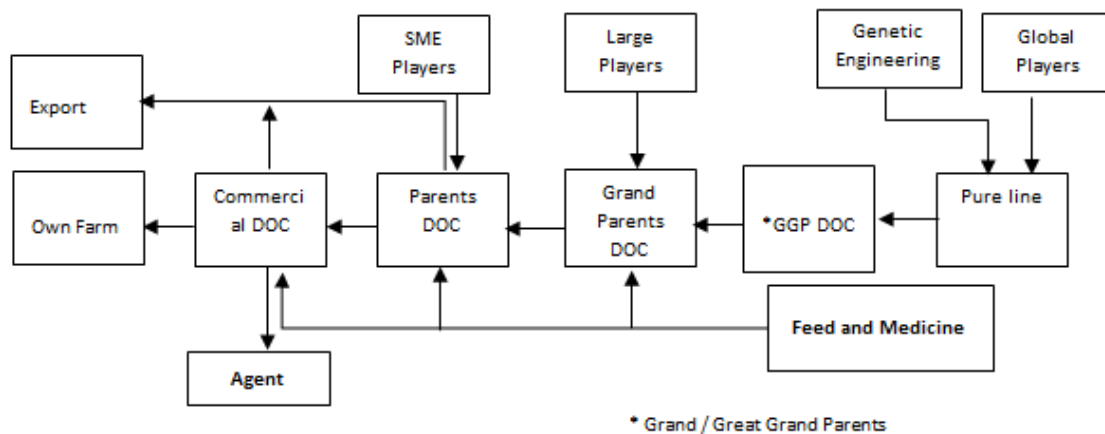
## **5.2 Poultry**

In general term poultry is domesticated fowl, such as chickens, turkeys, ducks, or geese that produce eggs, meat, manure and feathers that can be used or treated by their owners. But the researchers only consider chicken as poultry, since more than 90% market share is occupied by chicken. Two types of chicken have been reared, one for egg and another for meat in the commercial layer farm and commercial broiler farm respectively. In general, poultry provide animal protein in the form of meat and eggs which is going to be the major source for meeting human protein requirement.

### 5.3 Poultry Hatchery

Poultry hatchery is the nucleus of total poultry value chain where different generations of DOC at different stages, is produced through an integrated hatching process which is consists of mainly two phases; one is setting and another is hatching. A simple chart (Chart-1) is given below showing different generation of DOC. Most of the cases, each and every hatcheries has breeding farm to produce fertilized egg for the production of different generation DOC.

If we talk about the technique of core hatching process, the first step is setting for which setters machine is required to set fertilized egg where suitable environmental factors such as temperature, humidity etc. are closely controlled automatically or semi automatically. Eggs need to be kept for 18 days in the setter. Then egg are transfer to hatcher for three days. All together it takes 21 days to get DOC from a fertile egg. After that quality inspection need to be done to select the healthy DOC considering all criterion for using in the breeder farms and simultaneously to complete the vaccination process before distribution.



**Figure 1:** DOC Value Chain of Poultry Hatchery

Source: Developed by authors, based on primary and secondary information

As per the proposed DOC Value Chain of Poultry Hatchery, none of the poultry hatchery in Bangladesh across the size, practices full value chain starting from Pure Line or Grand Grand Parents(GGP) due to lack of R&D facilities. Only seven large hatcheries import Grandparents (GP) DOC from USA, Netherlands, Australia, Canada, Sri Lanka, Thailand etc. Six players out of seven produce PS-DOC broiler as well as commercial DOC

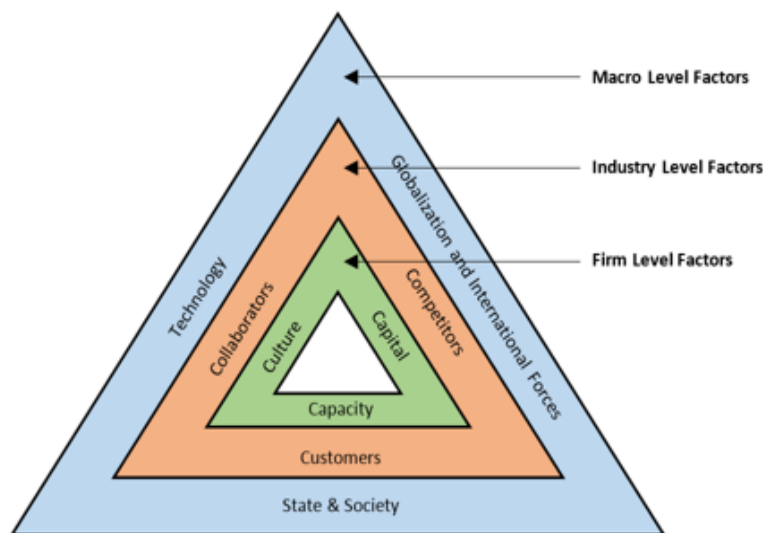
broiler for their own use or to sell to the SME players. It needs to be mentioned that there are few PS-DOC producer don't sell to others. Only one out of seven (Paragon Agro Limited) produce PS-DOC layer. Our large player's value chain is similar to Indonesia's Poultry Value Chain with one exception that is contract farming, since professional contract farming is not the regular industry practice in Bangladesh [6].

SME's hatcheries value chain start from PS DOC which is the one step shorter form large players. They buy or import GP DOC from local players and abroad to produce commercial DOC which is similar to The Nepal Poultry Value Chain [7].

#### 5.4 The Triple Triangle Framework (TTF)

The TTF has been developed by the one of the author of the research work Sheikh Morshed Jahan (2008 b) which has been published in many national and international research journal as an analytical tool for SMEs performance which is an well accepted tool to help market development strategist in carrying out SMEs performance analysis, intervention and any other assessment in a systematic and comprehensive fashion [8].

According to him there are two sets; the first set of Cs is internal and the second set of Cs is external. The first set of the 3Cs is the extended version of resource-based school of thoughts (added is cultural orientation), while the second set of 3Cs is the compressed version of Porter's Five Forces Model. Putting together the both 6Cs micro-framework he also added another three macro forces to complete the triple-triangle framework as an ideal tool for the analysis of enterprise competitiveness and challenges [4].



**Figure 2:** The Triple Triangle Framework (TTF)

TTF uses three triangles, each summarizing the factors that affect business competitiveness at different levels. The inner triangle – with each of the three sides symbolizing either capacity, or capital or culture – explains the internal, largely controllable dynamics of 3Cs. The middle triangle with each of its three sides symbolizing either a customer, or a competitor or a collaborator – describes the immediate, industry-level

context in which 3Cs work. The outer triangle – with each of the three sides symbolizing either technology, or state or society and global forces – presents the macro environment, a largely non-controllable setting in which 3Cs have to operate [9].

Many researchers have work on the analysis of SMEs activities using different management tools like SWOT, PESTEL, and Porter's Five Forces Model which are widely used. However, The TTF is a comprehensive and new tool for SMEs performance analysis which has been also used by United Nation ESCAP (Economic and Social Commission for Asia and Pacific, April 1, 2011) on Enabling Environment for the Successful Integration of Small and Medium Sized Enterprises in Global Value Chains, Studies in Trade and Investment No. 70. As a result researcher felt interest to analyze the research finding on the basis of TTF domains and dimensions.

## **6. Research Findings**

### **6.1 Firm Level Factors**

#### **6.1.1 Capacity Building**

It has been revealed from the survey, the management of SME hatcheries, except for a few, have a huge knowledge gap in need assessment, proper planning, implementation, monitoring and evaluation of the total capacity building process. It is one of the biggest challenge for the SME players to create competitive advantage to compete with the large players as well as enter into the global market. Detail findings considering major capacity building parameters are as follows:

- **Need assessment:** It has been found that except few conglomerate SBUs, most of the SME hatcheries do not exercise the need assessment stage professionally. Because they cannot identify the gap in their capacity building planning which makes them unable to understand capacity enhancement and optimization of the organization.
- **Planning:** Most of the SMEs do not have sufficient knowledge regarding planning drivers such as vision, mission, goal, objective and required external and internal business environment to grow. As a result, most of the SME players do not concentrate on team building and capacity building process. Few of the respondents mean that planning is preparing, monitoring and evaluating of their yearly topline budget and individual human performance. Few medium sized hatcheries like Reneta Ltd follows modern business planning process but they have less concentration on hatchery business since it's not their core business.
- **Human resource management:** A small portion of medium sized hatcheries try to follow human resource development model whereas most of them are interested only to recruit good people only but they don't think their further development in terms of skills and knowledge.



In case of enhancing capacity building, value chain integration is the prime tool for the SME players – opined by most of the respondents. They also agreed effective and efficient value chain integration increase work efficiency and productivity.

Most of the small players are not concerned about quality employee due to higher compensation package. They don't want to delegate authority and improve leadership qualities of their employees. As a result, they always try to hold everything under the jurisdiction of the entrepreneur, which does not create ownership among the employees. In most of the cases, they do not encourage their employees by endorsing their achievement. Most of the SMEs believe in quick and visible returns from their investment. That's why they are not interested to train their employees.

### **6.1.2 Capital**

In terms of accessibility, availability and affordability (3A) medium hatcheries are in better position than small players for funding and fund management.

This is a core barrier for all small players as they have a very narrow access to any source of funding, furthermore whatever funding that they can manage usually by higher rate of interest compared to others, which affects their affordability. These players have a better access to SME funding which should have lower interest rate as per the existing government policy. However, in reality, the situation is quite the opposite where most of the institutions charge a higher rate than the commercial banks.

Another limitation to avail micro financing facilities is that most of the micro financing organizations tend to offer limited financing to micro finance enterprises, but the small players cannot be defined as micro finance enterprises. When faced with awkward situations and other hardships, especially to recover seasonal shock, as the last resort, the smaller players usually tend to sought funding from their relatives, friends, or other personal loans. In most of the cases, the players have to face unprofessional attitudes including paying a much higher interest rate to the lenders, which poses as a demotivating factor to continue their business. Although Equity Entrepreneurship Fund (EEF) and Agricultural Loan offer the lowest cost of fund in the market, some of the players are aware but not sure about the eligibility of availing the opportunity.

Mr. Saidur Rahman Babu, General Secretary, Breeder Association of Bangladesh, has given a clear picture on the EEF and Agricultural Loan. He opined that both the loans are designed for the industry under the umbrella of the Agricultural Ministry. Unfortunately, the Poultry Industry is under the Ministry of Fisheries and Livestock, as a result, these financial organizations suffer from indecision on whether the poultry industry is eligible for such loan facilities.

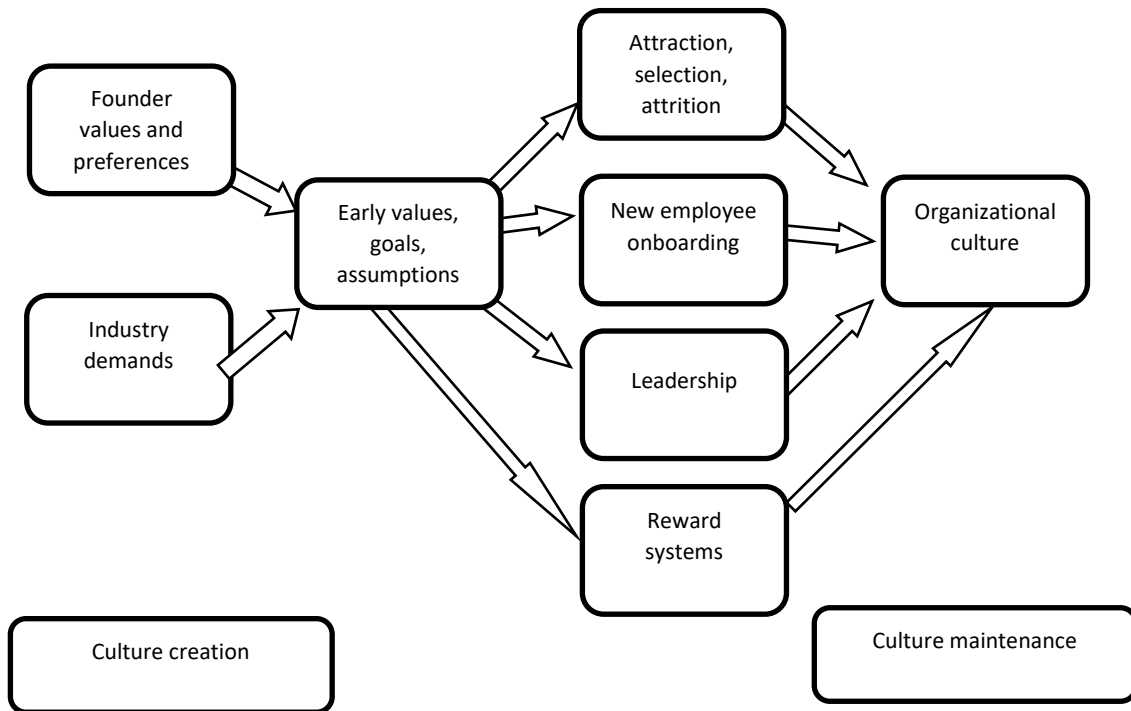
Compared to the smaller players, the medium players are in an advantageous position, in terms of accessibility, availability and affordability to commercial banks, SME financing, and NBFIs loans. They are mostly aware of

EEF and Agricultural loans that are available, but many of them have an ambiguity regarding the process of availing the loan.

One of the burning issues for the SME players is that they cannot bring their organization under certain insurance policies due to some barriers from the government regulations, as a result, they cannot safeguard their capital.

### 6.1.3 Culture

For the research work, the researchers focused on the organizational culture of the SME hatcheries. Most of the small players are practicing traditional or family culture, but they have keen interest to upgrade their organizational culture to the modern corporate culture. Most of them have lack of right kind of knowledge and skill how to improve organizational culture which has been in detail by the researchers with the help of the following model.



**Figure 3:** Culture creation and maintenance

Source: Bauer, T. and Erdogan, B. An introduction to organizational behavior v.1.1

General Manager of Renata Limited opined that they follow corporate culture properly where they are highly delegated to perform their job and accountable to management.

- **Founders Values and Preferences:** In poultry hatcheries including the market leader, organizational culture is driven by the founder’s values and preferences. But the organization which has been

inherited from multinational culture i.e. converted from multinational to national conglomerate (such as Renata Ltd. & ACI Ltd.) are maintaining corporate culture where founders values and preference play an insignificant role.

One of the General Manager of that company expressed that they are almost maintaining the corporate culture except few exceptions but they are in the process to fill up the gap.

- **Industry Demand:** Poultry industry is passing through the early growing stage in industry life cycle. As a result, if we consider the industry demand, it is in the early stage to adopt the perfect corporate culture across the industry. It is very interesting that market leader also is not following corporate culture properly as per global standard.

The Director of Shyamoli Poultry told that they were very keen to change their culture at that level which would not create any problem to select professional employee for the right position.

- **Attraction-Selection- Attrition:** Most of the small players agreed that they can't attract professional people due to lack of corporate culture. That's why they can't go for desired expansion.
- **New employee Onboarding:** Most of the SME players don't have clear idea about new employee onboarding. Everybody was highly convinced that cultural development is very important for new employee onboarding while the term had been clarified to them.
- **Leadership:** All of them agreed that leadership is key to the organizational success but most of the small players and few medium players don't have proper understanding for leadership development. Only one of them agreed that through proper training leadership quality may be developed in the organization.
- **Reward system:** Most of the SME players think that reward means traditional incentive and promotion. But they don't know about other ways of rewarding for motivation such training, recreation tours, safety and security back up etc.

## **6.2 Industry Level Factors**

### **6.2.1 Customer**

Researchers have found that most of the hatcheries management across classification strongly believe to be customer centric. They have positive intention for fair practice of Customer Relationship Management to acquire, retain and win back their existing and potential customers. SME poultry hatchery segment facing acute problem in terms of customer acquisition and retention due to their brand image and corporate image. Small players are in a challenge of making desired profit for similar reasons.

One management staff of small hatcheries commented that most of the pick season they had to face scarcity of parents DOC, once they had discontinued their production for unavailability of parents DOC.

Most of the cases individual farm wants to buy DOC from large players as they have preconceived idea that large players ensure better quality. It's a big challenge for the SME player to ensure standard quality at better price without proper vertical value chain integration of their hatcheries. Most of the medium players and almost all small players buy Parent DOCs from local large players, who are also their competitors. These large players usually supply to the SME players after fulfillment of their own requirement. As a result the small players are always in state of uncertainty of demand and supply. On the other hand, they cannot import parent DOCs due to knowledge gap and high price since they are to sell at a relatively lower price than the medium and large players.

Few medium players who are SBU of established corporate body, usually import the Parent DOCs from abroad (reliable source) so they can charge a higher price for their commercial DOCs, claiming a higher quality. Other medium players mostly buy from the local sources, facing similar problems as the smaller players.

One of the entrepreneurs of a small hatcheries has expressed his grievance that they are to sell commercial DOC at a lower price even though their production cost is higher than the large and medium players which discourages them for further investments.

### 6.2.2 Competition

Based on Porter's five forces model, researchers have found that SME hatcheries of Bangladesh is facing severe competitive tension from large hatcheries because they are facing higher bargaining power from both the supplier and the buyer's end. They also facing high threat of substitute and new entrants. Overall, SME hatcheries are facing intense challenges in contest of every aspect of competition resulting from higher level of industry rivalry.

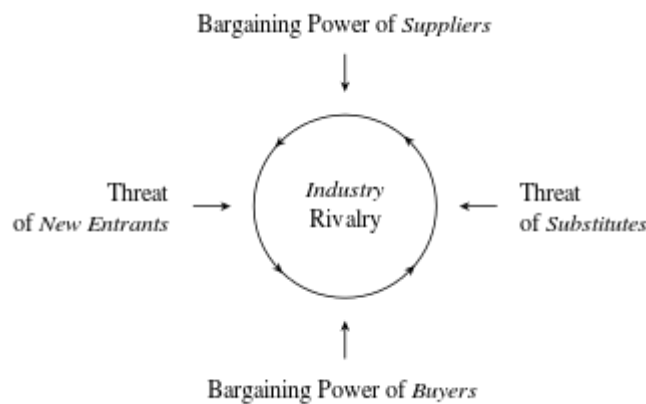


Figure 4: Porter's five forces model

Detailed findings of the researchers on the basis of each component of the porter's model has been provided below:

- **Bargaining Power of Suppliers:** There are seven Parent DOC suppliers for Commercial DOC broiler and only one Parent DOC supplier (Paragon) for Commercial DOC layer in the industry. Few of them produce for their own farm only instead of supplying to others. So, number of Commercial DOC hatcheries is much higher than the suppliers of Parent DOC. There is a demand-supply gap in Parent DOC. On the other hand, the Parent DOC suppliers are the competitors of their customers. Since all of them are producing commercial DOC which is the prime product for all. Naturally, it can be concluded that the bargaining power of the supplier is higher.
- **Bargaining Power of Buyers**

One of the entrepreneur expressed with grief that in the earlier days, they had to crush their DOCs due to the unavailability of buyers during off peak season which was the most painful business experience. Now the crushing of DOC has narrowed down due to the high growth of unstructured poultry farming.

Most of the buyers in the industry prefer to buy from the large players due to superior brand image, quality assurance, and the good will. To neutralize this effect, SMEs feel pressured from the buyers end to sell commercial DOC at an average 4-6Tk (10-12Tk in off peak season) less than the larger players in spite of their cost of production is higher due to economies of scale and shorter value chain.

- **Threat of Substitutes**

The primary substitute for broiler chicken meat is local chicken, duck, pigeon, quail, etc. Without a new variety with taste and quality similar to the local chicken, the threat of substitutes will remain high. Small regional players are facing the challenge more severely than other players.

- **Threat of New Entrants**

One of the entrepreneur who has discontinued business stated that one of the Chinese company has acquired my most of the customers by dint of their marketing and technical supports, that's why he was bound to stop business, since he is a regional player for a specific small area.

Small players are entering the market frequently without proper market analysis whereas global players with strategic visions and high technological backup, are also entering the market to feed the local market only which results in a huge cumulative threat for the market. As a result of the threat, more than 10% SME players are winding up business every year.

- **Industry Rivalry**

Suppliers being competitors, new competitors entering into the market frequently with longer value chain

and buyers preferring larger players. Researchers can easily conclude that the industry rivalry is very high.

### **6.2.3 Collaborators**

Large players supply parents DOC, sometimes poultry medicines and feeds as well as provide technical support to most of the SMEs, hence they play a vital role as a local collaborator. But usually they can't ensure required technical support during the peak season due to their higher production and need to cover higher number of hatcheries.

On the contrary, global players are more interested to work as collaborator with large hatcheries rather than SMEs to achieve higher value and volume. On the other hand, international collaborators have few observations to collaborate with SMEs which are as follows:

- In most of the cases, SMEs don't want to work with a long term partnership since they don't have specific business vision.
- Most of the SMEs are not careful to meet the global compliance for which global collaborators don't want to work with them.
- Emotional rather than professional entrance of SMEs can't grow the confidence of international collaborators because those players can exit from the market if they find any difficulty.

Considering the above, researchers may conclude that managing the right collaborator is a big challenge for SME hatcheries which is also a big barrier to replete their knowledge gap and embrace new technology.

## **6.3 Macro Level Factors**

### **6.3.1 State and Society**

Most of the respondents agreed that poultry hatchery has a vital role for social, economic and environmental development of our country.

However, it is very surprising that the SME including the large players, are not being cautious about the environmental issues. Due to lack of knowledge, they are not focusing on proper poultry waste management which creates environmental pollution resulting negative social impact.

Few of the SME respondents shared that they are following waste management process but in reality they are following part of waste management instead of complete reverse value chain process. Most of the SME players follow the traditional way of waste management which also indirectly causes environmental pollution.

While researchers were talking with some neighbors of a small hatchery, many of them were expressing their grievances that they are getting bad odor from the waste of the hatchery which may cause serious harm to their family member specially children.

While researchers spoke with the concerned government officials regarding these issues, most of them admitted that they are very aware of the industry practice. They strongly agreed that each and every hatchery should follow reverse value chain process to protect the environment as well as social safety.

They cannot impose strong regulations since the industry is in its initial stage of growth and proper policy has yet not been set. The policies which has been already formed each require some modification for the SME players since they are unable in terms of fund, as well as knowledge, to implement proper waste management.

### **6.3.2 Globalization and International forces**

Most of the SME respondents expressed that their cost of production is higher than large players as well as global players due to economies of scale but they are unable to increase their production capacity due to lack of availability, accessibility, and affordability of funds as well as fund management.

Most of the respondents opined, “The current age of free global economy is the right time to integrate value chain and gain sustainable competitive advantage to enter into the global market”. Some SME players also showed interest in associating with each other for enhancing capacity building in terms of technology and value chain integration to compete with large players and to enter into the global market. Few SME players agreed to work as a single component in the value chain for global players, since they have significantly lower labor cost.

Most of the SME players do not have the appropriate knowledge about the total global market scenario, market segmentation, demand-supply status, pricing strategy, quality and services. So, they cannot make proper plan on how, when, and where they can enter with what kinds of features and benefits in both local and global markets.

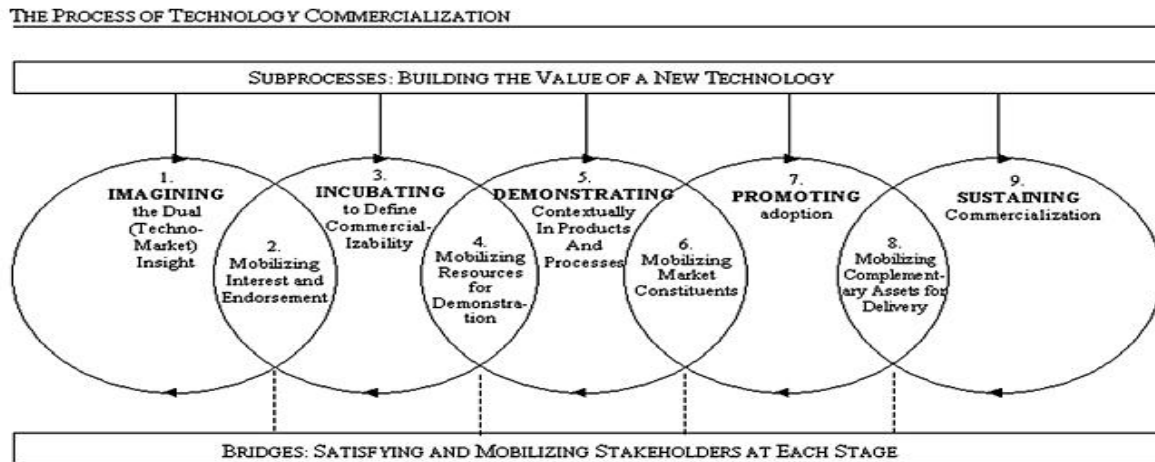
### **6.3.3 Technology**

Most of the SME players do not have a clear understanding about the modern global technology, especially biosecurity and safety issue, vaccination and medication, automation in poultry shade, and hatchery equipment. Different people opined differently regarding the technology.

Most of them have the perception that whatever they are using is the latest technology, however, in reality, it is not. Most of the SME respondents were in dark regarding the efficiency of modern equipment and methodology which can enhance the productivity in terms of quality and profitability.

It is always in their mind that modern technology will increase investment compare to better returns.

To narrate the challenges of the SMEs players, researchers have used a process of technology commercialization proposed by Jolly (1997) which is as follows:



**Figure 5:** The process of technology commercialization

One of the small entrepreneurs made a comment “Being the owner of a small company, with limited desire of expansion, I don’t think my existing technology needs improvement”

As per the above chart, most of the SME s have the imagination to go for better technology, but few are even less bothered to spare their thoughts regarding technological development.

In case of the incubating stage, SMEs have limited understanding how to commercialize the technology, or how to harvest the benefits of better technology. In that stage, it is very essential for the SME players to understand the management of required resources for adapting better technology.

One of the prime reasons for not adapting better technology is due to lack of know how to exhibit the benefits of it. There are some intangible benefits of technology which cannot be demonstrated to the target group if there is inadequate communication skills like not using of techno-commercial sales promotional tools.

Regarding the promotion of technology, in most of the cases, SME entrepreneurs including the large entrepreneurs don’t have the right kind of attitude to invest money for promoting benefits of new technology which is added in the product and services. As a result, they are not able to create the sustainable competitive advantage which is known as sustaining commercialization of new technology.

## 7. Recommendations

Considering the research findings as well as prioritizing the major barriers in the development of poultry hatcheries or industry in Bangladesh, researchers have recommended the following:

- It is high time for the government to formulate a time tested, comprehensive, national poultry development policy with active participation from poultry related government departments, local and foreign poultry industry experts, association leaders and representative from large, medium and small



poultry hatcheries, breeding farms, feed manufacturers and poultry medicine industries. It necessary for the Government to plan and take strict action to implement the policy properly and timely. According to industry experts, the National Poultry Development Policy - 2008 did not cover many important issues, at the same time, was not implemented properly and timely.

- An individual technical training institute is required to develop need-based technical and management trainings for all tiers of human resources including entrepreneurs of the poultry industry, since there is a huge shortage of trained manpower. If necessary, foreign technical experts may be involved or necessary help taken from related international organizations for organizing TOT (Training of Trainers) program to train up industry experts who will continue require training program for the development of total poultry industry.
- Central bank of Bangladesh needs to formulate special type of loan facilities for poultry industry, like Equity Entrepreneurship Fund (EEF), Poultry Loan (such as Agricultural loan) and specialized SME loan for SME poultry at a special interest rate with less complicity. Specialized bank may be recommended to help poultry industry considering the export potentials.
- Government should declared incentive or motivational scheme for exporting poultry meats.
- Government should take a proper initiative to strengthen the activities of BLRI (Bangladesh Livestock Research Institute), so that they can develop and maintain stock of Grand Grand Parents at global standard and can produce Grand Parent DOC for large players, as well as Parents DOC for the SME players. As a result, the poultry industry will be self-sufficient, not to be dependent on import of any parents DOC. SME players also will not be dependent on large players for parent stocks.
- BLRI should take proper steps to develop a new hybrid variety better than Somali, which will get popularity in local target groups like local variety in terms of local desirable quality and physical appearance having better adaptability in our climate for SME players and small family based farmers. So that small family holders and SME players will be encouraged to meet up local demand.
- Poultry waste management is a burning issue for social safety and security by protecting environmental pollution. It will also help the industry to increase profitability as well. State should shoulder some responsibilities to educate as well as provide necessary support to the industry for executing reverse value chain process by which poultry waste will be managed effectively. On the contrary, from the government policy making level, it should be imposed as mandatory compliance for the large players to execute reverse value chain process for their industrial waste management which will act as practical example for the SME players to follow the process in the future.
- International forces are very active for the underdeveloped and developing countries to improve category-wise SME sectors. Somehow, poultry SME industries is getting comparatively less concentration from the international agencies for the visible improvement of the sector. Yes, there are few projects that have been developed and implemented earlier for improving household poultry industry, but now number of projects is very limited. On the basis of the research work, it can be concluded undoubtedly that to improve the total poultry sector, international forces need to play a vital role to improve SME poultry hatcheries. So, the government needs to give high focus on it.
- The government should take initiative to educate the poultry business community regarding the global modern technologies and its advantages. In that case, for growing their interest, there is no initiative

from the government policy making stage as well as no international or private organization are involved.

- Government should allow the international companies to set up their plant here not only cater the local market but also cater foreign markets by certain percent of their production.

## **8. Conclusion**

This research has explored the key challenges and opportunities of SME poultry hatcheries in Bangladesh by using the TTF model. Major findings of the research are the knowledge gap in respect of competitive dynamics, strategic management, global linkage potentials and modern technologies as well as another prime constraint is funding and fund management in terms of accessibility, availability and affordability (3A).

The poultry industry of Bangladesh has huge potential to contribute not only to the local market, but also to make an entry into the global market, of course, provided that the knowledge gap is bridged and well thought-out strategic moves are made early.

This research will help the existing entrepreneurs, business professionals, as well as researchers to find out the lapse and gaps of SME poultry hatcheries of Bangladesh. This will further help to find out the gaps for adding value into the total poultry industry of Bangladesh. Insights and experiences captured in this research work are expected to help development of the poultry industry not only in Bangladesh but also in other emerging economies with similar context and development trajectory.

## **References**

- [1]. Alders, R. and Pym, R. (June, 2009). Village Poultry: Still important to millions, eight thousand years after domestication, *World Poultry Science Journal*, pp. 181-191.
- [2]. The Daily Ittefaq, March 10, 2011.
- [3]. <http://www.thefinancialexpress-bd.com/2016/07/28/39843/Bangladesh> (Accessed on 10/01/17)
- [4]. OECD-FAO Agricultural Outlook, 2016
- [5]. Jahan, M. S (2008b), Market Development and SME Competitiveness: Does Government Policy Address SME Challenges, *Journal of Business Administration*, Vol. 34, No 1&2 January & April 2008, pp. 53-67.
- [6]. Ahmed, K and Chowdhury, A.T (2009), Performance Evaluation of SMEs of Bangladesh. *International Journal of Business and Management*, Vol.4, No.7
- [7]. A report published by USAID (August 2013); Indonesian Poultry Value Chain – Costs, Margins, Prices and Other Issues.

- [8]. A report published by USAID (August 2008); The Nepal Poultry Value Chain and Avian Influenza.
- [9]. The report of United Nation ESCAP (Economic and Social Commission for Asia and Pacific, April 1, 2011) - "Enabling Environment for the Successful Integration of Small and Medium Sized Enterprises in Global Value Chains, Studies in Trade and Investment No. 70".
- [10]. Bauer, T. and Erdogan, B. An introduction to organizational behavior v.1.1, pp. 744-754.
- [11]. Porter, E. M. (1985), *Competitive Advantage; Creating and Sustaining Superior Performance*. pp. 33-61. First Free Press Export Edition 2004, New York.
- [12]. WBCSD (2011) *Collaboration, innovation, transformation: Ideas and inspiration to accelerate sustainable growth - A value chain approach*, p.3 & 5 (emphasis added) (Accessed 19/11/16).
- [13]. <https://globalvaluechains.org/concept-tools> emphasis added (Accessed 19/11/16).
- [14]. Kaplinsky, R. and Morris, M. (2001) *A Handbook for Value Chain Research*, Prepared for the International Development Research Centre (IDRC), pp.4-6, 9-14, 25-32.
- [15]. SustainAbility, UNEP and UNGC (2008) *Unchaining Value: Innovative approaches to sustainable supply*, p.2 (emphasis added) (Accessed 19/11/16).
- [16]. GHG Protocol (2011) *Corporate Value Chain (Scope 3) Accounting and Reporting Standard - Supplement to the GHG Protocol Corporate Accounting and Reporting Standard*, World Resources Institute (WRI) and WBCSD, p.141 (emphasis added) (Accessed 19/11/16).
- [17]. Proctor, F. and Lucchesiv, V. (2012); *Mapping Study on Value Chain Initiatives in SEP Region*, pp. 1-8, 10-11, 17-23, 55-62.
- [18]. A journal published by the department of Agriculture, Forestry and Fisheries, Republic of South Africa (2014); "A Profile of South African Broiler Market Value Chain".
- [19]. Ayele, G. and Rich, M. K. (October 2010); *Poultry Value Chains and HPAI in Ethiopia, Africa / Indonesia Team Working Paper 25*.
- [20]. Shamsudduha, M. (2011); *Applying Reverse Supply Chain in the Poultry Industry*.
- [21]. Prahinski, C. and Kocabasoglu, C (2015); *Empirical research opportunities in reverse supply chains*. Omega: International Journal of Management Science 34 (6): 519-532.
- [22]. Masole, C. Mphothwe, K.G. and Moreki, C.J. (2015); "Value Chain Analysis of Botswana Poultry Industry: The case of Gaborone, Kgatleng, Kweneng and Southeast Districts". *Journal of World Poultry Research* 5(3): 64-72.

- [23]. [http://www.ifm.eng.cam.ac.uk/research/dstools/value-chain-/](http://www.ifm.eng.cam.ac.uk/research/dstools/value-chain/) (Accessed date 16/01/17)
- [24]. Kocabasoglu, C., Prahinski, C., & Klassen, R. D. (2007). Linking forward and reverse supply chain investments: The role of business uncertainty. *Journal of Operations Management*, 25(6), 1141-1160.
- [25]. Shamsuddoha, M. Quaddus, M and Klass, D. (200) Reducing Environmental Hazards through Reverse Supply Chain Model.
- [26]. McCormick, D and Schmitz, H (2001) Manual for Value Chain Research on Homeworkers in the Garment Industry, Institute for Developments Studies, p.17-19
- [27]. Reddy Amarender A. (2013) Training Manual on Value Chain Analysis of Development Agricultural Commodities, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), p.4.
- [28]. Small and Medium Enterprise (SME) Credit Policies & Programmes, SME & Special Programmes Department Bangladesh Bank Head Office, Dhaka
- [29]. Performance Evaluation of SMEs of Bangladesh, *International Journal of Business and Management* Vol.4, No 7, July 2009.

## **Appendix 1**

### **Acknowledgements**

We are highly grateful to Md. Atiqur Rahman, Md. Asaduzzaman, Mr. Abu Kaosar Md. Saleh, Sayed Sultan Ahmed, Dr. Abu Sadat Md. Sayem, Jadu Gopal Paul, Md. Atiqur Rahman, Manager, Md. Mosharraf Hossain and Md. Saidur Rahman of Kazi Farms Group; Dr. Md. Amjad Hossain, Dr. Mozammel Hossain Sarker, Mohammad Shaheen Shah and Mohammad Abdullah of ACI Animal Health, ACI Limited; Jahirul Islam Khan Hero, Executive, Breeder's Association of Bangladesh; A K M Salah Uddin Sarkar of Advance Agrotech (BAD) Ltd.; Md. Sirajul Hoque of Renata Limited & General Secretary, World Poultry Science Association, Bangladesh Branch; Md. Shohidul Islam, Dr. A.B.M. Khaleduzzaman, and Bibek Chandra Roy of Upazila Livestock Officer; Nokib Ulla Siddiquee, Asst. Director (Farm), Department of Livestock Services; Saidur Rahman Babu of S.B. Hatcheries Ltd. & General Secretary, Breeder Association of Bangladesh; Mr. Golam Shajlee Adeeb Chowdhury, Mr. Biplob Samadder and Md. Nazrul Islam, of Shamoli Poultry Ltd.; Mr. Md. Mahbubur Rahman and Nazrul Islam Liton of Peoples Poultry & Hatchery Ltd.; Md. Jahangir Alam of Abir Poultry Hatchery & Process Limited; Md. Ashfaquul Islam and Shaheed Israil Khan of Chicks & Feed; Dr. Debashis Paul of ACI Godrej Agrovet Private Ltd. For their valuable inputs regarding the research information as well as sharing practical knowledge and skills necessary for the research work.