



## IMPROVEMENT OF FIRM PERFORMANCE BY ACHIEVING COMPETITIVE ADVANTAGES THROUGH VERTICAL INTEGRATION IN THE APPAREL INDUSTRY OF BANGLADESH

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### ABSTRACT

*In the manufacturing step of the global apparel value chain (GAVC) the firms face fierce competition due to availability of low cost labor and hence the opportunity to make higher profit is a tough job. According to Gereffi (1999) a good strategy to overcome this problem is industrial up-gradation through value chain which resembles vertical integration strategy in the study of strategic management. The major theories on strategic management like Porter's generic competitive strategy, resource based view and capability based view advocates that industrial up-gradation or value chain integration gains competitive advantages for the firms. But no study done on GAVC has neither discussed what should be the relevant competitive advantages for apparel manufacturing firms on the basis of above mentioned theories nor empirically showed how industrial up-gradation can gain competitive advantages and improve firm performances. Therefore, this study has picked up the variables for competitive advantages examining the above mentioned important theories and linked industrial up-gradation and competitive advantages and subsequently with firm performances. This study has done a survey on 180 apparel firms in Bangladesh and by using structural equation modeling it found that industrial up-gradation through value chain has positive influence on competitive advantages and competitive advantages has significant positive influences on firm performances. By analyzing the result, this study recommends the apparel manufacturers in Bangladesh that they should allocate the physical resources and build up human resources in such a way that in future they can vertically integrate. The firms must not stick to the strategy of reduction of labor cost rather they should also try to*

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*pursue for other competitive advantages like time, quality, reliability and flexibility. In this way the firm performances would be improved.*

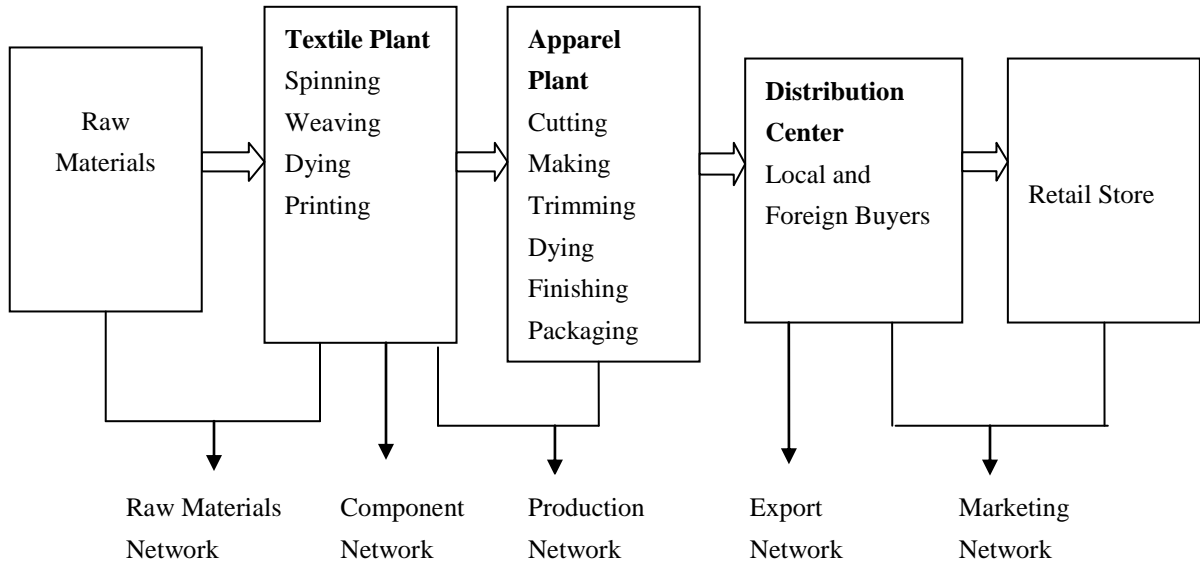
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**Key Words:** Industrial up-gradation, vertical integration, generic competitive advantage, resource based view, value chain, competitive advantages.

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## INTRODUCTION

The value chain of apparel industry is widely spread throughout the world. Since 1980s, value chains of apparel business have been divided into five separate but interrelated networks such as the raw materials network, component network, production network, export network and marketing network (Gereffi, 1999) (*see figure 1*). In the step of production network, the developing countries (DCs) and least developed countries (LDCs) cannot make sufficient profit because of provision of low value addition. These countries face fierce competition among themselves because of availability of low cost labor (Porter, 1990). On the other hand, to do business in the step of marketing network a firm needs to invest a lot which is beyond the ability of the firms of DCs and LDCs. So, very often the marketing firms in developed countries put stringent condition of low production cost on the manufacturing firms in DCs and LDCs. Therefore, these countries are very often locked into low value adding activities and cannot strive for further industrialization. To overcome this problem, some of the firms in DCs and LDCs are trying to develop their resources and capabilities to vertically integrate their business into relevant businesses of the same value chain like design making, procurement, logistics and marketing and distribution etc. The objective of this vertical integration is to gain competitive advantages and hence to overcome the problem of low value addition provision and to pool negotiation power with the lead firms (the buyers or retailers) in the supply chains. If the firm can do so, it is expected that they can improve firm performance. But this is not an easy way to do. Very often vertical integration becomes burden for the firm if the firm cannot efficiently utilize the common resources and make out synergy from the bundle of businesses. Another difficult issue to mull over is the determinants of competitive advantages in apparel firms. Judging from Porter's generic competitive strategy, resource base view (RBV), and capability based view (CBV) the competitive advantages have to be carefully selected on the basis of the nature of apparel business, apparel supply chain, apparel buyers and final consumers.

**Figure-1.** Stages in global apparel value chain

**Source:** Modified from Gini, S. F. (2002).

### The Competition in the Apparel Value Chain

It is already discussed that countries with different economic status enjoy competitive advantage in different position in the value chain and accordingly Bangladesh has competitive advantage in manufacturing stage of the value chain. But this competitive advantage is due to low labor cost and many countries in Asia, Africa and Caribbean region are ready to offer low labor cost (Grunsvan and Smakmen, 2002; Gereffi, 1999). There are many other issues which are responsible for making the market extremely competitive for Bangladeshi apparel manufacturers. For example, due to world politics United States of America (USA) and European Union (EU) favor different countries in different time. African Growth and Opportunity Act (AGOA) is that kind of favor. Geographical distance with U.S and E.U, fast fashion fever, competition among the supply chain rather than individual firms are also important causes for making the industry highly competitive. Consequently Bangladeshi apparel firms have to bring a change in their corporate, business or functional level strategy.

### Vertical Integration as the Strategy in Apparel Value Chain

Gereffi is the pioneer in advocating for industrial up-gradation as a strategy for sustaining competitive advantages for the apparel firms, described the trajectories of garment industries of Hong Kong (Gereffi, 1999), Taiwan, South Korea and China. His idea of industrial up-gradation is actually vertical integration and more specifically it is in-house vertical integration, if we consider it from the view point of strategic management. In-house vertical integration means extending value adding steps under the same roof or same plant. Therefore, first it is to be understood that

what was actually industrial up-gradation in East-Asian firms. It is found that the key to success of East Asian firms in developing a strong position in the global apparel value chain (GAVC) is to upgrade from mere assembly manufacturing to cutting-making-trimming (CMT) to full package supplier or original equipment manufacturer (OEM) (see figure 2). Subsequently, firms in the East Asian NIEs pushed beyond this to develop their own design capabilities (original design manufacturer or ODM) or even the production and marketing of their own brands (Original Brand Manufacturers or OBM) (Gereffi, 1999), thus becoming more independent from buyers and repositioning themselves in the chain. The reason behind this type of strategy regarding up-gradation in value chain is that apparel market is buyer driven chain; not a producer driven chain like automobile market. The producer has to advance on the basis of both their resources and capabilities. Consequently, apparel manufacturing is not capital and technology intensive and the manufacturers do not have much bargaining power in negotiation with the buyers. The up-gradation stages are : a) from CM/CMT to OEM b) from OEM to ODM and c) from ODM to OBM. CMT means cutting, making and trimming. Here the garment manufacture receives all the raw materials including fabrics and also it receives all types of logistical support for exporting back to the buyer's specified destination. The up-gradation from CMT to OEM happens when firms soon become full-range package suppliers for foreign buyers and develop an innovative entrepreneurial capability that involves the coordination of commercial activities like procurement and all sorts of logistics, marketing and distribution activities. In ODM production process, the firms apart from OEM activities, develops a design studio. After negotiation with the buyers, the firm finalizes a design for the buyers at their own design studio. But they do not have their own brand. These types of firms can make the lead time shorter. After a lot of experience as OEM and ODM, finally some firms can establish their own brands and become OBM, although these types of firms are still very rare in developing countries. This type of strategy has mainly two advantages: one is increasing the opportunity to add value per piece of product and therefore making more profit and the other is increasing the influence of the firm in the supply chain and therefore pooling the negotiation power (Porter, 1985; Sehgal, 2011). Industrial up-gradation strategy does not mean that the firms have to advance step by step. Very often the firms can undertake procuring, designing or marketing activities at the same time at different degree on the basis of their capabilities (Rahman et al., 2008). On the contrary, industrial up-gradation may be a risky venture if the firms do not have enough capacity and proper knowledge for running the new businesses. Moreover it may increase production cost in CMT if adjustment is not properly made among all the value adding steps.

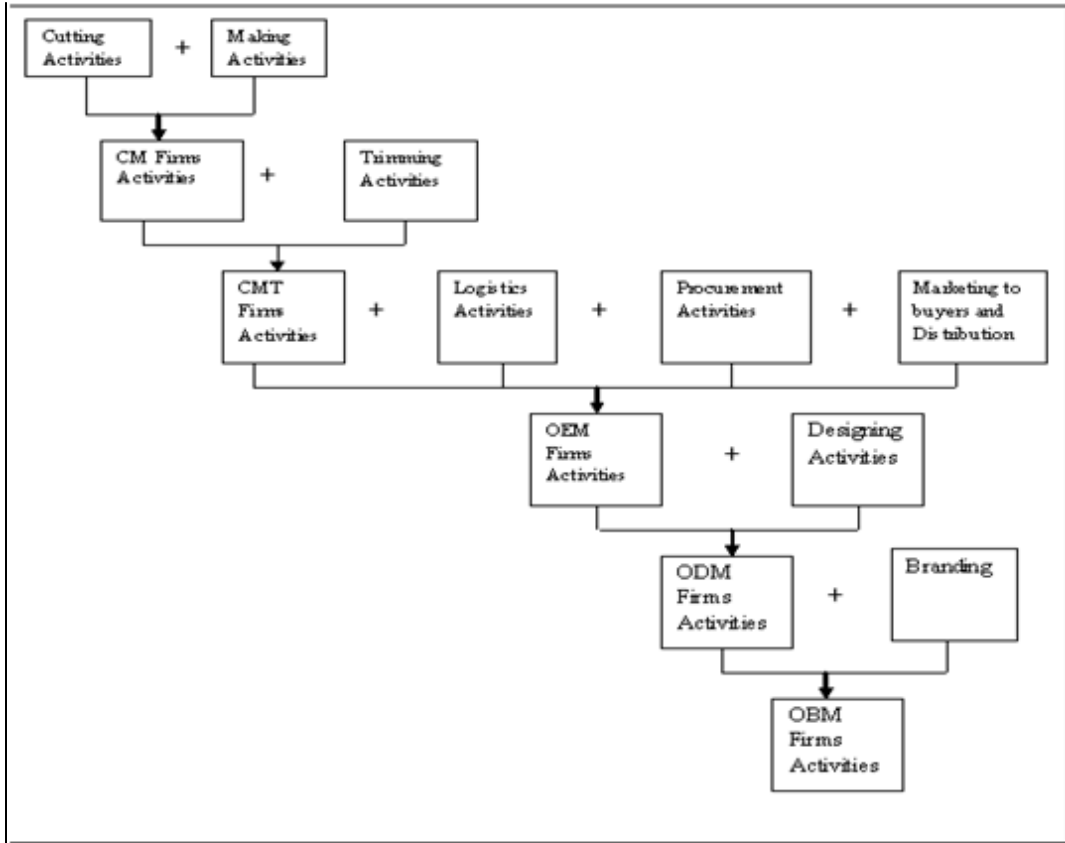


Figure 2: In-house vertical scope in apparel manufacturing.

Gereffi's explanation of industrial up-gradation into branding, designing, commercial activities especially procurement, logistics function and marketing and distribution can be viewed as a vertical integration from the view point of corporate strategy defined by Porter (1985). If CMT firms integrate themselves to designing, logistics or procurement functions, it means that the firms have increased their scopes of doing business towards up-stream and down-stream. The concept of vertical integration, value chain integration and Gereffi's industrial up-gradation in apparel industry are same phenomena.

Bangladesh should follow the same path of industrial up-gradation or vertical integration of East Asian nations. The East Asian nations did not achieve this path all on a sudden. They gradually introduced many cutting edge technologies like computer aided design (CAD), computer aided manufacturing (CAM) and enterprise resource planning (ERP) etc and therefore, could pursue for vertical integration by undertaking the relevant businesses.

In the part of literature review (the second part) the study will show logical relation between vertical integration and competitive advantage and between competitive advantage and firm performance. Here Porter's corporate strategy on value chain integration is an important view point. In the third part, the study discusses research methodology on the basis of structural equation

modeling (SEM) and in the fourth part it analyses the result. In the fifth, sixth and seventh part the implications of the study, future research direction and conclusion are respectively presented.

## **LITERATURE REVIEW**

### **Vertical Integration**

The degree to which a firm owns its upstream suppliers and its downstream buyers is referred to as vertical integration (Grant, 2010). Vertical Integration can have a significant impact on a business entity in positioning itself in the industry with respect to cost, differentiation and other strategic issues and because of that vertical scope of the firm is an important consideration in corporate strategy. According to Porter (1985) for devising corporate strategy the firms have to consider four types of competitive scopes namely segment scope (scope of product varieties), vertical scope (the extent of in-house activities), geographic scope (the range of regions and countries to operate) and industry scope (the range of related industries to operate). From Porter's explanation we find, vertical integration is one of the competitive scopes for devising corporate strategy.

Vertical integration has many advantages and disadvantages. According to Grant (2010) the advantages of vertical integration and other competitive scope of corporate strategy are based on following three concepts namely- a) increase of economies of scope in resources and capabilities; for example in apparel business, firms can share the common IT resources like CAD, CAM and ERP or can reduce communication and transportation cost for several related business like logistic, marketing and distribution. b) transaction cost reduction; for example: apparel firms can increase control over input through supply chain integration and this also gives the opportunity for differentiation, increasing entry barrier, pooling negotiation power, investing in highly specialized assets and c) decrease of costs of corporate complexity; for example the apparel firms can improve supply chain coordination, capturing upstream and downstream profit margin. The disadvantages of vertical integration are: a) increased bureaucracy b) not gaining specialized competency and c) costly exit barrier etc.

## **COMPETITIVE ADVANTAGES**

### **Porter's Generic Competitive Strategy and Competitive Advantages**

Competitive advantage refers to an edge that allows an organization to deal with market and environmental forces better than its competitors (Porter, 1985). The strategy for gaining competitive advantage is competitive strategy and it is mainly formulated by targeting three objectives. These are: a) cost leadership- firm's way to gain sustainable cost advantage b) differentiation- firm's way to differentiate itself from the competitors and c) focusing- firm to choose a segment so that competitive advantage grows out of a focus strategy. It may be of two types: cost focus or differentiation focus. Porter stated that a firm should not hanker after both cost leadership strategy and differentiation strategy.

A significant contribution of Porter in the pursuit of firm's competitive advantage is five forces model (1979). Five forces model helps the firm in taking decision on how to interact with external factors on the basis of its internal factors. The second important thing of Porter in the field of firm's competitive advantage is value chain analysis (Porter, 1985). According to Porter, every firm is a collection of activities that are performed to design, produce, market, deliver and support its product and all these activities can be represented using a value chain. He divided the activities of value chain into two parts: one is primary activities and another is support activities. He said that the extent of integration into activities plays a key role in gaining competitive advantages. Another important issue of Porter that is relevant to competitive advantage is Bain's (1972) theory of structure-conduct-performance or SCP model. Porter (1981) stated that the relations among industry structure, firm's conduct and firm's performances are not only unidirectional but also circular.

Considering the issue of five forces model, value chain analysis and S-C-P model Porter stated that the external forces like industry structure, buyers' power, suppliers' powers or the rivalries' power immensely create pressure on the firms. The activities of entire value chain which are interrelated have to face this pressure. On the basis of the nature of linkages in value chain and its interfaces with the external factors, Porter suggested that firms should choose either cost leadership or differentiation strategy. But Hill (1988) and Gupta and Somers (1996) empirically showed that a firm can achieve or adopt certain manufacturing systems which ensure both cost effectiveness and customization without sacrificing any of the competitive advantages. Implementation of lean manufacturing system in the Japanese automobile companies is an example of that.

### **Capability Based View and Competitive Advantages**

Stalk, Evans and Shulman (1992) brought the concept of capability-based view (CBV). Capability based view spawned off resource based view (RBV) and also it logically extends Porter's Generic competitive strategy. In generic competitive strategy, Porter (1985) improvised the objectives of firm's competitive advantages (cost leadership, differentiation and focusing) and resource based view (RBV) further embellishes Porter's explanation of competitive advantage by accommodating sustainable competitive advantage into it. Generic competitive strategies suggests about the objectives of competitive advantage. But RBV emphasizes on the means of achieving the objectives of competitive advantages and it does not suggest anything about the objective of competitive advantages. It states that resources have to be valuable, rare, in-imitable and organized to be exploited (Penrose, 1959). In together it stands for VRIO. But the missing link between Porter's generic competitive strategy and RBV is that the means (VRIO) cannot be achieved all on a sudden even the firms have all the intention to achieve these. CBV links these two theories by suggesting that firms have to develop specific capability through path dependent process by dint of continuous gathering of experiences (Ray et al., 2004).

To understand why CBV is important to link the generic competitive strategy and RBV, and how CBV prescribes for the objectives of competitive advantages we have to find the differences

between RBV and CBV. According to Helfat and Peteraf (2003) RBV deals not only with assets but also organizational capabilities. Then the question arises how the concept of capability is different in RBV and CBV. In RBV capability means organizational capability but in CBV, capability means dynamic capability and it covers various entities like organization, individual employees and teamwork etc. In RBV, a resource refers to an asset or input to production (tangible or intangible) that an organization owns, controls or has access to on a semi-permanent basis and organizational capability refers to the ability of an organization to perform a coordinated set of tasks utilizing organizational resources, for the purpose of achieving a particular end result. But in CBV capability concept injects several important magnitudes which bring dynamism in resource development. Consequently, Helfat and Peteraf (2003) have named the concepts of CBV as dynamic RBV. According to, Helfat and Peteraf (2003), Stalks et al. (1992), and Jacobides and Winter (2005), the important concepts, emphasized by CBV but absent in RBV are: i) Specific capability development is more important than general capability ii) Capability is up-graded by evolutionary process. It involves several development stages iii) Capability of a firm has a lifecycle and it is path dependent iv) In course of time capability in firms tries to set a routine for performing highest possible level of functionality. iv) Capability development coordinates individual capability and organizational capability v) Creation of new capability always look for new business opportunity. CBV brings the issue of team work and social capital.

Tece (1997) also describes CBV as creation of dynamic capability. Dynamic capability is defined as the firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments. Dynamic capabilities thus reflect an organization’s ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions. Therefore, dynamic capability gives a momentum to the resources of the firm for which resource continuously makes itself firm specific in changing environment (see figure 3).

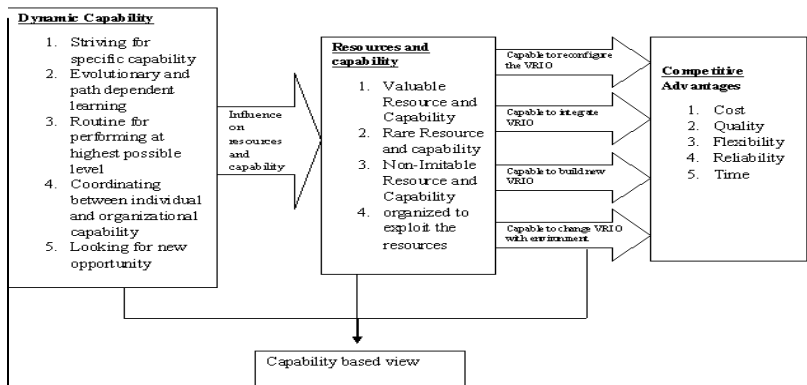


Figure-3: Capability based view and competitive advantage



Barney (2001) states that what should be the appropriate business process cannot be always clearly understood in the short to medium term. He asserts that to create any of the advantages, whether it is price leadership, superior product or superior customer service a firm needs to develop specific capabilities. Until such capabilities are developed, the strategy and its purported advantages remain theoretical. Therefore, according to CBV, it is the capability that actually delivers the advantages sought by the strategies by Porter. But a big difference in pursuing the objectives of competitive advantages is that unlike Porter's suggestion of either choosing cost or differentiation, CBV supports for many types like cost, quality, dependability or flexibility simultaneously (Sehgal, 2011). The theorists of CBV believe that if the target is specific and if the process is specific a firm can strive for several sorts of objectives of competitive advantage.

Sehgal (2011) stated that for devising a strategy for supply chain management, CBV is very important. If a firm wants to integrate itself through supply chain, CBV is a good analytical approach to justify its position. In supply chain integration, interrelated business processes are to be considered rather than individual process and the single business process which is more prudent to support the entire value chain will be able to stay inside the supply chain, otherwise the firms would be usurped by the competitors. Sehgal finds four types of competitive advantages to be gained by the firms in supply chain management on the basis of CBV. These are: a) cost advantage (whether the business process is cheaper than other firms b) quality advantage (whether defects are lower than other firms) c) time advantage (whether process is faster than other firms d) efficiency advantage (whether throughput is superior to other firms).

**Table-1.** Progress of the concept of competitive advantage on the basis of Porter's generic competitive strategy, RBV and CBV and its relevance to this study:

| Theories  | Main statement or finding  | Idea relevant to this study   |
|---|--|---|
| Porter's generic competitive strategy (Porter, 1979)  | Three generic competitive strategies are cost, differentiation and focusing. Firms should choose either cost or differentiation examining the situation on the basis of five forces model, value chain analysis and S-C-P model. | Apparel firms' competitive advantage may be cost or differentiation and this has to be decided on the basis of buyers and suppliers power in the GAVC.  |
| Resource-based view by Penrose (1959)                 | Valuable, rare, in-imitable and organized to exploit the resources are the means of gaining sustainable competitive advantage  | It does not suggest anything about the objectives of competitive advantages. Apparel manufacturers have to make its business process, manufacturing process and products different from its competitors to achieve VRIO |
| Capability-based view (Barney, 2001; Ray et al.,2004) | To achieve price leadership, superior product or superior customer service that a firm needs to develop specific capabilities through path dependent process.  | With a view to achieving all sorts of competitive advantages simultaneously, apparel firms have to continuously improve their capabilities through experience and knowledge   |

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| <p>Capability-based view in supply chain management. (Sehgal, 2011).</p> | <p>For devising a strategy for supply chain management, capability based view is very important. Cost, quality, time reliability and flexibility simultaneously should be the objective of competitive advantages in supply chain management</p> | <p>By utilizing strategic supply chain (for example leagile) apparel firms should pursue for cost, quality, time, reliability and flexibility advantages simultaneously through capability improvement by path dependent process</p> |
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## INFLUENCE OF VERTICAL INTEGRATION ON COMPETITIVE ADVANTAGE

### Porter’s Generic Competitive Strategy and the Relation between Vertical Integration and Competitive Advantages

**Value Chain Analysis in Porter’s Generic Competitive Strategy:** To analyze the specific activities through which firms can create competitive advantages, it is useful to model the firm as a chain of value creating activities. Competitive scope can have a powerful effect on competitive advantage because it shapes the configuration and economics of the value chain. As discussed earlier there are four dimensions of scopes that affect the value chain namely segment scope, vertical scope, geographic scope and industry scope. Among the competitive scopes defined by Porter (1985), the vertical scope’s feasibility can be understood by value chain analysis and in case of GAVC Gereffi defined as industrial up-gradation. According to Porter (1985), the linkages between suppliers’ value chain and firm’s value chain provide opportunities for the firm to enhance its competitive advantages. It is often possible to benefit both the firm and suppliers by influencing the suppliers’ value chains to jointly optimize the performance of activities or by improving coordination between a firm’s and suppliers’ chains. It is not a zero sum game in which one gains only at the expense of other but a relationship in which both can be benefitted.

The activities through vertical scope are known as vertical integration. For the apparel firms both the suppliers and lead firms can be benefitted if they analyze what should be limit of specialization and what should be limit of integration while devising supply chain strategy. On the basis of five forces model of Porter, the ability of suppliers and lead firms vary from supply chain to supply chain.

On the basis of value chain analysis, Fronmueller and Reed (1996) divided vertical integration into two parts for describing competitive advantage potentials. One is backward vertical integration (BVI) and another is forward vertical integration (FVI). Perry (1978) found that by BVI, firms can reduce production cost. Because firms with BVI can get correct information regarding supply conditions and prices. This allows more efficient production schedules and avoids payment of economic rents on supplies. On the other hand, Perry (1978) and Levitt (1980) found that FVI can enable the firm to achieve increased differentiation and subsequently safeguard the resulting potentiality for economic rents. Levitt stated that any product and service can be differentiated if

the whole product mix is considered. Successful marketing differentiation depends largely on the consumer's reaction and because of that proximity to the consumer should be increased. Thus, the closer the economic stages, the greater the potential for differentiation. Harrigan (1980) empirically showed that FVI can provide product differentiation advantages that are difficult to imitate. The reason is that for fashion apparel, the retail environment appears to be a significant factor in product differentiation. Consequently, linkage between production and marketing bring the manufacturers close to the final consumer which eliminate risk in product differentiation. But Frommueller and Reed (1996) , in a study done on 1,000 US companies, found that both BVI and FVI play a role in reducing the production cost. FVI can also reduce the cost because it helps in differentiation which in turn reduces opportunity cost and cost incurred due to advertising spillover.

**Economies of Scope in Porter's Generic Competitive Strategy:** Vertical integration is the combination of technologically distinct production, distribution, selling and other economic processes within the confines of a single firm (Porter, 1987). In discussing different strategic motives for vertical integration, Porter (1980) argues that the strategic purpose of vertical integration is to utilize different forms of economies, i.e. cost savings, like economies of combined operations, economies of internal control and coordination, economies of information and economies of stable relationships. In an empirical survey done by D' Aveni and Ravenscraft (1994) on 466 large companies of USA, it is found that in a vertically integrated firm, economies of scope affect general and administrative and R&D expenditures. Takeuchi and Nonaka (1986) stated that integration results in information transfer, technical learning, and problem solving.

**Transaction Cost Economics and Porter's Generic Competitive Strategy:** Coase (1937) defined transaction costs as the costs of using the price mechanism, which he sees in the cost of information (in his language, the cost of discovering what the relevant prices are) and the cost of writing (negotiation and concluding) contract. Transaction cost in the supply chain differs due to different global governance types (Williamson, 1991). This governance types depend on some criteria like bounded rationality, opportunism, environmental factors, asset specificity and small number condition. Here in the apparel value chain, very often transaction cost is higher for the manufacturers due to opportunistic behavior of the buyers. The number of buyers is small but the number of manufacturers is too many in the apparel supply chain. Because of this, the manufactures are always in the weaker position in the pursuit of bargaining. A good strategy to overcome this problem is to integrate vertically so that the manufacturers can extend their influence throughout the supply chain and eventually can pool the negotiation power. Gereff (1999) explains same phenomenon by dividing global governances into six types namely: market, modular, relational, captive and hierarchy. He explains that apparel firms usually moves from captive type of value chain to relational value chain as they start to attempt for full package supply including supplying inputs, designing, quality controlling, delivering on-time etc.

## **Resource Based View and the Relation between Vertical Integration and Competitive Advantages**

**Diversification, Asset specificity and Vertical Integration in Resource Based view:** Firms vertically integrate because of asset specificity of the resources of the suppliers in the backward or lead firms in the forward linkages. But if the capability and learning of another business is difficult to achieve, it has to depend on external resources rather than driving for vertical integration. For example: in this study, apparel manufacturer may achieve superior technology and production process if it undertake designing, procurement or marketing activities. Silverman (1999) empirically showed that a firm can exploit its resources more efficiently if it diversifies its business into several related businesses. The diversified businesses give the firm an opportunity to share the common resources and at the same time create new resources and capabilities, which are rare to the competitors. Therefore, it creates entry barriers and eventually, production process becomes a valuable resource for the firm and finally the firm can gain competitive advantage. The more related diversification supports more extensive exploitation of application-specific resources than does unrelated diversification (Montgomery and Wernerfelt 1988). And in the study of strategic management, vertical integration brings diversification (Grant, 2010). Therefore, the logics of Silverman can also be applicable in vertical integration. Prahalad and Hamel (1990) also said that vertical integration into relevant businesses helps firm acquire complementary competencies. By analyzing corporate data of some top business groups in nine emerging countries, Gullien (2000) showed that the vertically integrated business groups located in imperfect market economy can attract the foreign buyers and foreign investors more than their competitors. The main reason he explained is that the vertically integrated businesses can share both domestic and foreign resources prudently. Moreover, vertically integrated firms' resources are of diversified and therefore their experience is of diversified nature. Hence, they can absorb foreign technology more quickly than other firms.

**Transaction Cost Economics and Vertical Integration in Resource Based View:** Volberda (1996) stated that in a volatile fashion market vertical integration may be a burden for the firms in gaining competitive advantage. In volatile market, market demand cannot be forecasted. Consequently, the suppliers get the opportunity to seek additional rent and buyers hold additional power in negotiation. But on the basis of agency theory and transaction cost economics, Richardson (1996) empirically showed that vertical integration in fashion market even in volatile environment, helps firms very responsive and after vertical integration their assets and capabilities are at low risk of obsolescence. Therefore, suppliers or buyers do not get any chance to be rent seeker. He further argued that full vertical integration may not be effective but at least control over value chain or in-house vertical integration is effective for gaining competitive advantages. Because new products mainly involve styling and fabric changes that do not usually require new technology. Hence, investments in design and manufacturing assets are not subject to great risk of obsolescence. Nor are long term alliances at great risk of becoming burdensome because of technical obsolescence.

## Capability Based View (CBV) and the Relation between Vertical Integration and Competitive Advantages

**Evolutionary process and vertical integration in capability based view:** Jacobides and Winter (2005) stated that specific capability changes the transactional environment thereby reduces transaction cost and eventually causes vertical integration in the firms. Again vertical integration enhances capability and then capability reduces transaction cost. Consequently capability, transaction cost and vertical integration change in a co-evolutionary circular process. Vertical integration creates the scope to create new capabilities by combining the old capabilities of the individual businesses in evolutionary process. The same phenomenon is described as dynamic capability by Teece et al. (1997). It states that according to resource based perspective firms try to create firm specific asset through vertical integration with a view to achieve competitive advantages. But in reality firms are not always ready to achieve competitive advantages even if it is equipped with resources after vertical integration. Firms have to acquire firm specific management and technological capabilities in evolutionary and path dependent process to gain competitive advantages (Teece et al. 1997; Afuah, 2001). The notion ‘evolutionary’ recognizes that history matters. History has to be analyzed because learning tends to be local. Learning is often a process of trial, feedback and evaluation. The reason is that if too many aspects of firm’s learning environment change simultaneously, the ability to ascertain cause-effect relation is confused. Consequently, path dependent evolutionary process is needed to understand the cause-effect relations one by one, then to prioritize the problems and accordingly to develop the capability for achieving competitive advantages through vertical integration.

**Supply chain management and vertical integration in capability based view:** Sehgal (2011) showed that supply chain integration enhances capabilities and thereby, gains competitive advantages. Supply chain is the key functional area for creating competitive capabilities. Supply chain enhances capabilities and help in reducing costs or increasing the efficiency of capital used, while simultaneously supporting operational flexibility and agility. All of these can be directly leveraged to support most basic business strategies based on price, leadership, differentiation or focus. According to Sehgal’s explanation, supply chain resembles Gereffi’s industrial up-gradation in GAVC. According to Sehgal, through supply chain integration following competitive advantages can be gained.

- a. **Time Advantage:** After vertical integration the firm undertakes different steps of the value chain under the same roof at a time. Thus, negotiation time and transfer time are omitted and therefore, the entire value chain works faster. Richardson (1996) empirically showed that vertically integrated apparel businesses are fertile scope for implementing quick response (QR) system. Utilizing information technology, quick response, apparel firms have developed new capabilities in rapid learning and communication. QR has enabled the savvy designers quickly imitate many designs or even create new designs. In a study done on 643 US firms, Swink and Song (2007) showed that while commercialization of a new product, if

manufacturing and marketing activities are vertically integrated, the lead time can be shortened. The reason is that if manufacturing and marketing are vertically integrated production planning and demand management activities can be well coordinated. Both manufacturing and marketing personnel can adjust their planning by knowing each other's capability. Studying 150 suppliers of General Motors, Vickery et al. (2003) showed that by integrating supply chain the firms can share the information technology and because of that the firms can quickly response which eventually enhances the financial performance.

- b. **Cost Advantage:** After vertical integration, if the firms are involved in procurement activities, the firms can purchase the critical inputs at low price because of combined purchase. The firm can share the information and information technology so that the production process and business process become cheap. D' Aveni and Ravenscraft (1994) empirically showed that although in few cases the firms rather losses due to losing specialization in production, by vertical integration, as a whole the firm's business process can save money and the overall administrative cost, R&D cost and media advertising cost are reduced.
- c. **Quality Advantage:** Vertical integration allows the firm for standardization, automation and simplification of the process, because the firm can deal in integrated process. Consequently, the quality of products improves. Another thing is that because of integration the firm can check the process and find the defects more efficiently. Swink and Song (2006) empirically showed that vertical integration between manufacturing and marketing activities results in greater product design quality where design quality is a holistic concept comprised of both product performance and conformance attributes. The reason is that manufacturing personnel do not understand innovation needed for market very often and locked into conventional solutions and technologies. Consequently, integration opens their eyes and arouse the passion for both product and process innovation. Harrigan (1985) conducted a study on 140 successful and 52 unsuccessful vertically integrated firms and found that the firms which can successfully transfer the resources internally can ensure the product quality. The successful vertically integrated firms can protect the knowledge about standardization which is unknown to non-integrated firms.
- d. **Efficiency Advantages:** Vertically integrated firms can control business processes in several steps. Therefore, vertical integration gives the firm more volume flexibility and feature flexibility. Because of this, the firm can provide higher throughput for any type of order of the lead firm. The efficiency advantage can also be created by maximizing asset utilization by vertical integration in the supply chain. Volberda (1996) and Richardson (1996) showed that vertical integration has allowed the firms to achieve high degree of operational flexibility than their less integrated competitors. By linking designing and production with retailing through integration, they are better able to manage flexible production to demand within the quickest possible time even in volatile fashion market.

**Table-2.** Different concepts of competitive advantages and their relevance to vertical integration of apparel firms

| Theories  | Main statement or finding   | Idea relevant to this study   |
|---|---|---|
| Porter's generic competitive strategy (Porter, 1979)              | Three generic competitive strategies are cost, differentiation and focusing. Firms should choose either cost or differentiation examining the situation on the basis of five forces model, value chain analysis and S-C-P model.          | Apparel firms' competitive advantage may be cost or differentiation and this has to be decided on the basis of buyers and suppliers power in the GAVC.  |
| Resource-based view by Penrose (1959)                             | Valuable, rare, in-imitable and organized to exploit the resources are the means of gaining sustainable competitive advantage   | It does not suggest anything about the objectives of competitive advantages. Apparel manufacturers have to make its business process, manufacturing process and products different from its competitors to achieve VRIO       |
| Capability-based view (Barney, 2001; Ray et al.,2004)             | To achieve price leadership, superior product or superior customer service that a firm needs to develop specific capabilities through path dependent process.   | With a view to achieving all sorts of competitive advantages simultaneously, apparel firms have to continuously improve their capabilities through experience and knowledge   |
| Capability-based view in supply chain management. (Sehgal, 2011). | For devising a strategy for supply chain management, capability based view is very important. Cost, quality, time reliability and flexibility simultaneously should be the objective of competitive advantages in supply chain management | By utilizing strategic supply chain (for example leagile) apparel firms should pursue for cost, quality, time, reliability and flexibility advantages simultaneously through capability improvement by path dependent process |

### The Variables for the Study on Apparel Manufacturing Firms

The means of gaining competitive advantages according to all the above mentioned theories are supportive for explaining or advocating the relation between vertical integration and competitive advantages. But while selecting the objectives of competitive advantages in the case the Bangladesh apparel firms all the theories are not relevant to the case of this study. For selecting the objectives of vertical integration in this case, we need to consider certain issues like: i) the advantages for which the buyers select the apparel manufacturers ii) the external and internal forces and the position of the apparel manufacturers in supply chain or GAVC. About the first point, if we try to find out the competitive advantages for which a manufacturer is selected, we see that all the relevant competitive advantages like cost, quality, flexibility and time advantages are important in Bangladesh case (Razzak, 2005). Then the second point, regarding the position of the manufacturers in the supply chain, we see that apparel manufacturers are positioned in the middle of GAVC and their negotiation power is weak (see figure-1). The reason is that, there are too many manufacturers (rivalries) to offer products at low cost and at the minimum possible lead time. To influence over suppliers and buyers they have to fight the battle with all the relevant competitive

advantages. And this cannot be achieved by comparatively financially and technologically weak (in comparison to China, Taiwan and Hong Kong) Bangladeshi firms very quickly (Rahman et al, 2008). They have to achieve it through evolutionary process. Therefore, situation demands for following the strategy of CBV which support to struggle for all the relevant competitive advantages like cost, quality, flexibility and time advantage and reliability. Again according to Wheelwright (1984), manufacturing flexibility can be of two types: volume flexibility and feature flexibility. In case of time advantage, due to usage of software in apparel manufacturing, time advantage is well understood as QR system (Ananth and Mark, 1997). So the variables for competitive advantages are cost, quality, QR, volume flexibility, feature flexibility and reliability.

### **Firm Performance**

From a financial perspective, the key factors in determining the sustainable growth rate are the generation of earnings and the retention of those earnings in the business.

The keys to long-term financial success of any business are earnings behavior (the ability to generate income) and savings behavior (the ability to retain earned income and reinvest it in the business). Thus, the higher the income-generating capacity of the firm business, and the larger the proportion of that income that is ploughed back into the business, the higher the sustainable growth rate (Miller et al, 2001). Here in this study ROA, capital growth, profit growths and sales growth are the indicators of firm's financial performance. Growth rather than general performance of the financial indicators have been chosen because apparel industry of all the prospering apparel exporting countries including Bangladesh are still in expansionary phase (Rahman et al., 2008) Another important indicator for apparel firms' performance is number of buyers (Razzak, 2005). Due to changing scenario in apparel export-import policy the buying countries quickly change their preferences. But manufacturing firms' performance can overcome this problem. The more the number of buyers the more the export destination is secured.

### **Influence of Competitive Advantage on Firm Performance**

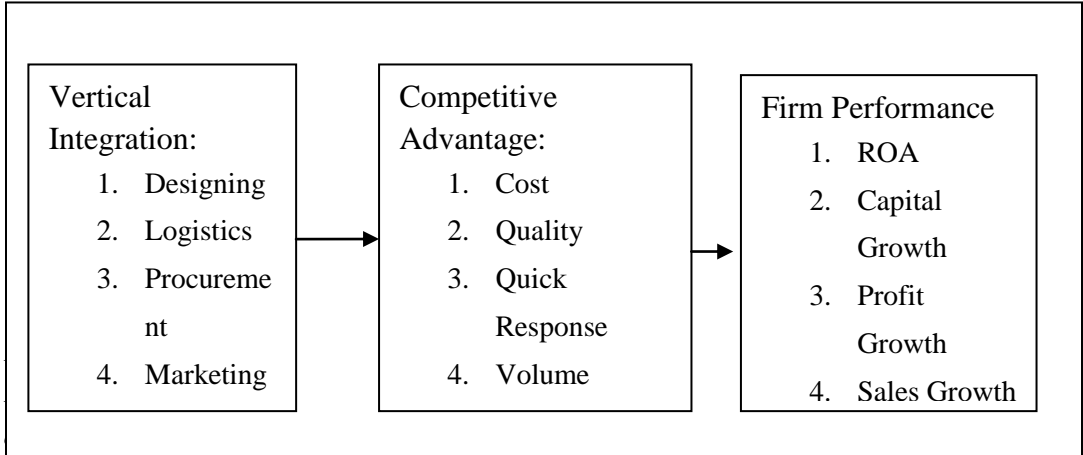
The firm's achievement of competitive advantages shall reduce the cost, so that definitely this will improve all the financial indicators like ROA, capital growth, profit growth and sales growth etc.(Miller et.al 2001). Superior quality as a competitive advantage will increase the market share, so that all the financial indicators will improve (Porter, 1985). Both cost and quality advantage shall increase the buyers' number. Therefore, as a whole, gaining competitive advantages shall improve the firm performances. Several researchers have found product competitive advantage to be significantly associated with product success and market performance (Song and Parry, 1997; Li and Calantone, 1998). Swink and Song (2006) empirically showed that new product competitive advantage is positively associated with project's return on investment.



**Conceptual Framework**

As per the above discussion, this study will strive to find the impact of vertical integration on competitive advantages and the impact of competitive advantages on firm performance of Bangladesh apparel sector (see figure 4).

**Figure-4.** Conceptual Framework



*H2: The more achieving of competitive advantage the more realizing of firm performances.*

**RESEARCH METHODOLOGY**

A questionnaire survey is implemented to collect data by Likert scale. Therefore the collected data are perceived rather than objective. Then by using SPSS 18.0, the collected data of the observed variables are extracted as component by Exploratory Factor Analysis (EFA) to identify the factors. Further the factors are tested against Confirmatory Factor Analysis (CFA) by AMOS 20.0 and finally under SEM, the conceptual model was estimated by AMOS 20.0.

**Structure of the Questionnaire**

In order to collect necessary data for testing the hypothesized model, we construct a questionnaire consisting of four parts. The first part is the introductory part asking about general matters of the firm. In the second part, for judging the degree of vertical integration, questions are asked about which value adding steps the firms are involved except cutting-making-trimming like designing, procuring and marketing and distribution activities. The second part and third part are consisted of the questions about competitive advantages like cost, quality, feature flexibility, volume flexibility, dependability and quick response. The fourth part is consisted of questions regarding firm performance like capital growth, profit growth, ROA and increase in the number of buyers. But during the conduct of the survey everyone could not give answers about return on asset because of lack of knowledge about it and here it is to be mentioned that almost all the respondents were either production mangers or merchandisers.

## Respondent Profile

The survey is conducted on 180 firms located in both EPZ and non-EPZ area. 100 firms from two EPZ area namely Dhaka EPZ and Chittagong EPZ are surveyed and rest 80 firms are surveyed in non-EPZ area like Mirpur, Gazipur and Ashulia under greater Dhaka region.

## DATA ANALYSIS AND RESULTS

### Exploratory Factor Analysis (EFA)

As per the conceptual model, this study has constructed the structure of the model consisted of three factors namely vertical integration (VI), competitive advantages (CA) and firm performance (FP). All these three factors are theoretically inter-linked according to the description of literature review of this study. Hence we do not need to find any other relationship patterns by conducting EFA for all the variables together. Rather this study tries to check whether the variables we are going to use for each latent variable are unidirectional and able to explain the latent variables with sufficient variance. If any of the observed or manifested variables are not suitable for explaining the unobserved/ latent variable it should be eliminated from the group of the observed variables on the basis of component matrix or rotated component matrix of principle component analysis (PCA). After constructing the components, If any satisfactory relation among the components are not found, reformulation by eliminating the observed variables having less standard deviation and too dispersed mean can be done. The variables can be eliminated until a satisfactory value of Cronbach's Alpha is got (Blunch, 2008). After reformulation the study is expected to find a satisfactory relationship among the cluster of variables.

**Table-3.** Descriptive Statistics

| Descriptive Statistics |        |                |            |
|------------------------|--------|----------------|------------|
|                        | Mean   | Std. Deviation | Analysis N |
| Design                 | 2.2167 | 1.19718        | 180        |
| Procurement            | 2.6167 | 1.20648        | 180        |
| Marketing              | 2.5833 | 1.05107        | 180        |
| Logistics              | 3.0611 | 1.58260        | 180        |
| Volume Flexibility     | 4.2833 | .69536         | 180        |
| Dependability          | 3.2167 | 1.46572        | 180        |
| Quick Response         | 2.9500 | .93519         | 180        |
| Quality                | 3.0222 | .90902         | 180        |
| Feature Flexibility    | 2.9056 | .91357         | 180        |
| Cost                   | 3.4833 | .98862         | 180        |
| Capital Growth         | 2.6778 | 1.01197        | 180        |
| Profit Growth          | 2.5500 | 1.03716        | 180        |
| Schedule Performance   | 2.9000 | 1.05227        | 180        |
| Sales Growth           | 2.8444 | 1.08737        | 180        |
| Buyers Number          | 3.7556 | .93128         | 180        |

Before doing EFA the internal consistency among the questions regarding each factor was checked by reliability test. It is done by measuring Cronbach's alpha. Cronbach's alpha for VI, CA and FP

were respectively .701, .708, .722 which indicate that the questions regarding each factor are unidirectional (the accepted level is .70) (Cronbach and Shavelson, 2004). Then PCA is performed in SPSS 18.0 for EFA.

The observed variables used for EFA for VI are procurement activities, logistics activities, design activities and marketing and distribution activities. All the variables except logistics has constructed the component of VI. Logistics is eliminated due to low factor loading and not being unidirectional with other variables. In the construct of competitive advantages cost, quality, feature flexibility and quick response constructed the component. Volume flexibility and reliability were eliminated due to not being uni-directional and having low standard deviations. And finally for FP all the observed variables capital growth, profit growth and sales growth make one construct. Buyers number was eliminated due to not being unidirectional with the rest of the variables and having low standard deviation. The main reasons for eliminations in all the cases are due to lack of correlation with the rest of variable or due to low factor loading. The value of KMO in EFA for VI, CA and FP are .669, .720 and .619 respectively. The accepted level for KMO test is 0.6.

**Confirmatory Factor Analysis**

After EFA, a diagram according to the conceptual framework is drawn in AMOS 20.0 and run for CFA by connecting the unobserved variables by double headed arrows. In CFA each item is restricted to load to pre-specified factor and items were pre-specified according to the result of EFA.

From the table below, we see that all the value in the model fit indicators proved good except RMSEA. But according to Schermelleh-Engel et al., (2003) RMSEA less than .05 is good and RMSEA less than .08 is acceptable. So the value of RMSEA .062 is acceptable.

**Table-4:** Model fit statistics

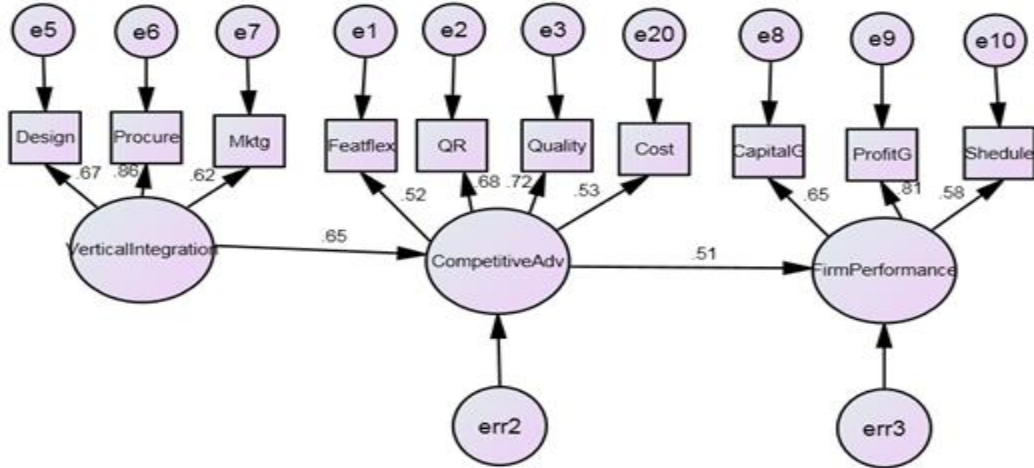
| Model Fit Indicators | GFI  | AGFI | CMIN/DF | RMSEA | IFI  | TLI  | CFI  |
|----------------------|------|------|---------|-------|------|------|------|
| Good Model Fit       | >.90 | >.80 | <3      | <.05  | >.90 | >.90 | >.90 |
| Value in this Model  | .888 | .848 | 1.895   | .071  | .898 | .873 | .896 |

Before doing EFA the Cronbach’s alpha of the entire gamut of variables are found out and it is .793 which is higher than the acceptable value .70. The composite reliability of the construct is .75 (higher than excepted level .70) which indicate good internal consistency and average variance extracted (AVE) is .61 (higher than accepted level .50). Convergent validity was evidenced by the significant standardized loadings of each item (.40 or higher) on its corresponding construct.

**SEM ESTIMATION**

After CFA by AMOS 20.0 the model is estimated by same AMOS under SEM (see figure 5). All the relations in the model are proved significant in the estimation having t-value less than .001 for two tailed test.

**Figure-5:** Diagram of structural equation modeling



**Table-4.** Model fit statistics in the estimation of structural equation modeling

| Model Fit Indicators | GFI  | AGFI | CMIN/DF | RMSEA | IFI  | TLI  | CFI  |
|----------------------|------|------|---------|-------|------|------|------|
| Good Model Fit       | >.90 | >.80 | <3      | <.05  | >.90 | >.90 | >.90 |
| Value in this Model  | .943 | .905 | 1.551   | .056  | .960 | .945 | .959 |

**RESULTS**

*From VI to CA:* From the estimation we see that competitive advantage is significantly influenced by VI. Here, if the standard deviation of the later goes by 1, the standard deviation of the earlier will go by .620.

*From CA to FP:* FP is significantly influenced by VI. Here if the standard deviation of the later goes by 1, the standard deviation of the earlier will go by .602.

So, both of the hypotheses are supported.

**DISCUSSION**

*The Relation between Vertical Integration and Competitive Advantages:* All the observed variables under the construct of VA are helpful for improving CA. There may be many reasons for explaining the influence of vertical integration on competitive advantage. First by vertical

integration into designing, procurement and marketing and distribution, the firms can set a strategic planning keeping ahead the overall vision. Market situation of procurement influences manufacturing planning and in the same way the ability of manufacturing and designing influences each other. So the firms can pursue realistic goals and objectives. Involvement in procurement, marketing and distribution activities gives the merchandiser opportunity to follow a market calendar. It drives the activities of product development schedule, sales appointment, manufacturing planning and shipping schedule. It establishes timetables for the completion of each season's line, sales objectives for the product in the lines and start and stop dates for shipping customers orders. Because of these the firms can reduce the lead time and enhance QR. By supply chain integration the apparel firms are able to better control, communicate and collaborate with the buyers. According to Rosenau and Wilson (2001), this is required for effective QR. By supply chain integration by BVI the firms undertake the sourcing decision. This gives the firm both cost advantage and feature flexibility.

Involvement in marketing and distribution activities brings the managers closer to the buyers. Consequently, they can sensitize the trend of style, color, size based upon direct observation, historical data and statistical analysis. Then according to the sales forecast the procurement activities can be planned much before getting order. Therefore, it links BVI and FVI. Because of these, the cost of purchasing goes down, designers get much time for creative thinking and merchandiser can strengthen their position in negotiation. By vertical integration the merchandisers can establish product information management system which provides the opportunity for online fashion designing and web based data management. Because of all these activities personnel working throughout the value chain acquire idiosyncratic knowledge and the businesses after vertical integration gain idiosyncratic bilateral synergy. All these things reduce the transaction cost and time.

According to the explanation of Rosenau and Wilson (2001), when procurement and marketing personnel and the designers work together like a team it provide a healthy environment that enables the designers achieve the most effective styling result. Therefore, vertical integration has enabled the Bangladeshi firms gain competitive advantage by differentiation, feature flexibility and quality.

For all those above mentioned reasons the variables under the construct of vertical integration has significant positive impact on competitive advantage.

***The Relation between Competitive Advantages and Firm Performance:*** From the result, it is seen that the construct of firms' performance is influenced by the construct of competitive advantage. According to Miller (2001), reduction in the cost of manufacturing increases profit and reduction in cost and up-gradation of quality in together increase sales. Therefore extra revenue earned by vertical integration is ploughed back as reinvestment in the business. Consequently, capital is also increased. But EFA and CFA did not take buyers number in the construct of FP. The reason may

be the nature of variable buyers number is exogenous and number of destinations of buyers depend on the bilateral and multilateral politics. So this is not unidirectional with other observed variables.

### **Implications for Apparel Firms and Their Associations**

From the analysis it transpires that for sustaining in the international market, industrial up-gradation or vertical integration can be a suitable strategy for the apparel firms in Bangladesh. Designing, procuring and marketing and distribution are very relevant business where same type of human resources and IT resources like CAD, CAM, and ERP etc. can be utilized. Moreover vertically integrated forms can create vertically integrated IT, HR and business processes which cannot be replicated by the competitors This would provide the firm advantage of asst specificity and idiosyncrasy of knowledge. Therefore, the firms should set a corporate strategy to integrate themselves through supply chain, even if it is not possible at the beginning. Case studies of Hong Kong, Taiwan and China tell us that CMT firms can successfully become OEM or ODM in course time through gathering of experiences (Gereffi, 1999). But it needs visionary objectives. Consequently, apparel firms in Bangladesh, even if these are not capable to drive with big capital at the beginning, should have an objective of vertical integration step by step.

From Rahman et al. (2008) and Paul-Majumder & Sen (2001), it is found that many firm owners in Bangladesh still believe that maintaining low labor cost through coercion is the only way to gain competitive advantage and thereby, to achieve firm performance. But likewise Taiwan and Hong Kong this study has proved that apart from cost advantage, improving QR, quality, differentiation and feature flexibility are also important competitive advantages for achieving firm performance. Therefore, the firm owners and managers should try to modernize the management, so that they can strategically gain various types of competitive advantages as well as cost advantages. This study proved that pursuing for different competitive advantages can increase capital growth, profit growth and sales growth.

### **FUTURE RESEARCH DIRECTION**

This study has shown whether vertical integration influences on competitive advantages and subsequently on firms performances or not. The result was positive. Therefore, eventually the subject invites the issue about which resources of the firm are the motivating factors for the vertical integration and by which process it can be done. A study can be done on that. Another study can be done that apart from firms' resources whether technological spill over from other local or foreign firm influences for vertical integration.

In this study, the data collected by Likert scale which is subjective method of data collection. Therefore, another same study can be done on the basis of objective data.

## CONCLUSION

Gereffi (1999) stated industrial up-gradation through value chain as a business strategy for gaining competitive advantages and firm performances for apparel manufacturers and this study has striven to show this relation empirically. Previous studies on apparel firms' strategic management have not showed the relation between vertical integration and competitive advantages on the basis of several important pieces of literature like Porters generic competitive strategy, RBV and CBV in together. Consequently, this study has tried to accommodate all the important pieces of literature contributing in the field of competitive advantages. As opposed to Porter's generic competitive advantage this study has tried to show empirically that both cost and differentiation along with several other types of competitive advantages can be pursued by the firms. This supports concept of Hayes and Pisano (1996), Hill (1988), Gupta and Somers (1996) and Sehgal (2011). Therefore, this study recommends the apparel firm owners of Bangladesh that they should not stick to only labor cost reduction strategy. They should mull over other means also for gaining competitive advantages for making profit. The owners and managers have to keep in mind they should try to improve their resources and capabilities in a way that they can share these in new opportunities of business. This would give the fitness for survival in GAVC. The study reveals that Bangladeshi firms can pursue for industrial up-gradation and this will gain competitive advantages for the firms and thereby, achieve firm performance.

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