

Cluster Concept in Enhancing the Marketing Capability of Light Engineering Industry of Bangladesh: A Comparative Study

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ABSTRACT

Though the Light Engineering industry occupies an important space within the Bangladeshi industrial domain, very few attempts of scholarly work to understand and improve the capabilities of this sub-sector has been undertaken in the past. Most of these problems of the sector can be grouped into two fronts: technological deficiencies and marketing inefficiencies. The technological deficiencies are outside the purview of this research, while the marketing challenges are at the center of the research. The objective of this research is to compare perception of different groups of light engineering small enterprises to enhancement of marketing capability through cluster concept. As per the methodology, the first stage of this research comprised of an exploratory research component. The second stage of this research was a conclusive research, where the insights gained from exploratory research were verified. Sampling technique was quota sampling under non-probability sampling. Sample size was 60 representing all the groups. ANOVA test was used to compare perception of different groups of light engineering small businesses. After analysis of variance and F test of all the questions for groups from three dimensions, it was found that perception to enhancement of marketing capability through cluster concept of groups from two dimensions (assets value and number of employee) is positive and variation is also insignificant, i.e., most of the hypotheses are null. Overall perception of groups from another dimension (type of activity) is also positive but variation is significant, i.e., two third hypotheses are null and one third hypotheses are alternative.

JEL Classification Code: M31

1 INTRODUCTION

IN Bangladesh, most of the industries are primarily comprised of Small and Medium Enterprises (SMEs).

This sector has been contributing heavily in Bangladesh economy since its inception. In the manufacturing sector "Small Industry" means an industry in which the value/replacement cost of durable resources other than land and factory buildings is under 15 million taka and "Medium Industry" means where value/replacement cost is between 15 million to 100 million taka. In the non-manufacturing sector "Small Industry" means an industry in which fewer than 25 worker work (unlike family members in a cottage industry) and "Medium Industry" means where 25 to 100 worker work (Industrial Policy, 2005).

The Small and Medium Enterprises in Bangladesh contributed up to 25% of national gross domestic product in 2006, about 40% of gross manufacturing output, 80% of industrial jobs, and around 25% of the total labor force of the country. According to rough estimations, light engineering sector of Bangladesh created about 6,00,000 direct employment and at the same time around 20,00,000 indirect job opportunities in different supportive industries. The light engineering sector is largely comprised of SMEs. This sector occupies a unique position in the economy of Bangladesh. It acts as feeder to key national industries and plays a vital role in the socio-economic development of the country. These enterprises make signif-

icant contribution towards technological and economic development and employment generation. The product line of the light engineering sector is large and diverse. Machinery and spare parts produced by the entrepreneurs of the sector are supplied to various mills and factories such as jute, cotton, sugar, paper, textile, garments, fertilizer, tea plantation and processing industries, ferry, railways, power plants, construction sector, transport, pharmaceuticals, etc. Day to day technological progress, adaptation of innovative concept and technical expertise are the continuous process of activities in upholding a firm pledge to reach a sustainable position to meet the challenge in the world market and the environment of globalization. It has been upholding its role in developing and maintaining mechanized agriculture, maintaining continuity of vehicular transports and production of capital machinery and equipment of various descriptions for industrial and engineering sector (<http://www.beioa.net/> 2008).

Marketing is the anticipation, management, and satisfaction of demand through an exchange process (Evans and Berman, 1994). Effective marketing means delivering the goods and services that consumers want and need. It means getting products to them at the right time, in the right place, and at a price they are willing to pay. It means keeping consumers satisfied after the sale, and bringing them back to purchase again when they are

ready. That's not an easy job – especially if it is thought about the variety of goods and services a highly developed economy can produce and the many kinds of goods and services consumers want. Production is a very important economic activity. Although production is a necessary economic activity, some people overrate its importance in relation to marketing. Their attitude is reflected in the old saying: “make a better mousetrap and the world will beat a path to your door.” In modern economies, the grass grows high on the path to the better mousetrap factory – if the new mousetrap is not properly marketed. The point is that production and marketing are both important parts of a total business system aimed at providing customers with need-satisfying goods and services. Together, production and marketing supply five kinds of economic utility – form, task, time, and possession utility – that are needed to provide consumer satisfaction (Perreault and McCarthy, 2002).

Clusters are accumulation of firms in a geographic area and all of the aforementioned functions of marketing are directly or indirectly enhanced by geographical concentration of firms. Co-located firms reduce hassles of customers to look for and evaluate goods and services as they get huge offerings at a small geographic area. Operation from same geographic area helps in promoting products and services by sharing or joint activities. By collective and sharing initiative small businesses can enjoy transportation, storing, and standardization & grading facilities more smoothly than individual operation. Joint operation of small businesses can also reduce cost of different marketing activities. Co-location of forward linkage organizations can share uncertainties of sale, damage, stole and outdate more effectively by enhancing integration. Co-location and joint operation also help in collecting, analyzing, and distributing of the information needed to plan, carry out, and control marketing activities. This means an inter-firm network is created that facilitates all the firms present in the network.

Although it is not easy to define inter-firm networks, it can be seen as a group of firms using combined resources to co-operate on joint projects (Akoorie 1998, Ceglie et al., 1999). In business, networks take different forms and serve different objectives. Some examples include structured and formal networks, which even have their own legal personality. Other networks are informal; this is the case where groups of firms exchange ideas or develops broad forms of cooperation. Some of the firms aim at the general sharing of information, and others deal with more specific objectives such as joint ventures. Furthermore, it has been suggested that the entrepreneurs who choose to develop and maintain ties with other entrepreneurs are likely to outperform those who do not (OECD, 2000). Developed countries have different large-scale industries. Yet they give due importance on small-scale enterprises also. In developed countries where small-scale entrepreneurs are subjected to a great deal of “education” concerning the value of business services and generally have money to spend. BDS (Business Development services) provision continues to require public

subsidies and supply does not appear to create adequate demand. The European Commission spends a great deal every year to keep its small business information center and technology transfer programs going. In the United States, the nationwide system of Manufacturing Extension Partnership center provides a cautionary tale. Japan has reached such development stage through small-scale enterprises (Hatch, 2001).

Light engineering industry in Bangladesh has grown with informal cottage status over the years. This labor-intensive operation produces a diverse range of items having an annual valuation of about US\$ 120 million. These items include import-substitute machinery spares, plant machineries, small tools, toys, consumer items, paper products and bicycle for the domestic & international markets (http://www.boi.gov.bd/sector_brief.php). Light industries in Bangladesh produce a multitude of labor intensive goods including toys, consumer items, small tools and paper products for the domestic market. Export oriented production in light industries has gained momentum in the past few years (http://www.bizbangladesh.com/potential_sectors_investment.php).

Some key features of the light engineering sub-sector of Bangladesh (Survey 2007-08):

Around 40,000 Light Engineering Industries are operating all over the country and are engaged in production and manufacturing of highly value added engineering goods and services with the value of annual turn over more than TK. 5000 crore. In recognizing this fact, the government has declared this sector as a thrust sector in its Industry Policy -2005;

In the Export Policy-2007, the sector has been attached as one of the Highest Priority Sector and 10% cash incentive is granted for the export of light engineering products;

Around 6 lack people are directly involved with the light engineering sector;

The Ministry of Commerce has established Light Engineering Product Business Promotion Council and SME Foundation has attached the industry as Booster Sector; Hatch (2001) reported in his study that in India though there are large-scale enterprises, in many villages and cities, low barrier to entry have attracted large number of small-scale enterprises into nearly identical businesses. The availability of micro finance programs contributes to the trend. In Dakshinpuri, a resettlement colony on the distant edge of Delhi, 54 women-owned micro-enterprises compete for orders for Salwar suits (a woman's garment) from the several hundred neighborhood households. Their fabrics came from the same market stalls. The design of the clothes they make is fixed by tradition. West in the Alighar, a cluster of several thousand micro enterprises has supplied India with locks for generations. These little firms make their own tooling and use hand-operated machines to manufacture the intricate brass parts from which a vast variety of padlocks, bicycle locks, and mortise locks are made. Although these firms have links to large customers and national markets, they are not much better off than the apparel

marketers in the Delhi slums. In Aligarh, unequal bargaining power enables trades and wholesalers to make tiny suppliers bid against one another, facing price concessions and keeping downward pressure on wages. To make marketers worse, Taiwanese firms have now entered the Indian market. With modern lock designs and automated production techniques, they undersell and outsell Aligarh. The tiny firms there, like those in Dakshinpuri, are unable to respond to their competitive challenges.

From the above discussion it is found that India's small business markets are being captured by Taiwanese due to weak marketing policy & strategy. It seems reasonably clear that traditional BDS (Business Development Services) will not be effective in situations like these. Even if firms could see the usefulness of BDS, they can afford little of them. These firms do not need services to help them do what they now do better; they need to do different things, quite differently. The fundamental need of the firms in Dakshinpuri and Aligarh are product differentiation to improve margins, greater productivity to increase revenues, and internal specialization to make productivity growth possible (Hatch, 2001). BDS alone cannot produce these changes. The familiar limitations of small firm size, shallow management depth, lack of research and development capacity, inability to master alternative markets, and restricted access to capital- are handicaps too great for individual tiny enterprises to overcome. Only by networking their skills and equipment can they confront their problems.

2 RELEATED CONSTRUCTS OF THE STUDY

It is necessary to clarify the related constructs of this study; i.e., brief overview of small enterprises of Bangladesh, marketing capability, cluster concept, light engineering sector in Bangladesh, and clusters in light engineering sector of Bangladesh

2.1 Cluster Concept

Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region. Clusters arise because they increase the productivity with which companies can compete (Porter, 2001). Van and De (2001) developed a dynamic cluster concept. This cluster concept places one particular value chain as central. First, on the basis of the literature numbers of characteristics are described for identifying a cluster. Second, a stylized cluster cycle developed with states of development, expansion, maturity and transition. The development of a cluster in some states stems from external contingent events as well as the internal dynamic of clusters.

2.2 Marketing Capability

Marketing is the process of identifying the needs and requirements of consumers and developing appropriate products, services, prices, distribution channels and

communications to satisfy those requirements (Hutt and Speh, 1985). Marketing capabilities are defined as the integrative processes designed to apply the collective knowledge, skills, and resources of the firm to the market-related needs of the business, enabling the business to add value to its goods and services and meet competitive demands (Day, 1994; Tuominen et al., 1997).

2.3 Light Engineering Sector in Bangladesh

Light Engineering Industry is a diverse group with a number of distinctive sectors including low-tech items like castings, forgings and fasteners, to the highly sophisticated microprocessors based processed control equipment and diagnostic medical instruments. The LES supply chain comprises firms engaged in metal sourcing, metal preparation, metal cutting, forming & finishing, parts manufacturing, assembly & production of finished goods for a large variety of industrial and household applications (Survey, 2007-08).

2.4 Clusters in Light Engineering Sector of Bangladesh

Cluster is related to sub-sectors. Enterprises of light engineering sub-sector are found mainly geographic cluster wise in different areas of Bangladesh. Very few are surviving individually also. Bangladesh is a least developed country. The numbers of large-scale enterprises are very few here, because of high entry barrier. But some clusters of small businesses are found here. These are garment, leather goods, metalworking, plastic products and electrical appliance clusters (Geographic) in greater Dhaka and the metalworking and agricultural processing clusters (Geographic) around Bogra. But these clusters will not improve without any service. Business Development Services (BDS) and network strategies are necessary for these cluster's development. BDS include training, consultancy and advisory services, marketing assistance, information, technology development transfer and business linkage promotion. These BDS can be provided by the private sector. On the other hand different enterprises of a cluster can help each other. As a result marketing capabilities and other capabilities will increase (Hatch, 2001).

3 REVEIW OF THE RELEVANT LITERATURE

Although some authors (Sunley 1992; Courlet and Soulage 1995), argued that Alfred Marshall's contributions present some gaps and ambiguities in his concepts, many contemporary economic geographers and international business scholars still take Marshall's work as the basis for the explanations of agglomeration economies, industrial districts and then, inter-firm co-operation in specific regions. At the same time, these concepts have been used extensively in the academic literature with the most diverse industries, evolutions, levels of development and in a range of different countries. For instance, there are well-known cases regarding industrial district such as in Germany (Baden-Württemberg) and "Third Italy" in

Northern Italy, where there are existing districts established (Martin and Sunley, 2002).

Vorhies et al. (1999) investigated six marketing areas for evidence of capabilities in their study. The first area is market research and is defined as the set of processes needed to discover information about customer needs and broad market information, and design marketing programs to meet these needs and market conditions (Moller and Anttila, 1987). The second area is concerned with pricing and is defined as the processes needed to competitively price the firm's products and monitor prices in the market. The third area is product development. For a firm to have a capability in product development it is important to design products in response to customer needs, meet internal company goals and hurdles, and outperform competition in this key area (Moller and Anttila, 1987). The fourth capability relevant to marketing is the management of the firm's channels of distribution. To have a capability in channel management, relationships with distributors must be formed and effectively managed. To do this it is important to work closely with channel members, build effective relationships with channel members, and to bring efficiencies to the channel. Promotion is another important capability for many firms. Promotion for this study was defined as advertising, sales promotions, and personal selling activities the firm uses to communicate with the market and sell the product. The last area in which firms would be expected to have marketing capabilities is in the marketing management area. Marketing management capabilities are focused on customer acquisition management, the management of marketing programs, and the ability to coordinate action among the diverse elements in the firm needed to implement a marketing program (Moller and Anttila, 1987). It is important to note that the conceptualization of each of the six marketing capabilities taps an importance dimension and an effectiveness dimension since a capability that is not important cannot serve as a basis for competitive advantage and a capability (by definition) must be performed effectively (Day, 1994). It is also important to note that each marketing capability area is conceptualized as existing relative to competitors (Grant, 1991).

Currently, the Thai government has implemented cluster development strategies to improve the national economic performance and technological capabilities. The strategic management of the reorganization of industrial clusters undertaken at the National Science and Technology Development Agency (NSTDA), a major research organization in Thailand, is based on the concept of the National System of Innovation (NSI). NSTDA has focused on this cluster-based economic development model to position Thailand to meet the challenges in the environment of knowledge-based economy. The aim of the cluster-based strategy is to focus on specific internal capabilities in order to improve technological competitiveness and research capabilities to meet the needs of the country. The Operating Model of NSTDA is proposed as a manifestation for industrial development and effective research

management to support Thailand's national innovation system. Policy implications and supportive initiatives at NSTDA are expected to be useful for similar research organizations in other developing countries to better exploit the industrial cluster concept to develop technological innovations and enhance performance in the NSI (Wonglimpiyarat, 2006).

In recent years a large number of communities around the world have adopted cluster-based economic development as a strategy to propel their economies to new levels of economic competitiveness (Lundquist and Power, 2002; SANDAG, 2001). Despite concerns, in some quarters, over the ability of a cluster-based development strategy to deliver its promised economic benefits (Martin and Sunley, 2003) the greenhouse nursery industry in northwest Ohio, USA has adopted this particular approach to retain its competitive edge in an increasingly competitive industry. Like many northwest Ohio industries, the greenhouse nursery industry is facing increasing international competition. In particular, competition from southern Ontario is threatening the future viability of many northwest Ohio greenhouse nursery operations. The northwest Ohio greenhouse cluster is in its formative stages of development. The cluster is being supported by university researchers who function as the Cluster Strategy Team (CST) (Reid and Carroll, 2009).

The case of the "third Italy" is well known, and it has been studied extensively, for the large concentration of specialized small firms well networked and successfully active on the world markets. At the same time, these SMEs shared social, economical and historical traditions within their local communities (Brusco, 1986; Pyke, 1990). On the other hand, the case of Germany and its Baden-Württemberg region is well known for the engineering, machine tool building and the inter-firm co-operation in the automotive sector (Boekholt and Thuriaux, 1999). One of Pakistan's rare examples of consistent export success has been the Sialkot stainless steel surgical instrument cluster. This cluster, consisting mainly of small and medium enterprises (SMEs), has as its main markets the United States and Western Europe. In recent years, access to these markets has become contingent on meeting international quality assurance standards. The hypothesis explored is that meeting such standards requires greater local cooperation, both among producers as well as between producers and their suppliers and subcontractors. The study draws on quantitative and qualitative data to examine how inter-firm ties, both vertical and horizontal, have changed. The evidence suggests that joint action has increased, but that there remain significant areas of collective failure. Thus, the quality assurance pressures mark a possible turning point for the cluster, raising questions as to whether local sources of competitiveness, captured in the collective efficiency concept, can continue to provide the basis for export success. It also leads directly to an evaluation of the cluster's growth trajectory (Nadvi, 1999).

Considerable amount of general literature is available on clusters and economic development and spread on issues

from one extreme to another. However, literature on specific issues in cluster development and impact assessment is rather limited. The gaps (gaps between the requirements for establishing cluster concept effectively and the present scenario of light engineering industry of Bangladesh for capitalizing opportunities going to be flourished worldwide) in the literature offer many opportunities for research in this specific area (light engineering sub-sector) and especially in the relationship of cluster, marketing externalities and collaborative networks. However, before further empirical research is conducted we need to clearly understand where we are now, with the current body of knowledge, so we will recognize where we need to go. These ideas construct the main purpose of this research, which is to build a deeper understanding and relationship of the issues related to inter-firm co-operation, marketing externalities in regional clusters and collaborative networks in marketing, as important social elements that firms need to take into account in an every day more and more competitive environment.

4 OBJECTIVE OF THE STUDY

The objective of this study is to compare perception of different groups of light engineering small enterprises to enhancement of marketing capability through cluster concept.

5 HYPOTHESIS OF THE STUDY

Perception of different groups of light engineering small enterprises to enhancement of marketing capability through cluster concept is positive and more or less same.

6 METHODOLOGY

6.1 Research Design

The primary objective of exploratory research is to have insights into, and an understanding of, the problem confronting the research. The methods of exploratory research were survey of experts, focus groups interviews, and pilot survey. After the exploratory research population and sampling frame were defined more clearly, and questionnaire was made more structured (used Likert scale) with very few open ended questions. Then again the questionnaire was pre-tested to minimize sampling and non-sampling errors. The second stage of this research was conclusive research; the insights gained from exploratory research were verified to assist the decision maker in determining, evaluating, and selecting the best course of action to take for light engineering industry.

6.2 Population

The Light Engineering Industry of Bangladesh involves in four types of businesses (sub-sectors), i.e., machinery and spare parts related businesses, electrical and electronic goods related businesses, plastic goods related

businesses, and accessory goods related businesses. In this research population were all the small businesses under machinery and spare parts related sub-sector.

6.3 Sampling Frame

Enterprises under machinery and spare parts related sub-sector can be grouped mainly from three dimensions, i.e., assets value point of view, number of employee point of view, and type of activity point of view. Light engineering small businesses were grouped depending on assets value, i.e., below tk 3750000, tk 3750000 to tk 7499999, tk 7500000 to tk 11249999, and tk 11250000 to tk 14999999. Small businesses were also grouped depending on number of employee, i.e., Below 7, 7 to 12, 13 to 18, and 19 to 24. Groups depending on type of activity are manufacturing and repairing complete machinery and spare parts, manufacturing light metal products and hardware, repairing old machines and parts, and trading engineering machine parts, metal parts and hardware. Sampling frames of this research were above groups of all three dimensions of the sub-sector.

6.4 Sampling Technique

The sampling technique of this study was quota sampling under non-probability sampling, as data were collected targeting to measure internal validity from the standpoint of theory application. Here, at first four quotas were developed for every dimension (total three dimensions) of the population of the sector (machinery and spare parts related light engineering enterprises). Then sample elements were selected based on convenience and judgment from all twelve (12) groups of light engineering small businesses.

6.5 Sample Size

Sample size of this research was 60 representing from all twelve (12) groups considering the objective of the research and importance of the groups. When groups were considered from assets value point of view, 18 samples were taken from below tk 3750000 group, 16 from tk 3750000 to tk 7499999 group, 12 from tk 7500000 to tk 11249999 group, and rest of the from tk 11250000 to tk 14999999 group. When groups were considered from number of employee point of view, 24 samples were taken from below 7 group, 11 from 7 to 12 group, 15 from 13 to 18, and rest of the from 19 to 24 group. When groups were considered from type of activity point of view, 33 samples were taken from manufacturing and repairing complete machinery and spare parts group, 10 from manufacturing light metal products and hardware group, 10 from repairing old machines and parts group, and rest of the from trading engineering machine parts, metal parts and hardware group.

6.6 Data Collection Methods

The study was done based on primary as well as secondary data.

6.6.1 Primary Data

The primary data were collected through questionnaire

(keeping open ended and close ended options), personal interview, word of mouth, discussion with employees of different small businesses and officials of the association, and observation. A 5-point Likert scale questionnaire was used to measure marketing capability of geographic accumulation of small firms under light engineering industry, where one (1) represented strongly disagree and five (5) represented strongly agree. Under observation method structured non-disguised, structured disguised, non-structured non-disguised and non-structured disguised procedures were followed by the researcher to collect data.

6. 6. 2 Secondary Data

The secondary data were collected through brochures, prospectus and papers published by association of the sub-sector, annual report of the association, relevant journals and dailies, periodicals, related research works and books, and websites.

6. 7 Data Analysis

Data were analyzed by using SPSS 12 Software, and under SPSS software ANOVA test was used.

7 RESULT AND DISCUSSION OF THE STUDY

Analysis of variance is used for examining the differences in the mean values of the dependent variable associated with the effect of the controlled independent variables, after taking into account the influence of the uncontrolled independent variables. Essentially, analysis of variance is used as a test of means for two or more populations. The null hypothesis, typically, is that all means are equal (Malhotra, 2006) and the alternative hypothesis is that at least one mean will be different. When an F test is used to test a hypothesis concerning the means of three or more populations, the technique is called analysis of variance. If there is no difference in the means, the between-group variance estimate will be approximately equal to 1. However when the means differ significantly, the between-group variance will be much larger than the within-group variance; the test value will be significantly greater than 1; and the null hypothesis will be rejected (Bluman, 1998). ANOVA was used to understand degree of similarity and dissimilarity of perception to 'cluster concept to enhance marketing capability of small businesses' of different groups (considered from assets value, number of employees and types of activity point of view) of light engineering industry of Bangladesh.

7. 1 Analysis of Variance (ANOVA) and F Test of Groups Considering Assets Value

Considering 'assets value' (cost of durable resources other than land and factory buildings) small business enterprises under light engineering industry of Bangladesh were divided into four groups, i.e., below tk.750000, tk.750000 to tk.7499999, tk.7500000 to tk.11249999, and tk.12500000 to tk.14999999. ANOVA was used to understand the perception of the members of above group to

treatment (questionnaire) for 67 statements. After analysis (using SPSS) based on collected data study found F value (which is called calculated value) for every individual statement. At 5% significance level critical value of this test is 2.76 (d.f.N.=3, d.f.D.=56). After comparing critical value and calculated values the result shows that hypotheses of most of the statements are null (except five statements) as critical value is less than calculated values, that means perception of the members of the groups more or less same, i.e., cluster creation of small businesses Light Engineering Industry of Bangladesh will enhance marketing capability. Only for five statements mean values between the groups vary significantly (at least one mean is different from others), that means hypotheses for these statements are alternative.

Out of these five statements one statement was "co-location of many light engineering small firms will make possible to share material at the time of need". For this statement dissimilar answers were found from the respondents. Groups with lower assets value (lower end groups) agreed more with the statement, as they have shortage of capital sometimes need to take material from neighbor organizations. Groups with higher assets value (higher end groups) agreed less with the statement, as they have more capital occasionally take material from neighbor organizations. Other four statements were collective initiative will make possible to manage business development services, collective initiative will make possible to manage job related training for employees, collective initiative will make possible to give idea about contemporary technology, and collective initiative will make possible to manage cooperation of different organizations to develop new products according to the choice of the customer. Some members of groups with lower assets value (lower end groups) disagreed with the statements, as they have doubt about upper end groups. For collective initiative they (all small businesses) need an association and members of lower end groups think that by forming this association upper end group will be more benefited. Upper end groups agreed more with the statements, but they think that lower end groups are very much self benefit oriented, they do not think about the industry and their thinking is back dated. So, they have some differences because of lack of trust.

7. 2 Analysis of Variance and F Test of Groups considering Number of Employees

Considering 'number of employee' small business enterprises under light engineering industry of Bangladesh were divided into four groups, i.e., Below 7, 7 to 12, 13 to18, and 19 to 24. ANOVA was used to understand the perception of the members of above groups to treatment (questionnaire) for 67 statements. After analysis (using SPSS) based on collected data study found F value (which is called calculated value) for every individual statement. At 5% significance level critical value of this test is 2.76 (d.f.N.=3, d.f.D.=56). After comparing critical value and calculated values the result shows that hypotheses of most of the statements are null (except four

statements) as critical value is less than calculated values, that means perception of the members of the groups more or less same, i.e., cluster creation of small businesses under Light Engineering Industry of Bangladesh will enhance marketing capability. Only for four statements mean values between the groups vary significantly (at least one mean is different from others), that means hypotheses for these questions are alternative.

Out of these four statements two statements were through collaboration with suppliers it will be possible to get smooth supply of raw materials and co-location of many light engineering small firms will make possible to attract many supplier to take position in the cluster. Very few members of these groups are so illiterate and isolated that they could not realize the benefit of the cluster concept properly, though researcher tried his level best to make them understand the matter. Other two statements were collective initiative will make possible to give idea about contemporary technology and collective initiative will make possible to minimize losses for electricity problems. Some lower assets value members (under lower end groups) disagreed with the statements, as they have doubt about upper end groups. They think that by collective initiative only upper end group members will be gainer. Association leaders take membership fee from them but do not provide adequate help in need. Upper end groups agreed more with the statement but they think lower end groups are very much self benefit oriented, they do not think about the industry and their thinking is back dated. So, they have some differences because of lack of trust.

7.3 Analysis of Variance and F Test of Groups Considering Types of Activities

Considering 'type of activity' small business enterprises under light engineering industry of Bangladesh were divided into four groups, i.e., manufacturing and repairing, repairing, manufacturing, and trading. ANOVA was used to understand the perception of members above groups to treatment (questionnaire) for 67 statements. After analysis (using SPSS) based on collected data study found F value (which is called calculated value) for every individual statement. At 5% significance level critical value of this test is 2.76 (d.f.N.=3, d.f.D.=56). After comparing critical value and calculated values the result shows that hypotheses of more than two third statements (47 out of 67) are null as critical value is less than calculated values, that means perception of the most of the group members is similar, i.e., cluster creation of small businesses under Light Engineering Industry of Bangladesh will enhance marketing capability. Hypotheses of about one third statements (20 out of 67) are alternative as critical value is more than calculated values, that means, for these every individual statement at least one mean is different from other groups' mean.

Twenty statements with alternative hypotheses are through collaboration with distributor it will be possible to identify needs of customers, through collaboration with retailer it will be possible to identify needs of cus-

tomers, through collaboration with intermediaries (distributor and retailer) it will be possible to know about competitors' products, through collaboration with intermediaries (distributor and retailer) it will be possible to differentiate products, through collaboration with intermediaries (distributor and retailer) it will be possible to modify products regularly, well informed (sharing information) small businesses under LEI will be able to ignore dominance of customer on pricing, co-location of many light engineering small firms will make possible to share material at the time of need, co-location of many light engineering small firms will make possible to share machinery use at time of need, co-location of many light engineering small firms will make possible to transfer customers to another organization at the time of overfull demand, co-location of many light engineering small firms will make possible to transfer customers to another suitable organization, co-location of many light engineering small firms will make possible to deliver products timely (by reducing production related problems), co-location of many light engineering small firms will make possible to attract many supplier to take position in the cluster, co-location of many light engineering small firms will make possible to establish 'one stop shop', inter-firm network of small businesses will make possible to set own sales promotion strategy, sharing knowledge within employees of small businesses will make possible to increase internal specialization, sharing knowledge within employees of small businesses will make possible to generate management economies, Mutual learning of light engineering small businesses through observation will make possible to adopt the marketing strategies taken by leading organizations, mutual learning through observation will make possible to take corrective action before facing the problem, collective initiative will make possible to give idea about contemporary technology, and collective initiative will make possible to manage special fund for employees.

In case of groups for types of activities variation of perception between the groups is significant and more than previous two groups (depending on type of activity and assets value). This research is mainly based on manufacturing and repairing companies because marketing activities are broadly found in this group. But other three types of enterprises, i.e., manufacturing, repairing, and trading were also considered for this study to know the overall perception of this sub-sector to cluster concept. Manufacturing and repairing companies are big in size, and have more employees, more efficient employees, more practice of modern marketing and management than other three groups and this group is linked with more stakeholders. Members of this group are strongly in favor of establishment cluster concept, because needs of these types of enterprises are related with the benefits of the cluster concept. Manufacturing companies are also in favor of cluster concept, because members of this group think cluster concept will help them to reduce production cost as well as to increase total productivity but their understanding about cluster concept is not so good. Nature

of business activities of other two groups is less similar with the characteristics of cluster concept, that is why some members of those two groups disagreed little bit with the concept and alternative hypotheses were found for twenty (20) statements. But overall scenario of perception is in favor of cluster concept.

8 SUMMARY AND LIMITATIONS

Social capital plays a critical role in the development of a successful organization or industry. Social capital is some features of organizations, such as trust, norms, and networks, which can improve the efficiency by facilitating coordinated actions. Research results say that, some same type of enterprises under same industry or some interconnected companies under different industry operating from same geographic area can increase social capital. Firms gain strength when supported by strong research institutions, a concentration of capital and business expertise as well as an appropriate environment in which innovation can flourish. So, small businesses under light engineering industry should go ahead through their association to establish cluster concept so that marketing capability can be increased. Related organizations and government should play a supportive role to materialize the dream. Most of the countries of Asia are not financially so strong and most of the enterprises of these countries are small and medium. So, establishment of cluster concept can help a lot to enhance marketing capabilities of small business enterprises of Asian countries also.

However, there are some limitations of the study for which the findings should be used with caution.

- Unwilling to provide data: Some respondents were not willing to provide data, because they were afraid of harassments of different government bodies. They have also feeling of deprivation. Different government and non government bodies gave assurance of different services but did not give. But at last they were managed to provide data when they could understand that the study is only for academic purpose.
- Lack of education: Most of the respondents were less educated. So, it was needed to make the questionnaire understandable to the respondents. The question of lack of education is important in terms of the fact that the entrepreneurs do not have a clear understanding of the terms but are clear in terms of the concept and benefit of the concept.
- Shortage of secondary data: Very few previous works were done exactly on this field. So, there was scarcity of secondary data.
- Shortage of contemporary data: Very few secondary data were found are not up-to-date.
- Lack of accurate data: Willingly or unwillingly few respondents gave inaccurate data (from my realization), but not significant.
- All clusters were not considered: Only important geographic clusters were considered for collecting

primary data as this study is based on non-probability sampling.

- Use of quota sampling technique: As quota sampling technique under non-probability sampling was used, all the respondents had not equal probability to be drawn.

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