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Enhancing the competitiveness of Palestinian SMEs through clustering

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Abstract

Purpose – The purpose of this paper is to prove that competitiveness of small- and medium-sized enterprises (SMEs) among developing countries in the conflict regions will be enhanced through clustering.

Design/methodology/approach – The study used quantitative and qualitative methods of research. Questionnaires were administered on a sample of SMEs working in food-processing sector in Palestine, Jordan and Israel. Semi-structured interviews were conducted with ten Palestinian SMEs to deeply understand the food-processing cluster. The dependent variable "SMEs competitiveness" is measured by the balanced scored card while the independent variable "cluster" is measured by the "related and supporting industries."

Findings – The cluster and SMEs performance of food-processing sector in Palestine is the lowest in relative to Jordan and Israel. The results show a significant positive relationship between cluster and SMEs performance in the Palestinian food-processing sector.

Practical implications – Cluster can help SMEs in the food-processing sector in Palestine to enhance their performance. It has also been found that these SMEs need to build linkages among themselves and with related and supporting industries within the Palestinian territories, Jordan and Israel.

Originality/value – The paper discusses the enhancement of SMEs performance working in a conflict region through clustering.

Keywords Competitiveness, SMEs, Clustering

Paper type Research paper

Introduction

Almost 99 percent of the industrial firms in Palestine are small- to medium-sized enterprises (SMEs) that solely compete on the basis of price, and very few of these enterprises have direct access to foreign markets. The percentage of the industrial sector contribution in total Gross Domestic Product (GDP) has risen dramatically from 8 percent in the mid-eighties to 17 percent by 2010 (PFI, 2011). Moreover, the industrial sector has employed around 85,000 workers (an average of 13 percent of the total work force).

Companies working in cluster enjoy higher performance. They can easily reach out to suppliers and buyers and greater ability to access larger local market (Krugman, 1991), and they show higher potential to be more innovative because of rivalry among companies in the cluster (Porter, 1990). Braun and Hadwiger (2011) proved that the proximity to research centers like universities that occur in the cluster are considered important for the survival of SMEs. This phenomenon has attracted renewed interest from academics, practitioners and governments who have become aware of its central importance in competitive advantage (O'Donnell *et al.*, 2001). An understanding of clusters adds an important dimension to more commonly debated role of personal contact networks in the success of entrepreneurial small business (Kuah, 2002).

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Objective

There is a strong evidence to suggest that a cluster policy brings additional positive effect to the existing SME policy in industrialized economies, but such effects have not been extensively researched in developing (transition) countries, particularly from the point of view of the SMEs which are the main actors in the cluster development process in relation to whether their performance has been improved as a result of cluster effects (Karaev *et al.*, 2007).

The objective of the paper is to prove that clustering is vital to enhance the competitiveness of SMEs in developing countries and conflict regions, such as Palestinian SMEs. As well, the paper aims to assess the level of clustering and performance of SMEs in the food-processing sector in Palestine relative to Jordan and Israel.

Food-processing sector in Palestine, Jordan and Israel

Food-processing in Palestine

In Palestine, the market share of food products varies between 90 percent for meat products to 30 percent for dairy products with the average about 50 percent in the domestic market. The food industry exports mainly to Arab countries. Olive oil and other fair trade products have been exported to many countries around the world. The total investment in the sector is estimated to be 480 USD million (PFI, 2011). Although, the Palestinian Food Industries Association coordinates the food industries with almost 220 members and the labor force is estimated by 8,000 workers, the cluster within the food-processing sector is underdevelopment, and it is not well positioned from a competitiveness perspective.

The Palestinian food firms are facing difficulties in selling their products in Israel due to the inability to obtain relevant authorization from the Israeli Ministry of Health, lack of Kosher certification of Palestinian food products, border crossings for trucks carrying food products have to go through lengthy security checks, and the Palestinian products have to use the Israeli vehicles for transportation within the Israeli controlled areas. By contrast, the Palestinians pointed out that the Israeli food products enter the Palestinian territory with relative ease, and that 99 percent of manufactured inputs and raw materials designated for the Palestinian food industry are imported from Israel (PFI, 2011).

Food-processing in Jordan

From 2001 to 2010, Jordan's agricultural exports have soared by an average of 22 percent per year and have exceeded by twofold in 2005. Jordan's fastest growing agricultural exports include a mix of raw agricultural commodities and processed foods such as olive oil, malt extracts, fatty acids, as well as live sheep and goats. While a substantial share of agricultural goods are destined to other Middle East countries, an increasing share (8 percent) is being exported to the European Union (fresh fruits and vegetables, vegetable oil, and fruit and nuts). In Jordan, the linkages between academia, private sector, and governmental organizations are recently improved (Treutens and Butterworth, 2009).

Food-processing in Israel

The Israeli agriculture is supported by both basic and applied research. Intensive production systems in Israel are the result of close cooperation and interaction between scientists, extension advisors, farmers and agriculture-related industries (Treutens and

Butterworth, 2009). The linkages within SMEs in the food sector and other related and supporting industries are strong. The Israeli civil research expenditure is very high (4.7 percent) of the GDP and its industry contributes a much bigger part than in the European Union. Israel has excellent universities and research organizations supported by efficient and solid university-industry collaboration and the government (Treutens and Butterworth, 2009). The public and private sectors carry out agricultural research in Israel.

SMEs, clustering and competitiveness

SMEs

Storey (1994) discussed the general differences between large and small firms in terms of owner-manager centrality, structure, resources, number, variety of products and range of markets served. In smaller firms, owner-managers are less able to influence competitive environment than larger ones. Besides, the organizational structures of smaller firms are likely to be organic and loosely structured rather than mechanistic and highly formalized (Jennings and Beaver, 1997). In smaller firms, all the roles are either performed by one manager or by a very narrow range of managers who are largely appointed because they are family members or friends rather than being competent and well educated. However, small traditional firms generally have little commitment to research and development (R&D) and are highly dependent on external knowledge sources (Vossen, 1998).

SMEs in developed countries are likely to be highly specialized in comparison with those in the developing countries. Most of the SMEs in the developing countries are one-person businesses, and the largest single employment category is working proprietors (Fisher and Reuber, 2000). The informal relationships of the family dominate formal explicit relationships when trust, loyalty and family ties are important for advancing the businesses (Habbershon and Williams, 1999).

Although many factors are hypothesized to impact on the business outcome, there is no consistent pattern to the characteristics that contribute to business competitiveness, success and growth (Audretch, 2001; Gibb, 1996). However, not all small firms are growth-oriented, and the majority of owner-managers focus on day-to-day survival. Jennings and Beaver (1997) show that in smaller firms all the roles are either performed by one person or by a very narrow range of managers appointed based on family relations rather than capability.

Clustering

Networking for competitiveness has received considerable attention in the literature (Gordon and McCann, 2000). While networking is viewed as an important requirement in enterprises of all sizes, however, these are argued to be of particular importance to small firms in order to offset the vulnerability of size acting as the key determinant of organizational success (Curran *et al.*, 1993). Clusters alone cannot solve the complex problems and constraints encountered by SMEs and break the vicious circle of SMEs to reach the next level of growth (Dasanayaka and Sardana, 2010).

Clusters, unlike networks, are not based on membership. They are simply geographic concentrations of interrelated companies and institutions of sufficient scale to generate externalities. The minimum number of firms with common or overlapping needs to be acknowledged as a "cluster" is the number that attracts suppliers and specialized services and resources (Rosenfled, 2005). Bijaoui *et al.* (2011) proposed

a model of economic development to generate a cross-border sustainable economic development within the regions in conflict. The proposed progressive model creates the industrial specialization (industrial district) required for the development of the clustering processes supported by the regional innovation system.

Competitiveness

In both developed and developing countries, there is mounting evidence that clustering and networking help SMEs to raise their competitiveness (Venkataramanaiah and Parashar, 2007). The authors show that the SME clusters could be significantly upgraded to enhance the levels of cluster productivity and participation in international markets. Mapping of existing clusters and networks is the first step in a cluster development process.

Research on clustering in developing countries has been inspired by the competitiveness of industrial districts in advanced countries. Cluster analysis can help diagnose a region's economic strengths and challenges and identify realistic ways to shape the region's economic future (Cortright, 2006). Firms cluster together within a region have common competitive strengths and needs. Therefore, it is more important and fruitful to work with groups of firms on common problems than to work with individual firms.

Clusters help enterprises to build their competitiveness (Cortright, 2006). Binding the cluster together are "buyer-supplier relationships, or common technologies, common buyers or distribution channels, or common labor pools" (Enright, 2000). It is also important to note that clusters involve a certain degree of spatial proximity between its actors. Geographical proximity enables face-to-face networking, common labor markets and the diffusion of knowledge, especially "tacit" knowledge is difficult to codify.

The approach of the United Nations Industrial Development Organization toward SMEs in developing countries is represented by the fact that these enterprises can play a key role in triggering and sustaining economic growth and equitable development (Humphrey and Schmitz, 1995). However, this potential role is often not fulfilled because small size of SMEs. However, through networking, individual SMEs can address the problems related to their size and improve their competitive position (Ceglie and Dini, 1999).

Competitiveness is the means by which entrepreneurs can improve their firms' performance and which can be measured on a number of dimensions including market share, profit and growth. Man and Chan (2002) stress the importance of links between competitiveness and performance as having a long term rather than a short-term orientation. Improving the competitiveness of SMEs is not bound to understanding problems confronting businesses, but also to better understanding of how to overcome such barriers.

Venkataramanaiah and Parashar (2007) discuss how the demonstration effect can speed up the dissemination of best practices to the enterprises working in the same geographical area. Furthermore, they find that successful clusters have been those that are able to respond to the changing demands of globalized markets in terms of quality awareness, reliability, rapid delivery and price. Different interventions such as marketing orientation (Mahmoud, 2011), information and communication technology (Apulu and Latham, 2011) and influence on human resources management (Adnan *et al.*, 2011) can be applied to enhance cluster competitiveness.

The paper measures the competitiveness of the SMEs by using the balanced scored card (BSC). The four categories for the BSC are: financial performance, customer

knowledge, internal business processes and learning and growth (Kaplan and Norton, 1992). While there are many advantages to using BSC, there are few disadvantages to the method as well (Mooraj *et al.*, 1999). First, the BSC takes forethought. Second, while the BSC gives an overall view of the four areas for concern in business growth and development, these four areas do not paint the whole picture. The financial information included on the scorecard is limited as many companies use metrics that are inapplicable to their own situation. It is vitally important when using BSC to make the information being tracked applicable to the needs identified. Otherwise, the metrics will be meaningless.

Hypothesis

The paper testifies whether clustering enhances the competitiveness of SMEs in the Palestinian food-processing sector or not. In particular, the paper's main hypothesis is as follows:

Main Hypothesis. "There is a significant relationship between clustering and competitiveness of SMEs working in the food-processing sector in Palestine."

Design/method/approach

An academic literature and some business as well as other appropriate literature sources search were conducted. The quantitative and qualitative methods are used. Employing both qualitative and quantitative data offers an opportunity to probe deeply into the issues raised by the research (Sekran and Bougie, 2013). Although questionnaires may be used as the only data collection method, it is usually better to link them with other methods in a multi-method approach (Labaw, 1980). The researcher used the semi-structured interview as a qualitative tool. The researcher addressed ten Palestinian SMEs to better understand the results of the survey.

The cluster (area) random sampling is used. Data from 450 SMEs in Palestine, Jordan and Israel were collected; 150 from each country (Palestine, Jordan and Israel). The target population is SMEs in the food sectors in Palestine, Jordan and Israel. The second step was to determine the sample frame. In the sample frame, all firms are listed in the Palestinian Food Industries Union, the Food Industries Association in Israel and Jordan Chamber of Industry. The statistics show that the number of SMEs in the food-processing ranges from 160 to 190 firms in the three countries. With a margin error of 5 percent, and 95 percent confidence level, the sample size in each country is calculated.

The questionnaire was addressed to the owner/manager of the food-processing firms taking into consideration the volume of each subsector in each country. The purpose of the survey is descriptive-exploratory with some explanatory analysis. The questionnaire consists of three parts: Part 1 covers the different elements of the related and supporting industries. Part 2 covers the firms' performance, and Part 3 covers the demographic data. The scale items were tested on the reliability and validity of the final test to examine the consistency of the constructs and related items.

The respondents were asked about their competitiveness with respect to different dimensions of the BSC (innovation, customer's satisfaction, internal and external business and financial performance) of their firms as an indication of their competitiveness. It was measured on a five point rating scale (ranging from very

negative to very positive). Furthermore, the respondents were also asked to rate on a five-point scale the different elements of the related and supporting industries.

The BSC is a measurement tool that is relatively rigid. The four perspectives are the main categories on which key success factors are defined. In consequence, the BSC tends to force indicators into one of the four perspectives. By doing so, it limits the view on the company as it leaves very little room for cross-perspectives analysis which might have a simultaneous impact on the firm. There are factors that do not fit into or cannot be categorized within the given framework of the four dimensions; still it is possible that some dimensions could be neglected. Moreover, the BSC might not only enhance a confirmation bias and enable managers only to see what they want to (or measure), but it ignores the changing nature of today's business environment.

Findings

Related and supporting industries

In order to assess the level of clustering in Palestine in relative to Jordan and Israel, respondents were asked to rate their relations with the related and supporting industries. Table I presents the means score on these factors. The results show that the food-processing cluster in Palestine is relatively weak in comparison with Jordan and Israel. The means scores for most factors are the lowest for SMEs in Palestine (i.e. relation with banks, insurance firms, universities, governmental institutions, etc.).

Qualitative data were collected from ten respondents to find out the reasons for low score on some of the dimensions given in Table I. These are presented in Figure 1.

Enright (2000) suggested that clusters help identify the potentials and problems of SMEs and sensitize policy makers to improve their decisions. However, ineffectiveness of cluster is largely due to the lack of value addition by the academic and research institutions on account of inadequate financial resources, and the industrial enterprises are competing with each other with lack of a strong vision.

BSC

The performance of SMEs in the three countries was measured. The respondents were asked to rate each factor of the BSC as shown in Table II.

Table II shows that the performance of SMEs in Palestine is lower than the ones in Jordan and Israel. It is also an expected result for internal reasons such as lack of know-how, and managerial skills and external reasons such as cost of production and borders.

	Factor	Palestine	Jordan	Israel
1	Supplier-buyer relations	3.51	3.58	3.42
2	Relation with banks	1.51	3.74	4.42
3	Relation with insurance firms	1.88	3.26	3.7
4	Relation with research centers and universities	1.43	3.26	4.11
5	Relation with local manufacturers	2.27	3.61	3.88
6	Relation with public institutes	2.48	3.24	3.87
7	Relation with government	2.19	2.42	3.77
8	Relation with food processing firms	2.53	2.71	3.97
9	Relation with firms from other sectors	1.53	3.41	3.88

Table I. Average mean for related and supporting industries in Palestine, Jordan and Israel

Six out of ten of the SMEs were working within a larger network of suppliers, intermediaries and competitors. The owners/ managers of these firms believe that cluster help in entering new markets, increasing market share, performance, specialization, sharing information, profits and decreasing costs. The owners of the other four firms fear losing power through the network, lack of commitment and losing customers. The SMEs working within a network show that the following characteristics are needed for building a dynamic cluster:

- ✓ Intense cooperation organized through various institutions for collaboration such as chambers of commerce, Union of Food Processing, etc.
- ✓ Linkages to related industries, sharing pools of talent and new technological advancement.
- ✓ Access to increasingly specialized and advanced factors of production.
- ✓ Proximity to sophisticated and demanding buyers.

Figure 1.

No.	Factor	Palestine	Jordan	Israel
Innovation				
1	Percentage of new products of total turnover	2.47	2.85	3.69
2	Time necessary to develop new generation of products	2.1	2.44	3.58
Customer satisfaction				
3	Customer satisfaction	3.11	3.65	3.93
4	Market share	2.78	3.44	3.77
5	Customer loyalty	3.05	3.63	3.90
Internal business				
6	Employees satisfaction	3.34	3.71	3.74
7	Employees loyalty	3.44	3.70	3.77
8	Productivity of your employees	3.16	3.63	3.71
Profitability				
9	Return on Investment	2.71	3.40	3.81
10	Profitability	2.26	3.24	3.81
11	Revenue growth	2.18	3.00	3.65
12	Cost reduction	2.49	2.82	3.00
13	Exportation	1.81	3.00	3.58

Table II.
Average mean for balanced scored card in Palestine, Jordan and Israel

BSC has limitations in measuring the performance of SMEs. The BSC measures past and present performance and does not assess future expansion due to SMEs' investment or existing and new related and supporting industries. As well, BSC has limitations in assessing the development, transfer and application of knowledge necessary for staying competitive in today's fast changing environment. The BSC is beginning to jeopardize the survival of firms, and thereby negatively affecting customer value upgrading, and shareholders' benefits as well societal benefits in general. As well, there is a cause and effect relation between the four dimensions (Norreklit, 2000). Rompho (2011) argued that frequent change in strategy was a major factor leading to the failure of the BSC on SMEs.

In order to testify whether there is a significant relationship between cluster of SMEs working in the food-processing sector (independent variable) and the performance of these SMEs (dependent variable), regression analysis was used. The regression model

was found to be statistically significant as indicated by regression factor (R^2), which is +0.72 (i.e. strong positive relationship). Thus, the Palestinian SMEs working in the food-processing sector could enhance their performance by strengthening the cluster.

Clustering could help the food-processing industry to set their priorities and establish a constructive relationship with government. In effect, the cluster approach can create a more positive business climate for the sector. This climate helps existing firms grow and attracts new businesses to the area. Thus, the industry takes the lead in addressing the concerns while government and education play facilitation and support roles (Anderson, 1994).

Food-processing cluster model (FPCM)

Building food processing cluster in Palestine could affect competitiveness in three broad ways (Porter, 2000):

(1) increasing the current productivity of constituent firms;

(2) increasing the capacity of cluster participants for innovation and productivity growth; and

(3) stimulating new business formation that supports innovation and expands the cluster.

Each of the three broad influences of clusters depends, to some extent, on personal relationships, face-to-face communication and networks of individuals and institutions that interact. Formal and informal organizing mechanisms and cultural norms often play a role in the functioning and development of clusters.

The paper therefore proposes a model for the food processing in Palestine where all relevant actors should play a role. In the proposed FPCM, the board of the cluster is led by the related ministries and authorities in a consensus framework with involved organizations (professional associations, educational-training, technical and financial support organizations and related ministries). The food processing cluster (as shown in Figure 2) should be an independent, non-profit and private membership based organization.

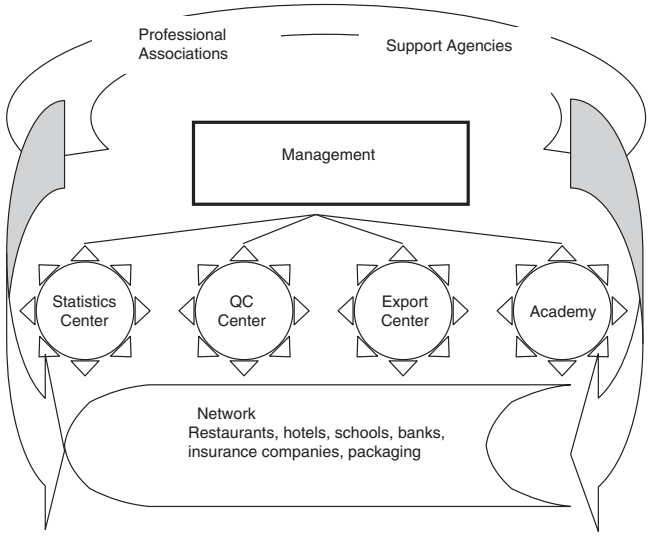

Figure 2.
The food processing cluster model (FPCM)

The model consists of four arms: Statistics Center, Academy, Quality Control Center, and Internationalization and Export Promotion Center.

Conclusions

The main conclusions are:

(1) Palestinian SMEs in the food-processing sector have a weak cluster in comparison with Jordan and Israel. This is due to weak networking linkages among SMEs, and between SMEs and other related and supporting industries such as banks, universities, etc.

(2) Palestinian SMEs in this sector have the lowest performance (i.e. innovation, customer satisfaction, internal business and financial indicators) in comparison with Jordan and Israel.

(3) There is a significant positive relationship between cluster of SMEs working in the food-processing sector in Palestine and their performance. Thus improving cluster of food-processing sector will enhance the competiveness of SMEs working in this sector.

Recommendations

In order to enhance the competitiveness of the SMEs working in the food-processing sector in Palestine, it is necessary to build a formal dynamic cluster. The research presents a suggested model to build such a cluster. The cluster can promote productivity, innovation and competition in a number of ways, e.g. the reduced cost of sharing resources, the critical mass created by having a pool of specialized skills, expertise and value-added products. The SME owner/manager should use their networks to improve their business activities and use their marketing management competencies in order to develop innovative marketing (Gilmore, 2011). The cluster enhances economic foundations such as skilled workforce, R&D capacity and infrastructure; and thereby creates assets such as trust, synergy, collaboration and cooperation which are all essential for competitiveness.

Future research

Future research could cover other sub-sectors within the agricultural sector or other sectors in the three countries. It would be valuable to investigate the impact of the different cultures on the success or failure of clusters in the three countries. Moreover, the social and environmental issues of the BSC could be measured or use other tools to assess the performance of SMEs. A further research could touch the importance of the regional clustering on the competitiveness of SMEs. Research is needed to show how cluster participants are performing in relation to non-cluster ones from the same industry and to make comparisons of performance of the companies before and after joining a cluster.

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