

Innovative
Management
Perspectives on
Confronting
Contemporary
Challenges

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Edited by

Demetris Vrontis
Evangelos Tsoukatos
and Amedeo Maizza

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CHAPTER TEN

INNOVATION AND SME GROWTH IN LOW TECH SECTORS: THE CASE OF PALESTINE

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1. Introduction

Small and medium-sized enterprises (SMEs) as an important engine of growth have received increased attention in both developed and developing countries. These enterprises are often regarded as the "backbone" of the economy, serving as major sources of development, new jobs and a seedbed for entrepreneurship. Such a prominent role is mainly attributed to their flexibility in responding to emerging opportunities and their flexibility in the face of adverse conditions.

For over a decade of economic volatility and political instability, the Palestinian private sector has demonstrated dynamism and the ability to adapt to changes. However, the forces of globalization are increasingly powered by far reaching developments, in technology, knowledge and markets. These forces are also currently affecting life styles of people, changing the paradigm of consumerism, business and industry. In order to cope up with these forces, the Palestinian private sector will have to be very creative and efficient. By virtues of smallness, SMEs can be flexible, adapt and have capacity to develop and implement new ideas. Further, the SMEs are the fertile ground of innovation on account of simple organizational structure, low risk and receptivity (Harrison and Watson 1998). Despite this, SMEs across industries have not been able to realized innovation potential (Chaminade and Vang, 2006) and innovations is the

important determinant of success of SMEs in the current context of global market forces (Hoffman et al. 1998).

The development of SMEs ranks high on the Palestinian Authority's (PA) policy agenda. However, relatively little is known about the dynamics determining their start up, expansion and closure. Understanding of these dynamics is extremely important for meeting development agenda of PA. Enterprises are facing increasing pressures on account of global competition, constantly changing production system and pace of upgrading in both product and process technologies. Further, these enterprises have to meet international standards on quality assurance, environmental standards, labor norms, social ethics as these are now the critical determinants of global competitiveness.

The Palestinian Central Bureau of Statistics (PCBS) released the final results of its 2012 Establishments Census, covering firms in the private sector, nongovernmental organizations and government bodies in the Palestinian Territory. The enterprises show underdeveloped structures, with industrial enterprises mainly involved in light industries and the production of basic consumer goods, particularly food and beverages, wearing apparel, non-metallic products, metal products and furniture products. A total of 134,505 establishments were in operation in the West Bank and Gaza in 2012.² More than half of all Palestinian establishments are wholesale and retail businesses, almost 30% operate in the services sector and 12.4% are manufacturing firms. The survey results show that the Palestinian economy is dominated by small and medium family-owned businesses: more than 85% of all establishments are owned by a single individual. Private and public shareholder companies and partnerships constitute less than 11% of all firms. The Small and Medium Enterprise (SME) character of the Palestinian economy is again reflected in the fact that only 137 establishments employ more than 100 people (100 in the West Bank and 37 in Gaza). Of those, 27 are manufacturing establishments, 26 are health care institutions, 17 are educational establishments, 13 offer financial services and 12 operate in the ICT sector. The vast majority of establishments in the Palestinian Territory employ less than nine workers.

Considering the challenges being faced by SMEs this chapter attempts to understand factors that drive SMEs to innovate, identify nature of SME innovations and achievements of SME innovations. The chapter also analyzes and compares the growth rates of innovative SMEs with non-innovative SMEs. These aspects about innovative SMEs have been studied

in three industry sectors: agribusiness, furniture and stone and marble industries.

2. Innovation and SMEs

Schumpeter (1934) proposed a list of various types of innovations: (1) introduction of a new product or a qualitative change in an existing product; (2) process innovation new to an industry; (3) the opening of a new market; development of new sources of supply for raw materials or other inputs; and (4) changes in industrial organization. It is crucial to know why technological change occurs, why firms innovate. Based on Oslo Manual, an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. The minimum requirement for an innovation is that the product, process, marketing method or organizational method must be new (or significantly improved) to the firm. Innovation activities are all scientific, technological, organizational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations. Innovation activities also include R&D that is not directly related to the development of a specific innovation.

Oslo Manual presents four types of innovation:

- 1) A **product innovation** is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics. Product innovations can utilize new knowledge or technologies, or can be based on new uses or combinations of existing knowledge or technologies.
- 2) A **process innovation** is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software. Process innovations can be intended to decrease unit costs of production or delivery, to increase quality, or to produce or deliver new or significantly improved products.

- 3) A **marketing innovation** is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. Marketing innovations are aimed at better addressing customer needs, opening up new markets, or newly positioning a firm's product on the market, with the objective of increasing the firm's sales.
- 4) An **organizational innovation** is the implementation of a new organizational method in the firm's business practices, workplace organization or external relations. Organizational innovations can be intended to increase a firm's performance by reducing administrative costs or transaction costs, improving workplace satisfaction (and thus labor productivity), gaining access to non-tradable assets (such as non-codified external knowledge) or reducing costs of supplies.

There are four major categories of factors primarily relating to innovation. These concern business enterprises, science and technology institutions, and issues of transfer and absorption of technology, knowledge and skills. In addition, the range of opportunities for innovation is influenced by the surrounding environment of institutions, legal arrangements, macroeconomic settings, and other conditions that exist regardless of any considerations of innovation. Thus, It is important to distinguish between internal and external (or endogenous and exogenous) sources of change. Internally, interest is likely to focus on the roles of the R&D department, and the involvement of all parts of the firm, particularly the marketing side, in decisions to innovate and on innovation activities. Externally, the focus will be on public research institutions as sources of technical information, and on inter-firm or inter-industry technology flows. Consideration of external sources of innovation or technological change ought logically to extend to international sources of technology, and be structured in such a way as to throw light on some of the unresolved problems with the technology balance of payments.

However, capacity of SMEs in innovation varies significantly, depending on their sector, size, focus, resources, and the business environment in which they operate (Burrone and Jaiya, 2005). Particularly innovation in the manufacturing sector is a very complex process, which is propelled by numerous factors (Becheikh et al. 2006). There are internal and external factors that lead firms to innovate (Porter and Stern, 2001). Firms should have in-house competence in the form of technically qualified and motivated entrepreneurs or managers with innovative ideas and technically

skilled employees. Similarly, there must be a market demand for the innovated products in the form of an explicit customer demand or implicit market opportunities. Of course, these internal and external factors may vary from firm to firm or from industry to industry or even from economy to economy and from time to time.

SMEs undertake processes of innovations in the form of material substitution, change in technical process of manufacturing, etc. to achieve cost reduction or quality improvement or product innovations in the form of changing product shapes/dimensions/sizes or introducing improved or new products, or both (Freeman and Soete, 1997). SME innovations are more likely to involve product innovation than process innovation (Hoffman et al. 1998)). Reid's (1993) study ascertained that 60 percent of the surveyed firms had undertaken both product and process innovations. Martinez-Ros (1999) found that product and process innovations are interdependent and closely linked.

SMEs need innovative products in order to gain and maintain competitive advantages (Lee, 1998). If they succeed, they will be able to realize a greater share of such innovated products in their total sales. Lehtimaki (1991) observed in the context of Finnish SMEs that on the average, the contribution of innovated new products was more to total sales than to profits. Roper (1997) whose study focused exclusively on product innovations in German, UK, and Irish SMEs, ascertained that the output of innovative SMEs grew significantly faster than that of non-innovators implying that innovated products contributed to the faster growth of the former. Engel et al. (2004) found that sales turnover of innovative firms grew faster than that of non-innovative firms. They found a significant relationship between the share of innovative sales and sales turnover change of firms. Lumiste et al. (2004) found that innovation effects were felt in terms of both product-oriented results such as (i) improvement in quality of goods and services, and (ii) increased range on goods and services, and process-oriented results like increased production capacity and improved production flexibility.

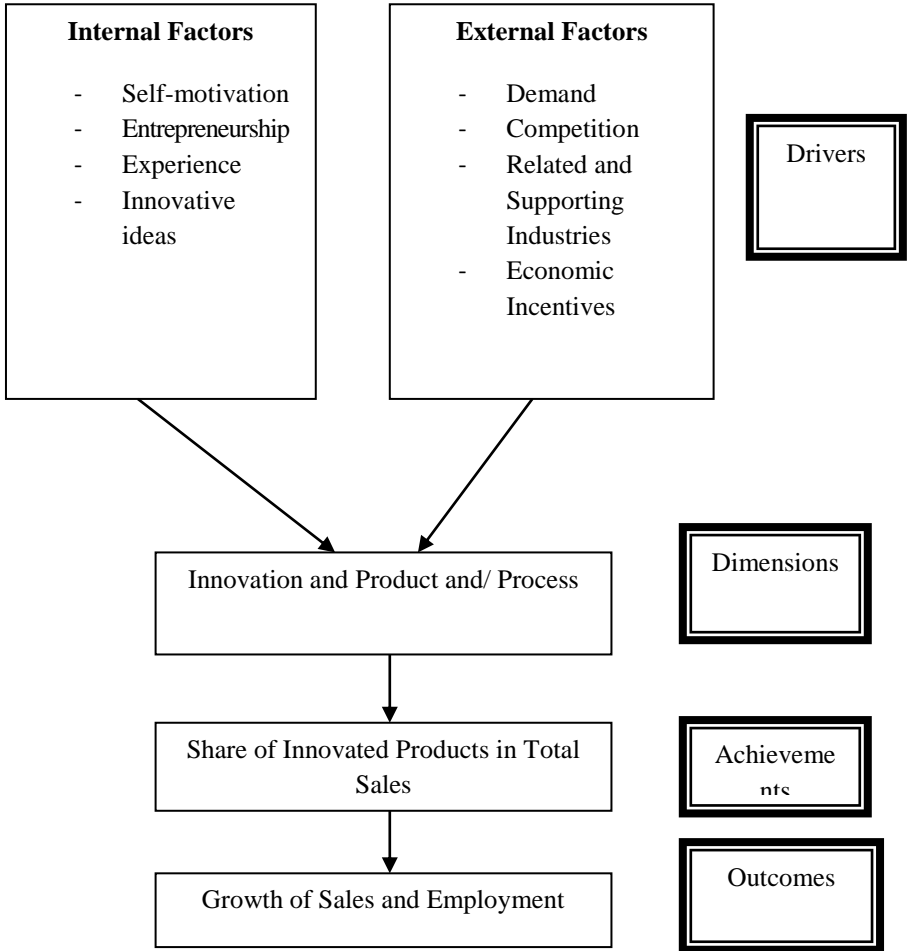
Roper (1997) comparing the innovation strategies of German, UK, and Irish SMEs, observed that there is a strong association between innovation and turnover growth. But Edwards et al. (2001) argued that growth is not necessarily dependent on those factors attributed to 'innovative potential'. Of course, they further stated that this does not mean that innovation does not lead to growth, rather there is a need to develop methods to assess the relationship. Bala Subrahmanya (2001) observed that SMEs of North East

England pursued radical innovations as a strategy of firm growth though he did not explicitly probe the relationship between innovation and growth. Danneels and Kleinschmidt (2001) claimed that innovative products present great opportunities for SMEs in terms of growth and expansion into new areas though they did not study the relationship between innovation and growth. Lumiste et al. (2004) found that innovation helped Estonian SMEs to improve their performance in terms of market share and diversified range of goods and services. However, they did not study whether the size of those SMEs changed over time.

Organization is a critical dimension of innovation, but its measurement appears to be very difficult both conceptually and in practice. Moreover organizational change is highly firm-specific, making it still more difficult to summarize in aggregate, sector or economy-wide statistics. In consequence, organizational innovation has not been included in the measures recommended in this chapter. This chapter concentrates on two of Schumpeter's categories, new and improved products and processes. This is not merely a matter of excluding changes which are insignificant, minor or do not involve a significant degree of novelty, but also of deciding how to treat aesthetic changes in products which may have an important effect on their appeal to customers and thus on the performance of the firm concerned.

There are four primary issues concerning innovation and growth of SMEs: (i) driving forces, (ii) dimensions, (iii) achievements, and (iv) outcomes. What factors drive SMEs to innovate? Whether these factors are internal or external to SMEs or both? What kind of innovations do SMEs undertake? Are they exclusively product focused or process focused or do they necessarily have to undertake both together? What are the achievements of innovation by SMEs? If innovation is successful, whether new products or improved products emerge due to product or process innovations, the share of such innovated products is likely to increase in the total sales of the firm. If this happens, such firms would be able to achieve growth in their sales turnover and employment resulting in the growth of firm size. Figure (1) presents the conceptual framework of the study.

Figure 1: Innovation and SME growth



However, all of these studies are related to industrialized countries and therefore their relevance to a developing country like Palestine might be questioned. This chapter discusses three low tech sectors in Palestine with a special focus on agribusiness, furniture and stone and marble sectors. These sectors managed to stand in front of the instable political and economic environment in the region.

The Palestinian economy depends significantly on imports of certain food items that could be produced domestically to compete on local markets. There is a need to further explore the various agricultural and food business sub-sectors as entry points for providing value-chain support that would aim at developing high quality to meet the needs of both local and export markets. The rationale for choosing the agriculture and food business sector also arises from the importance of providing employment and income generation opportunities to women. It also plays a key role in food safety and security. Caiazza, Volpe and Audretsch (2014) discuss the role of institutions, actors and activities in promoting innovation in agro-food system. The authors show that innovations in the agro-food industry depend on a multiple forces interacting with each other under specific rules in order to create new ways to deal with social or economic processes. The relevance of this topic for the whole economy leads to investigate main drivers of innovation in agro-food system.

The furniture industry evolved in Palestine almost 55 years ago and has grown to become one of the major promising Palestinian productive sectors. Prior to the political crisis and economic recession beginning in 2000, the

sector witnessed the establishment of many firms as a result of the growth of the Palestinian economy and the development of this industry to include new categories like interior design, hospitality and commercial furnishings. The study of (Trigkas, Papadopoulos, and Karagouni, 2012) aim to analyze the wood and furniture innovation system in the region of Thessaly, Greece, and the recording and benchmarking of innovative activity of enterprises in order to detect best practices applied, and to propose ways of increasing efficiency through improvement of the use of innovation inputs. The authors show that efforts have to be made to import innovation into the production process by means of investment in technological equipment. Generally, an increase in innovation performance incurs an increase in sales. The efficiency of the innovation system is evaluated as adequate when the majority of firms apply innovation inputs satisfactorily. However, there is additional margin for

improvement regarding R&D, staff training and the diffusion of innovation. The analysis of the innovation system at the sector level in the region may lead to a better innovation-oriented policy and decision making.

In Palestine, the stone and marble industry is considered as the biggest industry in terms of number of firms, sales volume, employment rate and total investment. The Palestinians are exporting to more than 50 countries worldwide. Della Corte, Zamparelli, and Micera (2013) propose a model of innovation and internationalization for SMEs and at testing it on tradition-based firms. These are SMEs whose productions reflect their territory's cultural identity. They are often micro-firms and weak in global markets. Since these firms characterize the European and Italian offer, the scientific challenge is to verify whether there are possible strategic paths, mainly based on interfirm collaboration and dynamic knowledge, that can help them getting higher levels of competitiveness. More specifically, the proposed model aims at understanding if it is possible to overcome these firms' weaknesses through collaboration in networking perspective. The authors find that tradition-based "Made in Italy" SMEs, as depicted in the empirical analysis, are characterized by limited size and scarce financial resources. This situation determines a difficult access to innovation in order to compete in global market. Thus, the research has highlighted that the only internationalization path, useful for this kind of firms, is cooperation, in a networking perspective. Firms that succeed in this process not only set the basis for survival but even to gain competitive advantage.

3. Methodology

The researcher used quantitative method and the questionnaire as a tool to collect the primary data from a random sample of 120 SMEs (employing less than 50 employees); 40 SMEs from agribusiness, furniture and stone and marble industries in Palestine. These firms were under the examination during the period (2009-2013). Each SME is the entity for which the required data and information are received and statistics are compiled. The questionnaire consists of three parts: The first part covers the characteristics of SMEs, entrepreneurial background, location and year of establishment. The second part covers the driving forces, objectives, sources, achievements in innovation. The third part includes the economic variables such as employment, and sales turnover. The questionnaire was finalized after the taking into account the views from academics, industry

experts and representatives of SME associations. The Cronbach alpha was calculated as 0.75.

To measure innovation, internal and external sources were measured. The internal sources of innovation are: self motivation; entrepreneurship; in-house R&D; marketing; and production. While the external sources of innovation are the following: demand; competitors; clients; consultancy firms; suppliers; educational institutions; and other related and supporting industries. On the other hand, the main obstacles or barriers to innovation are: economic factors; lack of appropriate sources of finance; lack of skilled personnel; lack of information; lack of infrastructure; and no need to innovate due to earlier innovations.

In order to identify drivers and achievements in innovation of SMEs in three industries, quantitative data were collected and analyzed making use of frequency tables for innovative SMEs. The data on comparison of the growth rate of innovative with non-innovative SMEs, were analyzed through the use of percentage of growth of economic variables for both innovative and non-innovative SMEs. For finding out the relationship between innovation and growth, the data were analyzed for innovative SMEs using correlation analysis, analysis of variance (ANOVA), and regression analysis.

Questionnaire design is crucial for the quality of the data collected on innovation. Small changes in the definitions or explanations given in the part of the questionnaire will all affect the information gathered. To evaluate the reliability of answers, firms were asked to indicate the degree of uncertainty by saying whether their figures are based on detailed accounts or are fairly accurate or rough estimates. Although this kind of question may well raise the share of participants who give rough estimates only, the response rate may be higher. Care must be taken to exclude activities which are part of the innovation process but rarely involve any R&D (*e.g. patent work, licensing, market research, manufacturing start-up, process re-engineering, tooling up*). At the same time, some activities are at least partly counted as R&D (*e.g. pilot plants, prototypes, industrial design, process development*).

4. Analysis and Results

The main results of the research study are the following:

Drivers, Dimensions and Achievements of Innovations

All SMEs in the three sectors selected for the study were the new start-ups for implementing their innovative ideas and/or to exploit market opportunities in 1980s and later. Majority of the entrepreneurs are in the age group of 40 to 50 years and hold associate degree or BA degree. Their size characteristics revealed that size structure of the SMEs is more towards small to medium sized enterprises (i.e. less than 50 employees).

Table (1) shows that the majority of SMEs are innovative in all the three sectors. A greater proportion of SMEs in the stone and marble sector is innovative as compare with agribusiness and furniture sectors. SMEs are generally known for informal innovations, without any exclusive structure and support systems for innovation. Most of the innovation was carried out along with the day-to-day manufacturing operations.

Table 1: Innovative and Non-innovative SMEs

Classification	Number of SMEs		
	Agribusiness	Furniture	Stone and Marble
Innovative	32	25	35
Non-innovative	8	15	5
Total	40	40	40

SMEs which have a track record of innovation are more likely to generate growth in sales than non-innovating firms. Both internal and eco-system factors are important in shaping SME innovation and growth in sales. For Palestinian SMEs specifically, however, the evidence base remains limited in some areas. Table (2) presents that a majority of the SMEs identified both internal and external factors as the driving forces for their innovations as discussed by Porter and Stern (2001). However, a considerable number of SMEs in the stone and marble sector has identified external factors as the driving force for their innovations. Very few enterprises attributed exclusively internal driving forces for innovations. It is clear that both internal factors such as self-motivation, technical education background, work experience, and innovative ideas of entrepreneurs on the one hand, and external factors such as customer requirements, information given by

suppliers of equipment and materials, and competition are responsible for a majority of SMEs to innovate.

Table 2: Internal and External Drivers of Innovation

Drivers of Innovation	Number of SMEs		
	Agribusiness	Furniture	Stone and Marble
Internal Factors	2	4	5
External Factors	5	6	10
Internal and External	25	15	20
Total	32	25	35

Internal enablers - there is strong evidence for the importance of skills, R&D, and capital investment in shaping SME innovation and growth. The evidence base is weaker - particularly for SMEs – in terms of the value of design, intellectual property management, people management, employee engagement, and other firm characteristics such as family ownership, year of establishment and location. External enablers - purposive links formed between SMEs and their partners – play a positive role in innovation and growth in sales, particularly in strong eco-systems. Targeted supply-side and demand-side policies have also proven effective in promoting SME innovation and growth in sales. Less is known about which eco-system characteristics are most important in influencing SMEs' innovation and export success.

Innovation in SMEs was found to be at the both levels product level and/or process level. Product focused innovations comprised of the introduction of new products and/or the improvement of existing products through changing product designs and dimensions or quality improvement to suit customer requirements. Process-based innovations involved the introduction of new process technology for existing products, adoption of cost reduction techniques, etc. Table (3) shows that a higher proportion of SMEs in the three sectors has undertaken both product and process focused innovations.

Table 3: Dimensions of SME Innovation

Classification	Number of SMEs		
	Agribusiness	Furniture	Stone and Marble
Product Innovation	3	5	6
Process Innovation	10	5	8
Product and Process	19	15	21
Total	32	25	35

Table 4: Percentage of Innovated Products and/ or Processes in Total Sales

Percentage Share	Number of SMEs		
	Agribusiness	Furniture	Stone and Marble
Zero	4	6	3
Up to 10%	16	11	7
10% - 15%	8	5	10
15% - 25%	4	3	15
Total	32	25	35

Table (4) presents the share of innovative products in total sales in innovative SMEs. A higher percentage of innovative SMEs have succeeded in converting their innovations into sales in the stone and marble sector as compared with furniture and agribusiness sectors. Among those SMEs working in the stone and marble sector have succeeded in crease sale on account of innovations. The majority accounted for a share of innovated products in total sales in the range of 10 percent to 25

percent. Thus, as shown in the table, more successful innovative firms might realize a higher share of innovated products in total sales compared to less successful innovative firms.

Innovative and Non-innovative SMEs

The growth performance of SMEs has been analyzed using the SMEs data on sales and employment. The SMEs were asked provide data on growth of employment and sales during the last five years.

Table (5) presents the growth of sales and employment for innovative and non-innovative SMEs. It is clear that innovative SMEs have enjoyed a higher rate of growth compared to non-innovative SMEs in terms of sales, and employment in all the three sectors. However, the growth rates of the two variables differed within as well as across the sectors. In all the three sectors innovative SMEs registered a higher growth of sales then by employment as compared with non-innovative SMEs . It is to be noted that employment of non-innovative SMEs was declined absolutely in the furniture sector.

Table 5: Growth (Percentage) of Innovative and Non-innovative SMEs

	Agribusiness		Furniture		Stone and Marble	
Variable	Innovat ive SMEs	Non- Innovat ive	Innovat ive SMEs	Non- Innovat ive	Innovat ive SMEs	Non- Innovat ive
Sales	18.3	12	15.5	12.1	24.5	10
Employment	6.2	1.2	4.3	-10	6.8	2

Innovation and Growth of SMEs

To find out the relationship between innovation and SME growth, the researcher testify whether there is any statistically significant positive correlation between the average rate of growth of sales and percentage of

innovated products in total sales. The percentage share of sales could be due to:

- technologically new products commercialized during the last five years;
- technologically improved products commercialized during the last five years;
- products that are technologically unchanged, or subject only to product differentiation, produced with changed production methods during the last five years;
- products that are technologically unchanged, or subject only to product differentiation, produced with unchanged production methods during the last five years.

The results (shown in table 6) indicate that there is a statistically significant positive correlation (at 0.05 level) between sales growth and percentage of innovation sales in total sales.

Table 6: Correlation between Sales Growth and Innovation Sales

	Number of SMEs		
	Agribusiness	Furniture	Stone and Marble
Correlation Coefficient	0.38*	0.34*	0.40*
*Significant at 0.05			

To analyze whether higher growth SMEs should have higher shares of innovated products in total sales compared to lower growth SMEs; the innovative SMEs of each sector were divided into two groups: high growth SMEs, and low growth SMEs. The results clearly indicate that higher growth innovative SMEs, on average, have a higher share of innovated products in total sales compared to low growth innovative SMEs in all the three sectors (see table 7).

Table 7: Share of Innovated Products in Total Sales

	Agribusiness		Furniture		Stone and Marble	
	No. of SMEs	% of IPs in Sales	No. of SMEs	% of IPs in Sales	No. of SMEs	% of IPs in Sales
H. Growth	12	22.5	19	19.5	22	31
L. Growth	20	15.4	6	11.2	13	22

- IPs = Innovated Products

The results clearly indicate that the percentage share of innovated products in total sales has a significant influence on the average rate of growth in innovative SMEs in all the three sectors. Thus if an innovative SME could expand the scale of production and achieve an increase in innovation sales, it will be able to experience a significant improvement in its performance. This enables us to conclude that innovation sales do contribute to firm growth.

5. Conclusion

This research paper has presented the driving forces to innovations, and achievements of innovations carried out by SMEs in the agribusiness, furniture and stone and marble sector in Palestine. It also discussed how far the growth rates of innovative SMEs are different from that of non-innovative SMEs. Finally, it has explored and analyzed the relationship between innovation and growth with respect to innovative SMEs of the three sectors.

Majority of SMEs in all the three sectors are innovative. However, Most of the innovative SMEs attributed the sources of their innovations to a combination of internal factors such as self-motivation, technical qualification, knowledge, experience, and innovative ideas of entrepreneurs, and external factors like customer requirements and demand, information provided by suppliers of equipment and materials, market opportunities, and competition.

Majority of innovative SMEs in the three sectors focused on both product and process innovations and managed to convert their innovative efforts into sales as they realized varying proportions of innovated products in their total sales. This has enabled the majority of them to achieve sales growth. Innovative SMEs registered higher growth relative to non-innovative SMEs in terms of sales turnover and employment. There was a statistically significant positive correlation between innovation sales and sales growth. Innovative SMEs, which experienced higher growth accounted for a higher share of innovated products in their total sales and employment relative to those which experienced lower sales growth. To conclude, the overall analysis lends substantial confidence to the argument that innovation contributes to the growth of firms.

The results of the survey suggest that the starting point for developing Palestinian SMEs is to enable them to improve their competitiveness through innovation. This is a rather difficult task, given the adverse environment facing these enterprises. It requires a cohesive policy framework that addresses the multitude of factors influencing enterprises' performance at the macro, meso (institutional environment) and micro levels. This policy framework should also be consistent with the PA's development vision, in which the private sector should play a crucial role. The Palestinian Authority's role should support the creation of an enabling environment that fosters SME development. They should support SMEs, particularly in priority sectors. They should include simplifying and streamlining licensing requirements, investment incentive programs, employment skill upgrading programs, and reconsidering existing investment laws so as to enable SMEs to benefit from tax holidays. In addition, the PA can establish a special inter-ministerial body to monitor SMEs' performance and ensure that their development interests are incorporated into trade and industrial policy, in accordance with the overall sectoral focus of the development strategy. The PA may also consider seeking the donor community's assistance in establishing a special fund for fostering SME development. The fund can provide support for market support institutions; technological innovation; linking SMEs with foreign enterprises; and enterprise training activities, loan and exchange of research personnel, and internship programs. Other policy measures may include research and development (R&D) tax breaks and state-subsidized R&D programs.

Suhail Sami Sultan holds a doctorate degree in Business Administration from Maastricht University in the Netherlands and Master of Philosophy and Master in Business Administration from Maastricht School of Management in the Netherlands. Currently, Dr. Sultan is the director of MBA program at Birzeit University in Palestine and works as a national consultant with many international organizations in the region. Dr. Sultan published many articles in prestigious journals.

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