**THE ROLE OF INNOVATIONS ON THE SMES COMPETITIVENESS**

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Abstract

*Small and medium-sized enterprises are particularly important for the national economy. In order to maintain or improve their market position in a changing and competitive environment, SMEs must be constantly innovative. Innovation is a key factor for improving SMEs performances, for increasing their competitiveness and for their survival on the market. Innovation is a multifaceted concept and it can be classified according to the object, the field, their relevance and their origin. As a result of innovation, SMEs improve product quality, reduce production costs, increase the range of products, replace outdated products, improve their performances and thus enhance their competitiveness.*

*This paper treats the complex problematic of the innovation impact to the SMEs performances and their competitiveness, with special review for the territory of the Republic of Macedonia.*

Key words: innovation, SMEs performances, competitiveness, Republic of Macedonia

**Introduction**

The challenge of the 21st century for SME-s is global competitiveness. Globalization of markets and the uncertain business environment have increased the level of competitiveness, which is putting increasingly greater pressure organizations to acquire and to increase their competitive advantages.This means that customers need to be provided with constant and reliable products and services of a recognized quality, while the market environment is characterized by global competition. An SME is able to cope with the global challenge if it realizes reliable, balanced and high-standard operation in its business. Innovation has been identified by different authors as the principal driver of competitiveness. In a changing and competitive environment, innovation is a key factor for any business survival.

**Defining SMEs**

There is no universally agreed definition of an SME across all academic disciplines. The term SME covers a wide range of definitions and measures varying from country to country and between the sources reporting SME statistics. Some of the commonly used criteria are the number of employees, total net assets, sales, investment level, shareholders funds and even paid up capital. Thus, depending on the criterion selected, the same firm can be classified as “small” under one criterion and as “medium” under another criterion. As such, broad comparisons of SMEs across different countries may not be entirely appropriate because of the varied operational definitions employed. As there is no uniform definition of a SMEs in the global economy, different counties have defined SMEs in different ways. However the most common definitional basis used is employment, and here again there is variation in defining the upper and lower size limit of an SME. A large number of sources define an SME to have a cut-off range of 0-250 employees.

Peterson et al. (Sultan, 2007, p.47) explain that both quantitative and qualitative measures are used in defining the SMEs. These definitions vary according to the geographic area and the purpose of the study. Quantitative measures are the most popular tools to define the SMEs such as the number of employees and the annual turnover.

Gunasekaran et al. (Sultan, 2007, p.47) suggest that the SMEs need to be defined within the context of the country in which they operate, as typically, the concept varies by the change of country.

Story (Sultan, 2007, p.48) defines the SMEs as follows: (a) enterprises with a relatively small share of their market; (b) managed by owners or part-owners in a personalized way, and not through the medium of a formalized management structure; and (c) acting as separate entities, in the sense of not forming part of large enterprise or group.

Innovative SMEs are defined as small and medium enterprises which create value through 'innovation,' or seek innovative activities continuously.

Innovative SMEs are those companies which play a leading role in creating jobs and added value by improving existing products or services, or producing and distributing new ones. They have potential to drive economic growth and create quality jobs through continuous innovation activities.

**The contribution of SMEs**

SMEs are the engine of the national economy playing a very important role in the overall economic development of each country. These enterprises are also known as foundation enterprises. SMEs are a major source of technological innovation and development of new products. Moreover, SMEs, with their high turnover and adaptability, play a vital role in addressing regional and sectoral imbalances in a country’s economy. Furthermore, SMEs’ easy access and exit to markets renders economies more flexible and competitive.

Compared to a large enterprises, SMEs employ more workers per unit of capital, contribute to total savings and equal income distribution in the economy, have formidable impact on regional economic development, serve as “training platform” for upgrading and developing the skills of industrial workers and entrepreneurs, contribute significantly to forward and backward linkages and finally play an important complementary role to large firms in the economically diverse sectors.

Tolento (Sultan, 2007, pp.47) summarizes some of the potential economic and social benefits of the SMEs to their capacity as follows: (a) create jobs at low cost of capital; (b) contribute positively to the Gross Domestic Product (GDP); (c) provide an opportunity to expand the entrepreneurial base; (d) provide the required flexibility to adapt to market changes; (e) provide support to large scale enterprises; (f) enter into market niches which are not profitable for larger enterprises; and (g) contribute to development policies that are more oriented towards decentralization and rural development.

The importance of innovative SMEs has been recognized by various regional and international organizations. In this context, due to the considerable importance of SMEs in job creation as well as economic growth and development, policies and approaches to enhance their competitiveness have become an important part of developmental policy making.

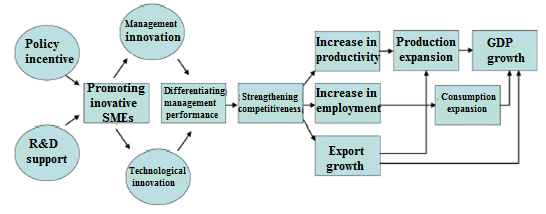


Figure 1: Flow chart on economic impacts of innovative SMEs

(Tiwari and Buse, 2007, pp.)

Levy et al. (1999) emphasize the extreme importance of the existence of SMEs and their performance for the economic development of most of the less-developed countries.

SMEs also play a crucial role in the developing countries because of their contributions to poverty reduction, export growth of manufactured products and development of entrepreneurship, manufacturing industry and rural economy.

The importance of SMEs in developing countries is because of their characteristics, which include the following (Tambunan, 2009, pp.2-5):

1. Their number is huge, and especially small enterprises (SEs) and micro enterprises (MIEs) are scattered widely throughout the rural areas and therefore they may have a special “local” significance for the rural economy.

2. As being populated largely by firms that have considerable employment growth potential, their development or growth can be included as an important element of policy to create employment and to generate income. This awareness may also explain the growing emphasis on the role of these enterprises in rural development in developing countries. The agricultural sector has shown not to be able to absorb the increasing population in the rural areas. As a result, rural migration increased dramatically, causing high unemployment rates and its related socio-economic problems in the urban areas. Therefore, non-farm activities in rural areas, especially rural industries being a potentially quite dynamic part of the rural economy have often looked at their potential to create rural employment, and in this respect, SMEs can play an important role.

3. Not only that majority of SMEs in developing countries are located in rural areas, they are also mainly agriculturally based activities. Therefore, government efforts to support SMEs are also an indirect way to support development in agriculture.

4. SMEs use technologies that are in a general sense more “appropriate” as compared to modern technologies used by large enterprises (Les) to factor proportions and local conditions in developing countries, i.e. many raw materials are locally available, but capital including human capital, is very limited.

5. Many SMEs may expand significantly, while the great majority of MIEs tend to grow little and hence do not graduate from that size category. Therefore, SMEs, especially medium enterprises (MEs) are regarded as enterprises having the “seedbed Les” function.

6. Although, in general, people in rural areas are poor, existing evidence shows the ability of poor villagers to save a small amount of capital and invest it; they are willing to take risks by doing so. In this respect, SMEs thus provide a good starting point for the mobilization of both the villager’s talents as entrepreneurs and their capital; while, at the same time rural SMEs can function as an important sector providing an avenue for the testing and development of entrepreneurial ability.

7. SMEs, especially SEs and MIEs finance their operations overwhelmingly by using the personal savings of the owners, supplemented by gifts or loans from relatives or from local informal moneylenders, traders, input suppliers, and payments in advance from consumers. These enterprises can therefore play another important role, namely as a means to allocate rural savings that otherwise would be used for unproductive purposes. In other words, if productive activities are not available locally (in the rural areas), rural or farm households having money surplus might keep or save their money without any interest revenue inside their home because in most rural areas there is a lack of banking system. Or, they use their wealth to buy lands, cars, motorcycles or houses and other unnecessary luxury consumption goods which these items are often considered by the villagers as a matter of prestige.

8. Although many goods produced by SMEs are also bought by consumers from the middle and high-income groups, it is generally evident that the primary market for SMEs’ products is overwhelmingly simple consumer goods such as clothing, furniture and other articles from wood, leather products, including footwear, household items made from bamboo and rattan and metal products. These goods cater to the needs of local low income consumers. SMEs are also important for securing the basic need goods for this group of the population. However, there are also many SMEs engaged in the production of simple tools, equipments, and machines for the demands of farmers and producers in the industrial, trade, construction, and transport sectors.

9. As a part of their dynamism, SMEs often achieve rising productivity over time through both investment and technological changes; although different countries within the group of developing countries may have different experiences with this, depending on various factors (the level of economic development in general and that of related sectors in particular; accessibility to main important determinant factors of productivity, particularly capital, technology and skilled manpower; and government policies that support development of production linkages between SMEs and Les as well as with foreign direct investment or multinational companies).

10. One advantage of SMEs is their flexibility, relative to their larger competitors. In Berry et al. (2001), there enterprises are construed as being especially important in industries or economies that face rapidly changing market conditions, such as the sharp macroeconomic downturns that have bedeviled many developing countries over the past few years.

**Defining innovation**

Many authors consider that the innovation is the principal driver of competitiveness as well as a key factor for any business survival especially when the enterprises are operating in a changing and competitive environment. It encompasses a wide research field that analysis multiple aspects. There are different terms to refer to it and to explain the complexity of the concept.

The origin of the word “innovation” comes from the Latin words “innovatio” or “innovo.” Both words mean to “renew or to make something new” (Norrman 2008, p. 9).

The term “innovation” was used for the first time by Schumpeter at the beginning of the 20th century. Schumpeter defined innovations as “product, process and organizational changes that do not necessarily originate from new scientific discoveries, but may arise from a combination of already existing technologies and their application in a new context“ (Urbancova, 2013, pp.83).

Innovation is defined as “the implementation of a new or significantly improved product (goods or services) or process, new marketing methods, or a new organizational method in business practices, workplace organization, or external relations” (U.S. Census Bureau 2006).

“Innovation is a complex process that brings ideas to market in the form of new or improved products or services. This process consists of two parts, which are not necessarily sequential to each other, although they are linked paths between them in a back and forth direction. One part is specialized on the known-how and the other part is devoted primarily to the application as a process, a product or a service. In both parts, they incorporate new advantages to the market”. (Castro, E., & Fernandez de Lucio, I., 2001).

The process of innovation comes from different sources and it can be classified according to a range of criteria. Referring to product innovation, it can be applied to a good or service, it involves changes in working methods or production functions. Innovation is not limited only to the product or its manufacturing process, but it involves many other aspects that affect the company decision-making. Table 1, presents the multifaceted concept depending on the direction applied.

Table 1

Innovation as a multifaceted concept

|  |  |
| --- | --- |
| Depending on the object   * Product * Process | Depending of their relevance   * Incremental * Radical |
| Depending on the field   * Technology * Organizational * Marketing | Depending on their origin   * R&D * Incorporation * Imitation * Experience |

Source: Rojas et al., pp.76

The literature is full of attempts to categorize different levels and types of innovation. Some of the types of innovation are following.

Marketing innovation is concerned with improving the mix of target markets and how chosen markets are best served. Its purpose is to identify better (new) potential markets and better (new) ways to serve target markets.

Organizational innovation means innovation of business models, management techniques and strategies, and organizational structures.

A process innovation is the implementation of a new or significantly improved production process, distribution method, or support activity for goods or services. Thus a pure process innovation simply changes the way in which a product is made, without changing the product itself. The literature has identified a variety of different forms of process innovation: organizational innovation, supply chain innovation, marketing innovation and business model innovation.

Product innovation is defined as: goods or services which is either new or significantly improved with respect to its fundamental characteristics, technical specifications, incorporated software or other immaterial components, intended uses or user friendliness. A pure product innovation creates a new or improved product for sale without any change in the production process.

Radical innovation mean significantly different changes to product, services or process – “do what we do differently”. Radical innovation describes improvements that fundamentally alter the character of a product or process. This type of innovation establishes a new dominant design and hence, a new set of core design concepts embodied in components that are linked together in a new architecture. Radical innovation creates unmistakable challenges for established firms, since it destroys the usefulness of their existing capabilities.

Incremental innovation is known as small improvements to existing products, services or process – “doing what we do but better”. Incremental innovation describes the steady stream of improvements to a particular product or process which do not change the character of that product or process in any fundamental way. This type of innovation refines and extends an established design. Improvement occurs in individual components, but the underlying core design concepts and the linkage between them. This tends to reinforce the competitive positions of established firms since it builds on their core competencies.

Discontinuous innovation – radical innovations which change the “rules of the game” and open up a new game in which new players are often at an advantage.

Modular innovation changes the core design of one or more components but does not change the overall product architecture. This type of innovation will require new knowledge for one or more components, but the architectural knowledge remains the same. This is a competence destroying innovation since new knowledge of a new component has to be acquired and the knowledge of the replaced component is no longer a valuable asset.

Component innovation – changes at the level of components in a bigger system.

Architecture innovation – changes in the whole system. The essence of an architectural innovation is the reconfiguration of an established system to link together components in a new way. Architectural innovation does not mean that components remain unchanged, but they are changed in such a way that it opens up for new ways of linkage between the components. This change is so small that the core concept behind the changed component is the same and the associated scientific and engineering knowledge remain the same.

Position innovation mean changes in the context in which the product/services are introduced.

Paradigm innovation mean changes in the underlying mental models which frame that the organization does.

According to Verworn et al. (Tiwari and Buse, 2007, pp.5) a simplified innovation process has several systematic steps such as requirement analysis, idea generation, idea evaluation, project planning, product development, product testing, and product marketing which may overlap each other.

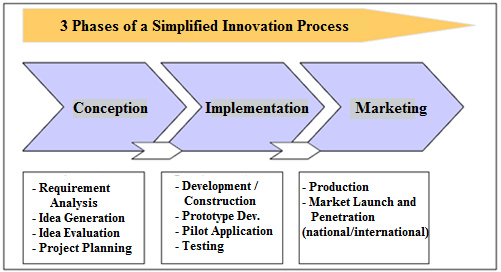


Figure 2: Three phases of a simplified innovation process

(Tiwari and Buse, 2007, pp.5)

Innovative products will help firms to strength their competitive position in home as well as international markets. This necessitates innovation efforts to bring new and/or better products into the market enable more efficient and cost-effective production, distribution and after-sales services. That is a “goal model” for innovation activities in SMEs which may be referred to as a “BCF model for innovation”, (BCF = better, cheaper and faster).

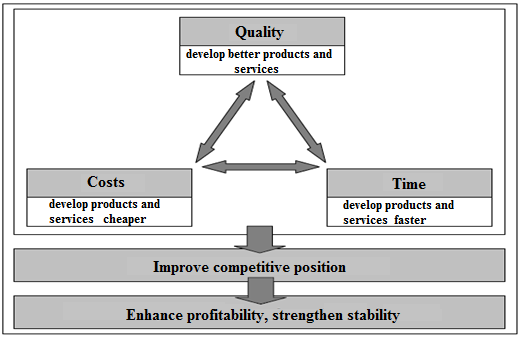


Figure 3: The “BCF” model for innovation in SMEs

(Tiwari and Buse, 2007, pp.7)

Various factors encourage an organization to innovate. These factors can be summarized as follows: (Sullivan, 2008, pp.12)

- Emerging technologies

- Competitor actions

- New ideas from customers, strategic partners, and employees

- Emerging changes in the external environment

SMEs have direct contact to customers thereby potentially gaining valuable impulses in the form of customer feedback.

Acting often in a more informal manner and confronted with fewer intra-firm hierarchy levels than large firms, SMEs seem to be, in many respects, better placed for innovations than their large counterparts. This potential edge, in normal course, should enable them to develop products better suited to market demands and thus bring more success.

In practice, however, the resource constraints coupled with market uncertainties (and a few other factors) limits the ability of SMEs to indulge in dedicated R&D and to experiment with the purpose of new product development (table 2).

Table 2

Previous studies on barriers to innovation in SMEs

|  |  |
| --- | --- |
| Barriers to Innovation in SMEs | Studies (amongst others) |
| Financial bottlenecks   * hindered access to external finance * high innovation cost (and therefore) * high economic risks | Acs and Audretsch (1990), Baldwin and Gellatly (2004), rammer et al. (2006) |
| Shortage of and hindered access to qualified personnel | Ylinenpaa (1998), FES (2004), Rammer et al. (2005), Rammer et al. (2006) |
| Limited internal know-how to manage the innovation process effectively and efficiently (e.g. missing project management know-how) | Mohnen and Rosa (1999), Rammer et al. (2005), BMBF (2006) |
| Missing market know-how   * to meet customer’s needs * to enter foreign markets | Ylinenpaa (1998), Friedrich Ebert Stiftung (2004), HWWA (2004) |
| Bureaucratic hurdles   * long administrative procedures * restrictive laws and regulations | Acs and Audretsch (1990), HWWA (2004), Rammer et al. (2006), BMBF (2006) |
| Lack of intellectual property rights | Baldwin and Gellatly (2004), BMBF (2006) |

(Tiwari and Buse, 2007, pp.8)

**SMEs competitiveness**

Competitiveness is a complex, multi- dimensional, multi-faceted, relative and very confusing concept. There are numerous definitions and models for this term, but still no universally agreed or widely accepted definition can be found, neither a universal model for competitiveness. Since early 1990s until today, various authors, depending on the width and aspect of their research, offer different definitions for the competitiveness and continually expand their models for competitiveness.

According to Waheeduzzaman and Ryabs (1996) the competitiveness concept involves different disciplines like comparative advantage and/or price competitiveness perspective, strategy and management perspective, as well as historical and socio-cultural perspective.

Competitiveness, as explained by Porter (1990), can be defined at three levels: firm, industry and nation. Measures of the competitiveness at the firm level include firm’s profitability, firm’s exports, and market share.

Ramasamy’s (Rojas et al. ) stated that competitiveness is the ability to increase market share, profit and growth in value added and to stay competitive for a long term.

According to Barney, competitiveness of a firm is its capacity to achieve its targets, expressed in a variety of terms depending on the context.

Within a macroeconomic perspective, a competitive firm develops and sustains a level of performance that contributes to the Gross Domestic Product (GDP), employment opportunities, and the wealth of the people. From an entrepreneurial perspective, a competitive firm needs to survive in the market and to achieve market share and profitability. The success of a competitive firm can be measured by both objective and subjective criteria. Objective criteria include return on investment, market share, profit and sales revenue, while subjective criteria include enhanced reputation with customers, suppliers, and competitors, and improve quality of delivered services. Barney discusses four approaches to measure the firm’s competitiveness: firm’s survival, stakeholder approach, simple accounting measures, and adjusted accounting measures.

Feurer and Chaharbaghi measure competitiveness quantitatively by profit, ability to raise capital and cash flow in terms of liquidity status.

Soliman adds cost, quality, delivery dependability, flexibility and innovation as factors formulating such a competitive position.

According to M. Porter, a firm experiences a competitive advantage when “its actions in an industry create economic value and when few competing firms are engaging in similar actions.”

De Wit and Meyer (1999), Buffam (2000), and Christensen (2001) indicate that a firm has a competitive advantage when it has the means to edge out rivals when competing for the favor of customers.

There are four conditions necessary for firm’s competitiveness: (Man, 2004, pp.3)

* competitiveness calls for sustainability, which focuses on long term performance;
* controllability is a necessary condition related to the various resources and capabilities of a firm rather than simply the favorable external conditions leading to superior performances;
* competitiveness requires relativity, concerning how competitive a firm is when being compared with the rest of the industry;
* dynamism (dynamic transformation of competitive potentials through the competitive process into outcomes i.e. ability of companies to continually create new forms of competitive advantages).

The factors influencing competitiveness of SME-s can be divided into two groups, into external and internal factors.

Table 3

Influencing factors of competitiveness

|  |  |
| --- | --- |
| External factors: | Internal factors: |
| Employment | Marketing |
| Productivity | Innovation |
| Capital supply opportunities | Productivity |
| Globalization | Knowledge-based development |
| EU | Capital supply |
| Business relations | Management, organization, structure |
| Alliances | Cost-efficiency |
| Networks | Compliance |

Source: Kadocsa and Borbas, 2010, pp.108

**The role of innovations on the SMEs competitiveness**

Globalization of the markets and increasing international competition force SMEs to search for new, innovative, flexible and imaginative ways to survive. Therefore, the above statement provides a relationship between innovation and SME survival.

According to Tushman & Nadler (Urbancova, 2013, pp.82) “organizations can gain competitive advantage only by managing effectively for today while simultaneously creating innovation for tomorrow”. They suggested that “there is perhaps no more pressing managerial problem that the sustained management of innovation”. According to them, visionary leadership and also people, structures and values are important factors that affect whether an organization realizes benefits from innovation. Innovation is still seen as a critical drive of economic performance.

In the World Bank report (2009) innovation has been viewed as vital in ensuring competitive advantage by organization and long term loyalty.

An important issue facing SMEs worldwide is continuous improvement. In today's markets the inputs of customers and their fast changing needs are imperative for enterprises forcing them to continuously improvement of their business. SMEs need to consider continuously improving production costs, delivery schedules, manufacturing skills, supplier relationship and productivity in all practices. SMEs constantly experience shortages in capital to employee skills to improve production capacity, which makes it necessary to continuously improve their production strategies with customized products and process-focused operations. Moreover SME operations function should embrace competitive priorities of low production costs, fast on-time deliveries, high quality products and customer services. SMEs that have adapted their production systems to be flexible and their costs and prices competitive will be able to compete and capture increased market share. This signifies the importance of innovation in enhancing loyalty and long term customer value. The innovation output is determined by the innovative input, i.e., the transformation of input into output. The innovative output is related to the firm performance. Innovative output, via firm performance, would affect the innovation expenditures. The overall economic performance of a firm would affect all three stages of the innovation process of a firm. The growth of total sales would be higher for innovating firms than for non-innovating firms, etc. Innovation boosted competitiveness of SMEs.

Innovations enable SMEs to bring new and / or improved products and services in the market and thus to meet customers' needs better and fully, to gain loyal customers, to increase sales of products and services, to substitute outdated products, to increase their income, to improve their market share, to increase their competitive advantage, to conquer new market segments and new markets, to improve their performance, and as a result positively to affect on the economic development of the country in which they operate.

**SMEs and innovation in the Republic of Macedonia**

SMEs are crucial for the economic development of the Republic of Macedonia. They represent 99.395 % of the total number of enterprises in Macedonia in 2013 and employ 78% of the total number of employees.

The structure’s data for active business entities by the number of employees indicates that the largest share of 85% belongs to the enterprises with 1-9 employees. Then follow businesses without employees or entities with an unspecified number of employees (excluding data for employees) with 6.2%. On the third place with share of 4.2% are enterprises with 10-19 employees, followed by subjects with 20-49 employees whose share is 2.5%. Next are entities with 50-249 employees with 1.8% share and only 0.3% of active business entities have over 250 employees (table 4).

Table 4

Active enterprises in Macedonia by size, by year

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Enterprises | 2009 | 2010 | 2011 | 2012 | 2013 |
| Micro | 38 107 | 39 999 | 46 322 | 53 117 | 49 935 |
| Small | 31 873 | 34 702 | 25 984 | 20 341 | 20 241 |
| Medium | 533 | 584 | 607 | 631 | 683 |
| Large | 197 | 212 | 205 | 335 | 431 |
| Total | 70 710 | 75 497 | 73 118 | 74 424 | 71 290 |

Source: State Statistical Office of the Republic of Macedonia

According to data of the State Statistical Office of the Republic of Macedonia, only 42.8% of companies in Macedonia have implemented some kind of innovation in their work during the period from 2010 to 2012. The others 57.2% did not dare to do it. The highest percentage of the innovators is for large companies, or 75.8%, while the smallest percentage is for the small firms - only 39.9% (table 5).

By sectors, the most firms that have introduced innovations are from the sector Financial and insurance activities - even 89.1%.

Table 5

Enterprises according to innovativeness, by sector and size

|  |  |  |  |
| --- | --- | --- | --- |
|  | All sectors | Innovators | Not Innovators |
| Total | 4 818 | 2 060 | 2 758 |
| Small | 3 967 | 1 583 | 2 384 |
| Medium | 719 | 337 | 342 |
| Large | 132 | 100 | 32 |

Source: State Statistical Office of the Republic of Macedonia

From the total number of innovative enterprises in the Republic of Macedonia, 24.7% have introduced innovation of products and processes, 46.4% have introduced organizational and marketing innovations, and only 18.2% have introduced a product and process as well as organizational and marketing innovation (table 6).

Table 6

Enterprises according to the type of innovation

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2010-2012 | | |
| Innovators in product or process | Innovators in the organization or marketing | Product/process and organizational/marketing innovators |
| Total | 509 | 956 | 374 |

Source: State Statistical Office of the Republic of Macedonia

**Conclusion**

Globalization of the markets and increasing international competition force SMEs to search for new, innovative, flexible and imaginative ways to survive. Therefore, the above statement provides a relationship between innovation and SME survival.

Innovation is viewed as vital in ensuring competitive advantage by organization and long term loyalty. In a changing and competitive environment, innovation is a key factor for any business survival.

Innovations enable SMEs to bring new and / or improved products and services in the market and thus to meet customers' needs better and fully, to gain loyal customers, to increase sales of products and services, to increase their income, to improve their market share, to increase their competitive advantage, to conquer new market segments and new markets, to improve their performance, and as a result positively to affect on the economic development of the country in which they operate.

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