

*Sanja Popović Pantić**

AN ANALYSIS OF FEMALE ENTREPRENEURSHIP AND INNOVATION IN SERBIA IN THE CONTEXT OF EU COMPETITIVENESS

ABSTRACT: *In economies that are led by innovation, innovativeness and competitiveness are interdependent. If an enterprise and/or economy is competitive in the market it will likely have a high level of innovation management, harmonized with EU standards. A variety of different methodologies is used to assess the innovation capacities of small and medium sized companies, but IMP³rove methodology is widespread in EU countries. It is a benchmarking process which gives, as the final output, a comprehensive report on how to improve and leverage innovation management for profitable growth, which includes a) identification of the gaps hampering growth and b) the direction in which and how the company should be developed and grown. For the purpose of this paper, IMP³rove methodology was adjusted and simplified to assess the innovation capacity of a single company without benchmarking. The focus of the paper is 22 Serbian companies owned and managed by women, which were included in innovation scanning according to*

the IMP³rove methodology in 2010. All companies included in the sample employ more than 10 employees. The resulting analysis aims to provide insight into the holistic innovation capacity of the selected companies through four dimensions of the so-called 'House of Innovation'¹. They are: innovation strategy, innovation organization and culture, innovation process (life cycle management), and enabling factors supporting the development of the company's innovation management. This analysis provides an overview of the innovation management platform necessary to enhance small and medium enterprises' (SME) business performance and competitiveness in the EU market. The analysis also presents the results of research on the gender aspects of the institutions and programmes that support innovativeness and competitiveness in SMEs.

KEY WORDS: INNOVATIVENESS, COMPETITIVENESS, SME, WOMEN ENTREPRENEURS, FEMALE ENTREPRENEURSHIP

JEL CLASSIFICATION: L26, O32, J16

* Institut "Mihajlo Pupin", Centar za istraživanje razvoja nauke i tehnologije,
E-mail: sanjap.pantic@pupin.rs

¹ A.T. Kearney, 2006

1. INTRODUCTION

The focus of the paper is the results of research conducted on a sample of 22 Serbian companies owned and managed by women, which were included in innovation scanning in the EU-funded Technical Support to Enterprise Policy and Innovation Project (EPI) in 2010. The key beneficiary of the project was the Serbian Ministry of Economy and Regional Development (MoERD) (now the Ministry of Economy). The aim of the innovation scanning was to identify the extent to which extant Serbian SMEs have the capacity to receive consulting services from international and local experts, aimed at improving their innovativeness and competitiveness, principally in the EU market (since they were already very well positioned in the national market and most of them were also export-oriented).

With terms of reference that focused specifically on innovation development, the project selection process ensured that only robust and relatively successful enterprises were included. This criterion was shared with MoERD who assisted project experts in identifying suitable sources. This led to the project using databases from MoERD and the National Agency for Regional Development (NARD) as well as from the National Employment Service (NES), the Ministry of Science and Technology, and some of the Regional Development Agencies and regional Chambers of Commerce. It was decided to positively discriminate on the gender issue and so the enterprise database from the Association of Business Women in Serbia² was also used. The total sample of SMEs involved in the exercise was 157, of which only 22 female-owned-and-managed companies passed the first selection process.

The author's aim in this paper is to present the innovation capacity of the selected companies, which were picked from the total sample according to the criterion of the owners' gender. The questionnaire used for the innovation scanning is part of the IMP³rove methodology, usually applied in the benchmarking approach. In this particular case a benchmark is not used, but the IMP³rove methodology is applied to describe the innovation capacity of the selected female companies according to the five components of the 'House of Innovation', which is an important part of the research instrument. Therefore the limitation of this research is the lack of benchmarking. The main contribution of the research is the qualitative aspect of the analysis and it only provides some insights into the innovation capacities

² The author of the paper is the President of the Association of Business Women in Serbia and was an expert on the EPI project.

of the selected companies. Although it does not provide a precise picture of the innovativeness of female SMEs in Serbia, this paper contributes to the recently commenced research on Serbian female entrepreneurship, which is still not conducted on a regular basis. It is important to highlight that, even in the EU, data on the innovativeness of female businesses is still extremely limited³. However, some comparisons between the findings in our sample and available findings on the innovativeness of female companies in the EU will be presented in the paper.

2. THE DEFINITION AND SCOPE OF FEMALE ENTREPRENEURSHIP IN SERBIA

Monitoring female entrepreneurship is new, even in the EU, which is why monitoring methodologies are still in the development stage and there is a lack of available data (Avolio B, 2011).

Most studies of female entrepreneurship focus on individual cases. The first studies dealt with analysis of the environment and organizational structure of female-run companies.

However, more recent studies are oriented towards the problems facing women entrepreneurs: the practice and perception of women who run businesses, their work/life balance, ability to achieve success, and business vision. Methodologically, most of the studies are based on reports and case studies which are mostly descriptive and use available samples, which are insufficiently representative due to the lack of a database of female entrepreneurs and usually do not connect the research and the theory.

The second methodological problem is the lack of instruments for validation, as well as the tendency to generalize the behaviour and characteristics of different groups within female entrepreneurship (female start-up businesses, women engaged in family businesses, differences in age, sector, and size) (Brush, 1992). In spite of these weaknesses, these studies provide a solid foundation for further research on female entrepreneurial activity.

Some of the definitions of a female entrepreneur used in academic circles are:

women who found a company (Bennett&Dann, 2000; Hisrich 1986; Inman, 2000); women who are the owners of a company, no matter what the origin

³ Promotion of Women Innovators and Entrepreneurship- Final Report, DG Enterprise and Industry, European Commission, July 2008.

of the ownership (whether it is inherited, purchased, or other) (Aidis, 2002; Izyumov&Razumnova, 2000); women who employ others (Hisrich&Fulop, 1994; Inman, 2000; Smith-Hunter, 2003). Some authors also take into account self-employed women who do not employ others (Aidis, 2002; Izyumov&Razumnova, 2000). Women entrepreneurs are women who both own and manage the company (Aidis, 2002; Inman, 2000; Lee-Gosselin&Grise, 1990); are women who have established a company with the aim of making a profit and growth (Bennett & Dann, 2000), including the owners of small companies who started their business in order to realize their ambitions and where their business generates their main source of income and consumes most of their time.

One of the precise definitions of a women entrepreneur is a woman who owns at least 1% of the company, holds at least one managerial position (marketing, finance, human resources management), and is employed in the company (Popovic-Pantic, 2013).

Based on all these definitions we can conclude that the most appropriate description that can be applied in future surveys is that a woman entrepreneur owns more than 50% of the company (no matter the origin of ownership), is actively involved in the business activity as a manager, and creates jobs for herself and for others. If we take this definition as the most accurate for research purposes, then it is possible to define eight criteria that the woman entrepreneur should meet (Avolio, B., 2011):

- 1) She needs to have more than 50% ownership of the company, no matter the origin of the ownership
- 2) The company has to employ at least two people in order to differentiate the entrepreneur from self-employed women: employment of others is an important feature of entrepreneurial activity.
- 3) She has to play an important role in the business at the time of the research.
- 4) She has to work full-time in the company, as opposed to only being periodically engaged in certain assignments.
- 5) She needs to make the most of her revenue from the company she manages, as opposed to women who work part-time and are not fully committed.
- 6) She should have been in the company for a minimum of 2 years in order to demonstrate commitment.
- 7) The company needs to have officially operated for at least 2 years in order to differentiate the short-term and long-term prospects of starting a company.
- 8) The company needs to exist officially at the time of the survey and sampling (to be registered, to settle tax liabilities, pay salaries etc.)

This definition recommended for research purposes takes into account several types of female entrepreneur: women who run their own shop/company, women owners who also manage their company, who take risks, invest, create business, and who are self-employed and also create jobs. This definition does not differentiate those entrepreneurs who establish a company from need from those who start a business by chance. It also does not take into account the origins of ownership. This definition has two weaknesses: presuming that the company has existed for at least two years, regardless of its business records, and the fact that the applied definitions are inconsistent. On the other hand, it focuses on those entrepreneurs who earn the majority of their income from the company's core business and who are involved in managing the company.

Starting with the *Global Entrepreneurship Methodology*(GEM), which defines an entrepreneur as a person who simultaneously has ownership of business capital and manages it, the definition of a woman's business would be similar to the academic definition: a company where a woman is both the majority owner and a director. Given the current practice in European countries, this definition in its wider version could also cover companies where, besides majority ownership, a woman holds a position in strategic decision-making and managing decision-making, in fields such as finance, market placement, product development, etc.. In any event, most experts agree that it is difficult to define women's entrepreneurship. Despite attempts to precisely define it in an academic or applied manner, new dilemmas open up, such as when a woman owns a minority share of capital but is also a director and actively manages the company.

Given that European practice is not unified in defining a female business, and often considers it to be a company managed by a woman even if she is a minority owner, this ownership structure should be included in the statistics of monitoring female businesses as opposed to other models: for example, minority owner without a managing position and/or minority owner holding a mid- or lower-level management position. However, one should bear in mind that this approach also has its weaknesses because it can overlap with self-employed women who employ others and with those registered as a SME but who have only one employee.

There is also the issue of the legal form of the joint-stock company with amore complex structure and more owners and management positions. In these companies it is possible for both men and women to take entrepreneurial roles at the same time; therefore it is not possible to unambiguously classify them as either female or male enterprises. However, since in the SME structure clean cases prevail we can conclude that a female company is one in which a woman

is simultaneously the majority owner and director, and also one where a woman is simultaneously a minority owner and director, i.e., a company manager (for instance, financial manager). Thus it is not necessary for the woman to be an employer, yet in this category we also include those who currently do not employ others, which is common in the early phases of business operations when often there is only one employee.

This definition excludes women who are informally employed, self-employed, run a business but are not (co)owners, and women who are only (co) owners and have no managing position in the company.

There is no systematic monitoring of female entrepreneurship in either the EU or in Serbia. Information can be indirectly accessed through statistics on employment and enterprises. Neither of these statistics is very satisfactory for monitoring women's entrepreneurship. The introduction of regular monitoring of small and medium-sized enterprises and entrepreneurs and the harmonization of business statistics with Eurostat statistics means that Serbia is now in a better position to monitor entrepreneurship, but, as most of the available data is not disaggregated by gender, it does not provide sufficient insight into gender differences or the specifics of women's entrepreneurship. As a result it is impossible to appropriately and efficiently design support programmes or monitor the effects of measures through changes in the status and trends of women's entrepreneurship.

The OECD has started to adjust the monitoring of entrepreneurship in 21 countries with the intention of expanding to more OECD and G20 countries. The methodology includes a system of monitoring the business demography, which provides standardized definitions and methodologies for collecting data, based on the unified statistics business registers (OECD, Eurostat, 2007). But it is not clearly established that the methodology and standards will enable regular monitoring of gender-sensitive entrepreneurship statistics. It is expected that the EU and OECD will largely determine the framework for monitoring Serbian entrepreneurship, because Serbia has already begun some adjustments in this area in the process of EU accession.

In Serbia there is no official definition of women's entrepreneurship or any regular monitoring of entrepreneurship by gender. The absence of systematic, gender-sensitive monitoring prevents the design of appropriate measures to promote women's entrepreneurship and its comparison with EU countries and the region.

2.1 Scope of female entrepreneurship in Serbia

In Serbia there is considerably less female than male entrepreneurship and female entrepreneurship is characterized by a focus on services and the trade sector, a choice of often simpler legal forms and ownership than in male enterprises, and a higher rate of company closures. It consists of predominantly small, micro-businesses, operates mainly in the services sector in the local market, and one out of two companies stagnates or faces difficulties in operation and survival.

Women's entrepreneurship accounts for only 26% of the total number of active (private) businesses and shops (SeCons, 2011). Gender differences in entrepreneurship are evident in the fact that women's businesses are significantly more concentrated in the trade and 'other services' sectors (36.4% women and 28.4% men in the trade sector, 44% women and 41.6% men in 'other services'); women have started to engage in entrepreneurship later than men, they more often choose simpler legal forms (shops rather than companies) and independently owned businesses. Moreover women's entrepreneurship is marked by a higher percentage of business closures: 47% of the shops and companies started and run by women have closed down, compared to 38% of companies opened and run by men. Women are especially exposed to the risk of failure in the early business phase (within the first 42 months of operation, according to Global Entrepreneurship Monitor methodology, which points to the fact that women's entrepreneurship is more 'fragile' and harder to maintain, and that it requires more consistent support in its early phases.

The Baseline Study research data (SeCons, 2011) point to the fact that women's strengths when engaging in entrepreneurship are a strong desire for work autonomy and independent business ventures, and a determination not to give up easily (refusing to quit after the first try). Their main weaknesses are the nature of their motivation (they often engage in entrepreneurship under the pressure of economic necessity and without sufficiently developed business ideas), and inadequate and insufficient start-up resources, especially lack of business capital. Previous work experience is significant when starting an independent business – 80% of women entrepreneurs from the research sample who had been employed before they founded their own company had worked in the same sector in which their current company operated. They transferred their work experience into their own business, with almost a third of them bringing along their managerial experience from their previous job. Social capital, that is, valuable business contacts that women entrepreneurs had already established in their previous employment, turned out to be one of the key resources for starting their own businesses.

The following key factors of business success came up: operating sector (personal services considerably reduce chances of business success), innovation of products/services, women entrepreneurs' participation in training sessions, and strong business contacts, primarily with client companies. These success factors should be kept in mind when shaping both financial and non-financial support programmes.

All research components (survey with both active and former women entrepreneurs, in-depth interviews and Focus Group Discussion – (FGD) pointed to the fact that women do not give up easily on their entrepreneurship attempts and initiatives. One in ten active women entrepreneurs has already had an unsuccessful attempt, while 48% of former women entrepreneurs are planning a new entrepreneurial effort. Examples from the in-depth interviews are also interesting because women entrepreneurs stressed that they had learned valuable lessons from their unsuccessful attempt; lessons that had taught them to be more successful the second time around.

3. THE CHARACTERISTICS OF INNOVATIVENESS IN WOMEN'S ENTREPRENEURSHIP IN SERBIA – EMPIRICAL RESEARCH

3.1 Innovativeness of the SME sector in Serbia

The most relevant resource for evaluation and comparative analysis of the innovation performance of EU Member States is the Innovation Union Scoreboard (IUS). It is a new European Commission instrument for evaluation and comparative analysis of the innovation performance of EU Member States and associated countries and identifying the strengths and weaknesses of their research and innovation systems. The IUS includes innovation indicators and trend analyses for the EU27 Member States and the associated countries, Iceland, Macedonia, Norway, Serbia, Switzerland, and Turkey. This instrument enables monitoring of the Innovation Union implementation as one of the seven most significant initiatives of Europe 2020 - a European strategy for a smart, sustainable, and inclusive economy.

The Innovation Union Scoreboard (IUS) is largely based on the methodology of the previous instrument, the European Innovation Scoreboard (EIS), with 3 main types of indicators and 8 innovation dimensions which are based on the 25 different indicators in total. A composite index containing the 25 IUS indicators, The Summary Innovation Index (SII), is calculated based on aggregate indicators

of national innovation performance. Unfortunately this report does not also record innovation performance in the SME sector by gender, which indicates that statistics on innovativeness by gender are still rare, even in the EU.

According to the IUS2011, Serbia is a moderate innovator with a below-average performance (Era watch, 2012): its Summary Innovation Index was 0.282 in 2011, a slight decrease in comparison to 0.284 in 2010. Its relative strengths are in Human resources (0.390), Open, excellent and attractive research systems (0.345), Finance and support (0.667), and Economic effects (0.376). Its relative weaknesses are in Firm investments (0.230), Linkages & entrepreneurship (0.207, where the average for the EU is 0.49 (Report on SME in Serbia, 2012), Intellectual assets 0.019, and Innovators 0.091, while the EU average is 0.51 (Report on SME, 2011).

3.2. Research on the innovativeness of female companies

A very important factor in a company's sustainability is planned development investment. According to the only survey conducted on the innovativeness of women's businesses in Serbia, 45% of the sampled women entrepreneurs said they planned the allocation of budgeted funds for the company's development. Since these were small and micro businesses and slightly less than 50% had not had profit growth in the previous 4 years there was no point in raising the question of research investment. On the other hand, the majority planned to invest in new products and services, for which R&D is necessary, which demonstrates that women entrepreneurs in Serbia are aware of the necessity of investing in innovation as a precondition for competitiveness in the market.

However, present opportunities, primarily limited financial and human resources, mean that only modest investment in the company's IT development is feasible, and even that at a basic level. The situation changes somewhat when the company exceeds 20 employees: its economic potential grows and therefore its capacity for innovation development. Using the IMP³rove methodology, the characteristics of innovation capacity in women's businesses employing more than 20 people and the prospects for their development will be presented in the following section.

IMP³rove is a widely accepted methodology for the evaluation of innovation potential in small and medium-sized enterprises, based on the principle of benchmarking and/or comparison with the ideal values in five dimensions, which are key elements (rooms), also known as the "House of Innovation", as described by the consultancy company A.T. Kearney. In this paper IMP³rove methodology is used as a platform but has been adapted for the purposes of group analysis

of innovation in 22 Serbian companies owned and managed by women, in five dimensions of innovation potential.

3.2.1 Research methodology

The purpose of the research is to assess the innovation results of a company, using the factors that affect innovation and IMP³rove methodology. For this purpose a comprehensive approach was used, the House of Innovation, which was developed in order to cover all the interconnected aspects of innovation management: innovation strategy, innovation organization and culture, innovation processes (managing a product/service life cycle), and factors that promote development of innovation management in a company. The focus of the House of Innovation is creating value and its performance indicators assess the contribution of innovation to a company's worth. The method of research is a questionnaire with the assistance of a consultant.

The sample includes 22 Serbian women: directors, owners, or managers in the surveyed companies. The structure of an IMP³rove questionnaire for the assessment of innovation potential follows the five dimensions of the House of Innovation: 1) innovation strategy (6 questions); 2) organization and innovation culture(7questions); 3)innovation life cycle (14 questions), encompassing subtopics from four areas: (managing a lifecycle (7 questions), idea management (3 questions), development of products or service and processes (1 question), and launch and continuous improvement (3 questions); 4) enabling factors (8 questions); and 5) innovation results (12 questions).

3.2.2 The Sample

In the group of 22 interviewed companies, 7 companies were involved in (mainly food) production; 2 companies in information technology, 2 in the production and sales of pharmaceutical products, and the rest in various other activities.

Six surveyed companies employed up to 3 persons. Eight enterprises had from 10 to 50 employees and fell into the category of small enterprises, and 8companies had between 50 and 120 employees and were classified as medium-sized enterprises.

Most Serbian companies in the sample were founded before 1999, followed by companies founded between 2000. and 2009. The majority of the female respondents were directors or director-owners and were in decision-making positions.

In terms of the surveyed companies' efforts implementing innovation, the majority (13 enterprises) aimed to implement significant changes into the business model or the existing technology. Five companies introduced radical innovations by making significant changes in the business model, products/services, and processes and 2 companies did not make risky changes but tried to implement innovations by introducing small changes to existing products and processes.

3.2.3 The first dimension of innovation: Innovation strategy

All the companies had a clear vision of their future business strategy and the majority of them clearly related it to innovation activity. Innovation strategy was largely documented and available to all employees, and well comprehended by the consumer/customer/supplier and innovation partner.

Only 1 company did not have an innovation strategy, while 21 companies claimed to have had one.

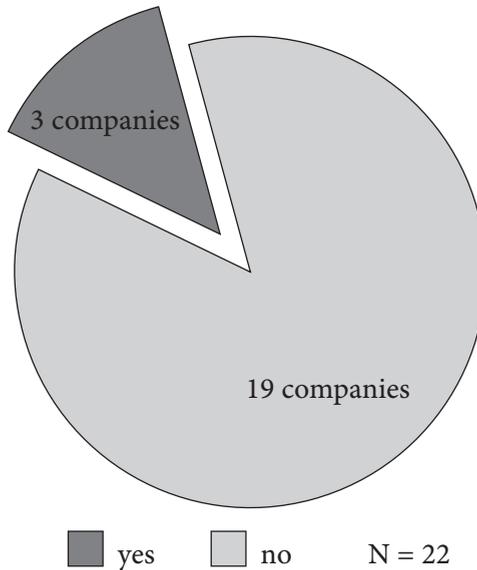
The strategy of most of the companies was to focus on improving existing products/services or processes rather than introducing new ones.

More than half the companies set clear activity targets by using innovation strategy in the field of innovation management, focusing on innovation capability development, and providing a base for organization changes and business model development.

The senior-level management in almost all the enterprises fully accepted and understood innovation strategy (the average rating was between 6.6 and 6.8, when the maximum rating is 7). The middle-level management also comprehended and implemented innovation strategy (average rating was between 6.2 and 6.4). As expected, this rating was slightly lower for the employees, at 4.7 to 5.0.

In the majority of the surveyed companies' innovation projects were evaluated systematically (19 enterprises), and there was a significant balance between the low and the high costs of long-term and short-term prospects, risk and profit, incremental and radical innovation (Graph 1).

Graph 1. Are the innovation projects evaluated?



When creating an innovation strategy, for the most part the enterprises considered the production processes' economic viability and social sustainability. The companies mostly inclined towards commercializing final products/services (average rating 6.7), and none of the surveyed choose patent and trademark sale as a form of commercialization of innovation ideas (average rating 1.6).

The sale of integrated ideas/concepts or assignment of the rights for their use was seldom practiced in most of the businesses (average rating from 2.3 to 2.6 out of a possible 7).

3.2.4 Organization and innovation culture

This dimension assesses the readiness of companies for innovation, from employees to senior management, rating from 7 for the highest level of readiness, to 1 for the lowest level of readiness.

Most senior-management-level employees fully supported innovation – they were interested in innovation, were open towards it, capable of creative thinking, willing to share their ideas with others, and focused on the innovation effects (average rating from 6.3 to 6.5).

Middle level management also largely supported innovation (average rating from 5.1 to 5.7), while the employees showed average willingness towards innovation with an average rating between 3.5 and 4.7.

None of the 3 employee groups were opposed to the introduction of new methods.

This component also observes the innovation capacity of enterprises from the perspective of external partners. The companies surveyed largely cooperated with external partners on innovation projects. Partnerships were established formally (e.g., through an agreement or joint product/services development contract).

The majority of respondents considered that suppliers, competition, and consumers/customers had a high or very high perception of the companies' innovation capacity (average rating from 5.5 to 6.0).

The usefulness of partnership could be assessed in almost all the businesses (in 2 companies it could not). Partnerships greatly assist and enhance the life innovation cycle stages- from idea management and product/service/model development to launching and promotion.

In most companies the number of employees working on innovations with external partners ranged between 1 and 5. The number is similar when it comes to partners whom the company had worked with in the previous 3 years and the number of other partners whom the company obtained information from. The companies regularly exchanged information with between 1-10 innovation partners.

The companies created informal communication with partners that affected their innovation, and its usefulness can be evaluated through IMP³rove methodology. The average impact rate of informal connections with external sources is high at between 5.3 and 5.6 (the maximum rating is 7).

English was the second most spoken language after the mother tongue, followed by German and Russian, then Italian and Macedonian. Serbian/Croatian and English were the languages most commonly spoken in the markets to which the companies exported and by innovation partners.

3.2.5 Innovation life cycle

This section discusses innovation management activities realized throughout the innovation life cycle. It also assesses how well the innovation life cycle processes are integrated, from idea management to launching and continuous improvement and finally to products/services cancellation.

The first question in this section is structured in a way for the respondent to choose between two groups of products/services according to their contribution to the profit. First group is marked as that which made the largest contribution to the profit in the last 3 years, while the second is ranked as secondary in contributing to the profit.

The average life cycle of the first group of products/services ranged from 1 month to 1 year in nine companies, from 2 to 3 years in seven companies, and from 5 to 10 years in nine companies.

In the majority of cases (18 enterprises) the time that elapsed from the beginning of the development of an idea to new products/services entering the market ranged between 1 month and 1 year. The same period of time was required for a product to start making a profit – in the majority of companies (16 companies) from 1 month to 1 year, and in 4 companies from 1 to 2 years.

Six of the enterprises did not have any of the second group of products/services with the highest contribution to profit growth. Of those that did have them, the product/service life cycle in seven companies ranged from 1 to 12 months, in four companies from 2 to 5 years, and in three companies from 5 to 10 years.

In the companies that had a different group of products with the highest contribution to profit growth (14 companies), it took 1-12 months for the products/services to enter the market. The period these products/services required to make a profit was in most cases 1-12 months (13 enterprises).

This section also gives insight into the intensity of innovation that companies practice: as is to be expected, the companies were opting more for incremental, smaller scale, and less costly innovation.

In the previous 4 years most enterprises had started and successfully completed between 1 and 10 incremental product innovations (total of 14 enterprises).

Ten companies had not introduced even incremental service innovations, and of those that had, most had initiated and successfully implemented between 1 and 5 innovations (7 companies had launched innovations and 8 had implemented them).

When it comes to the innovation processes, more than half of the companies had initiated and successfully realized 1-5 incremental innovations (11 started innovations and 13 implemented).

Fifteen companies had successfully initiated and realized between 1 and 5 organizational incremental innovations.

Half of the companies had not introduced business model innovations and the other half had successfully realized between 1 and 5 innovations (twelve started innovations, eleven implemented them).

As regards radical innovations initiated in the previous four years, about half of the companies (twelve to fourteen companies) had not initiated service, organization, or business model innovations.

Fifteen companies had not initiated radical innovations in their business model, and nine companies had not initiated radical innovation of products and processes

According to this research, the majority of women made organizational and product innovations (fifteen and fourteen companies, respectively) which partly corresponds to the findings of the study on women innovators in the EU, where the majority of respondents claimed to have innovated products (13.9%) (Evaluation on policy: promotion of women innovators and entrepreneurship, 2008). Although our sample was insufficiently representative to be compared with the findings of the comprehensive EU study, it is worth mentioning that the innovation percentages for women in the EU were product innovation at 13.9%, marketing innovation (9.1%), organizational innovation (5.2%), and finally process innovation (4.1%). The innovativeness of men in these categories was slightly higher (Evaluation on policy: promotion of women innovators and entrepreneurship, 2008).

In companies which had initiated product, service, process, organizational, and business model innovations, between 1 and 5 radical innovations had been initiated, and in most of the companies the number of successfully realized radical innovations also ranged between 1 and 5.

Most of the companies (19) evaluated new ideas in the phase of idea generating and 16 companies did so after internal tests.

The companies included their internal and external sources in order to come up with new ideas and suggestions for improvement. Purchasing, marketing, sales, and product/service development were listed in the questionnaire as options for internal innovation sources. Direct buyers/consumers, indirect buyers/consumers, suppliers, research institutes, universities, and intellectual property rights experts were considered as external sources.

Marketing and sales employees in companies were regularly involved in new idea development and improvement (average rating 6.2). Supply and production/development services employees were included from time to time as internal sources (average rating 4.5 - 5.1).

In the new development of ideas and suggestions for improvements, external sources included firstly direct buyers/consumers (average rating 5.8), and lastly experts in intellectual property rights (average rating 2.4). Indirect customers, suppliers, and research institutes/universities were occasionally included (average rating 4.5-4.8). It appears that women entrepreneurs in the EU are not protecting their intellectual property rights, since only 8.3% of patents awarded by the European Patent Office are awarded to women.

In most cases the companies (16 companies) had a formal system for generating and recording radical ideas. In most companies the annual number of radical ideas ranged between 1 and 5 (10 companies), 2 companies had 6-10, and 2 companies did not have any radical ideas per year. One company had 11-20, and 1 company had up to 30 radical ideas per year.

Sixteen companies had a formal system for generating and recording incremental ideas.

Five out of sixteen companies had from 1 to 5 incremental ideas per year; six companies had from 6 to 10, three companies from 11 to 20, and one company up to 50 incremental ideas per year.

Six companies did not have a structured and formal assessment system for both radical and incremental ideas and 6 companies did; in which case the process of recording, evaluating and selecting ideas usually lasted from 2 to 4 weeks.

In most businesses the number of analysed and selected radical and incremental innovation ideas that were turned into projects ranged between 1 and 5.

Fourteen companies had not sold any radical ideas or granted permission for use.

Most companies (13 companies) had not sold any incremental ideas or given permission for use.

After the initiation of an innovation project the companies evaluated a formal plan/procedure (with clearly defined stages, key points, etc.) for developing innovation, whether of products/services, processes, organization, or business models. The rating scale used was from 1 (the procedure does not exist) to 7 (successfully applied procedure).

A formal plan/procedure for product/process innovation development was applied in companies, but not entirely successfully (average rating 4.9-5.3).

Not a single company had successfully applied business model, organizational, or service innovations.

Eight companies had successfully realized between 1 and 5 innovations in the last 3 years. Five companies had realized between 6 and 10 innovations, two companies from 11 to 20, three companies from 21 to 30, and one company from 31 to 40 innovations. Two companies had realized up to 100 innovations and one over 100 innovations.

In twelve companies, 91%-100% of projects launched in the previous 3 years had clearly defined goals and 8 of these companies had realised projects with clearly defined goals.

In four companies 61%-70% of launched projects had clearly defined goals and in 3 companies 41%-50% had clearly defined goals.

Four companies had completed between 81% and 90% of the projects with clearly defined goals, three companies between 61% and 70%, and three companies between 41% and 50%.

It is very important to analyse customer information and information from customers/consumers in order to develop new products and improve existing products. A segment of the questionnaire is devoted to this.

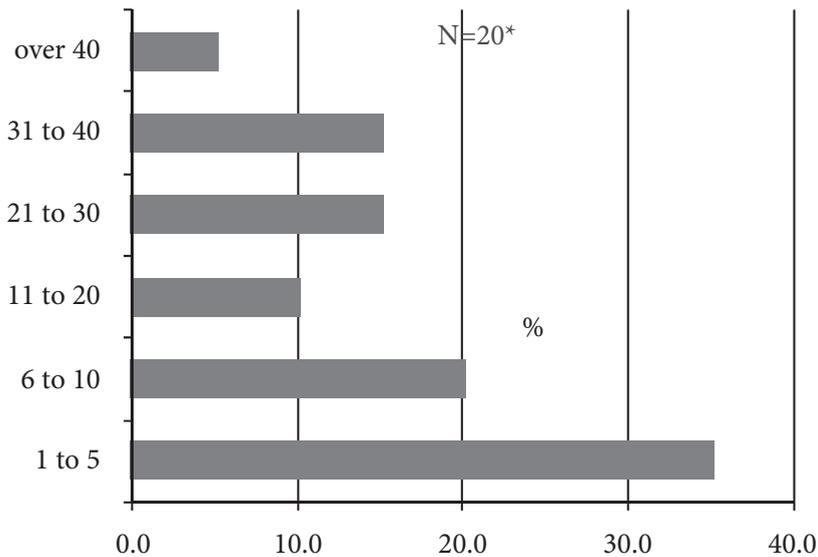
Twelve companies analysed customer/consumer data 5-12 times a year. Five companies did so 1-4 times a year, and four companies 13-24 times a year.

Eight companies analysed buyer/consumer feedback 1-12 times per year, eight companies performed analysis 5-12 times a year, and six companies 1-4 times a year.

One company analysed the data more than 100 times a year, one company analysed customer/consumer data every third day on average, and one company analysed customer/consumer feedback every day.

Half of the companies had initiated 1-10 innovation projects in the previous three years, seven companies 1-5, and four companies 6-10. Three companies had initiated as many as 21-30, and four companies 31-40 (Graph 2).

Graph 2. How many innovation projects have you initiated in the last three years?



91%-100% of most companies' (10 companies) innovations had clearly defined objectives in terms of deadlines, budget, and quality. In four companies 21%-40% of the innovations had clearly defined objectives, and in two companies up to 10%.

In the majority of cases (12) female entrepreneurs believed that quality-related goals had been achieved. In 91%-100% budget and deadline objectives had been achieved, while half this number of companies believed that quality objectives had been met.

3.2.6 Enabling factors

All the companies encouraged employees' innovativeness. In most enterprises stimulation of and reward for innovation took the form of recognition from superiors, followed by the possibility for the employee to use the available capacity of the company to develop ideas, and cash incentives.

The least popular incentives for innovativeness were tickets for cultural events, paid holidays, and bonuses.

Patents can also be an enabling factor but were rarely used. Only five female respondents believed that patents are the right way to protect intellectual property rights and competitive advantage.

Of 5 female respondents who thought patents a stimulating factor, the majority had personal experience of patent protection: in the previous 3 years. Three respondents had 1 registered and granted patent each, 1 respondent had 5 patents, and 1 respondent no patents (in 2010, 2009, and 2008).

All the registered patents had been granted, successfully implemented, and turned into commercial successes.

Seven companies found the experience gained by working on innovation projects in the period 2007-2010 useful by a high percentage (91%-100%), the benefits for four companies ranged from 81%-90%, for five companies 71%-80%, for four companies between 51%-70%, while for the remaining five the benefit was 50%. The necessary knowledge is acquired by experience, which is also an important stimulating factor.

All companies relied on design to lever innovation development, and most of them seemed to do it to a great extent (average rating 6.1). During the 3-year period (2001-2007) design contributed to the continuous product improvement and was an integral part of the innovation strategy (average rating 6.0). Design played an important role during the development phase as well as in the generation of ideas; it was a driver of innovation culture and essential for the innovation launch in

most companies (average rating from 5.4 to 5.6). In the selection of new staff and human resources development, design was neither important nor unimportant (average rating 4.3).

Design had a positive impact on customer satisfaction and improved the brand/company image (average rating from 6.0 to 6.3). It significantly increased the sales of products/services (average rating 5,6), improving the evaluation of technological innovation in the market (average rating 5,2) and shortening the time period necessary to make a profit (average rating 4,9).

Design was less effective in reducing costs resulting from the innovation process, in shortening the time-to-market period, and in improving coordination between units in the companies (average rating 4.0-4.2).

Nearly all the companies (21 companies) applied measures to design management. One of the most common measures was engaging external design experts (outsourcing) for key decision-making and developing a design management strategy.

A measure that was much less applied was coordination of design management activities in different parts of the company and a rigorous assessment of design effects throughout the innovation life cycle (average rating from 4.5 to 4.7).

3.2.7 Innovation results

Revenue growth

Account sales, donations, and other sources are considered in terms of revenue. During 2010 seven companies had sales revenues in the range of €100,000-€500,000. Four companies had revenues of €500,000-€1,000,000. Nine companies had revenue of €1,000,000-€7,000,000, while two companies had revenue between €10,000-€100,000.

During 2009. and 2008. also, most companies' income ranged between €100,000-€500,000, but somewhat more companies than in 2010 had an income of €1,000,000-€5,000,000 (9 companies vs. 4). During the same period of 2009. and 2008. only one company generated revenue in the range of €500,000 to €1,000,000, and one company had revenue of €10,000-€100,000. In most of the businesses during the observed period, the share in revenue of public grants for research was 0%.

A large number of the companies (7-9) in the period 2010-2007 had no revenue from radical innovation in products/services.

The situation was a little better for incremental innovation: in 2008 and 2009 all companies earned their income from incremental innovations, mostly (8-9 companies) between €10,000 and €100,000. All companies allotted an innovation budget for year 2010, determined by company size and sector.

In 2010. nine companies had an innovation budget of €10,000-€100,000, seven companies a budget of €1,000-€10,000, four companies a budget of €100,000-€500,000, and one company a budget of €1,000,000 - €2,000,000.

In 2009. and 2008 the companies mostly had innovation budgets of €10,000-€100,000 or of €1,000-€10,000.

Profit from innovation

During 2010, the share of profit from innovation in the overall profit of nine companies was 1%-30%; for seven companies it was 31%-60%; for two companies 61%-90%; and for three companies 91%-100%.

In 2009. the share of profit from innovation ranged from 1%-30% in five companies, in six companies it was 31%-60%, in two companies 61%-90%, and in three companies 91%-100%, while one company had no profit from innovation.

In 2007. and 2008. most of the companies' (nine in 2008. and five in 2007) share of profit from innovation in overall profit was 1%-30%, and three companies share of profit from innovation was 91%-100%. One company had 31%-60% profit from innovation and one company had no share of profit from innovation.

Distribution of profit from innovation

Companies benefited most from product innovation, followed by process and service innovation.

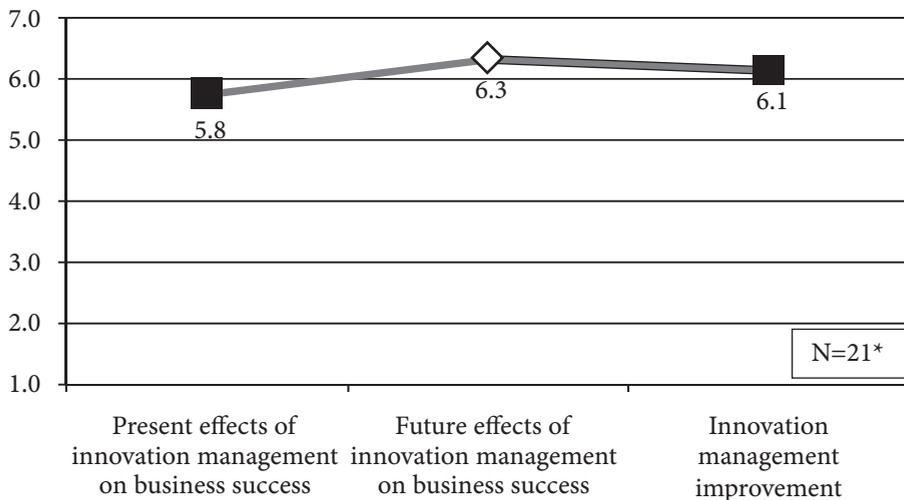
Reduction of operational costs in 2007-2011. as a result of innovation processes or re-organization amounted to 50% in all companies.

Profit growth and employee number increase

Half of the companies had between 11 and 50 employees in 2007-2011. The number of employees tended to increase from 2007-2010, and this increase was accompanied by profit growth in most of the companies.

Effects and improvement of innovation management

Graph 3. What are the present and future effects of innovation management on your business success?
To what extent you can improve your results in innovation management?



*Note: One respondent – no answer

Current and future effects of innovation management on business success were rated relatively high (average rating 5.8 – 6.3)

The female respondents thought that it possible to considerably upgrade results in the field of innovation management(average rating 6.1) (Graph 3).

Priorities in terms of development

The priorities for most of the companies were marketing and sales, human resources and skills, and analysis and development of new products/services.

The least relevant areas for the companies in the future were quality assurance and obtaining certificates, improvement of existing products/services, and upgrading new business models.

4. USING INNOVATIVENESS SUPPORT AND SME COMPETITIVENESS PROGRAMMES - THE GENDER ASPECT

4.1 Analysis of the business, institutional, and social frameworks of women's entrepreneurship

The socio-economic conditions for women's entrepreneurship are unfavourable, and women entrepreneurs perceive this. However, it seems that nearly two decades of unstable socio-economic conditions and considerable problems with unemployment make women entrepreneurs in Serbia less afraid of taking risks than women in more ordered European countries. The institutional framework for entrepreneurship in Serbia has developed considerably in recent years. However, efforts to introduce more and better order in business have led to an increase in complicated regulations that are difficult to follow, especially in the case of small entrepreneurs. The complexity of the entrepreneurship development regulations and policies is accompanied by insufficient gender mainstreaming (FREN, 2012).

Over the past two decades the socio-economic context of women's entrepreneurship has been marked by a series of difficulties. The economic crisis disrupted the positive trends of the first decade of the twenty-first century. Further aggravating circumstances for women's entrepreneurship are marked gender inequality, which acts as a barrier to entrepreneurship and as well as to running and developing a business. Therefore it is not surprising that the women entrepreneurs in the survey sample see the business climate as unfavourable. This manifests itself in insufficient support for entrepreneurship in educational institutions, the creation in Serbia of an unfavourable image of entrepreneurs, considerable obstacles to starting a business, etc.

Recent work developing an institutional framework for entrepreneurship in Serbia has been a positive factor. This has included establishing or improving the institutions in charge of regulating the business environment, entrepreneurship, and business operations, as well as the institutions that provide support for or introduce measures and policies related to entrepreneurship in other areas, such as incentivizing the development and improvement of living conditions of certain social groups. Development is also achieved through increasing the

number of laws and regulations governing areas such as registration, business operations, conditions for carrying out various transactions, cooperation and contractual relations, settling of liabilities towards the state and employees, respect for the rights of employees and settling social contributions, as well as numerous conditions related to standards and the situation in the community. The development of this framework is also achieved through various strategic and action plans, which operationalize policies aimed at the development of entrepreneurship as a key driver of economic development.

These positive trends are, however, marked by various problems. One is the excessive complexity of regulations, especially when they are dynamic and change continually. This puts excessive demands on entrepreneurs, who have to familiarize themselves with a large number of areas relevant to their business operations. Even when they can outsource services - for example, to regulate financial aspects of the business - they still need to be sufficiently informed in order to be able to monitor and assess the effects of these services, or to make decisions related to them. Information about regulations is unsystematic and insufficiently available, so women entrepreneurs often rely on informal networks as a way of informing themselves: that is, they rely on others who are in a similar position or who have already gone through similar situations.

Another important problem is the insufficient gender mainstreaming of regulations and policies that are directly aimed at the regulation and development of entrepreneurship. This means that the specific problems and needs of women in business are not recognised and specific types of support are not enabled. The institutional framework cannot identify services that are particularly relevant to women's entrepreneurship programmes, or which could be directed specifically at women entrepreneurs. Although Serbia has made considerable progress in developing a functional framework for supporting entrepreneurship, the actual delivery of support is neither consistent nor sufficiently integrated and is inadequately funded from the budget (FREN, 2012).

4.2 Obstacles to women's innovative entrepreneurship

In most of the 14 Member States⁴ for which data are available there are three types of obstacle, which can be classified under three main headings: contextual obstacles, economic obstacles, and soft obstacles.

⁴ Austria, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Poland, Spain, Sweden, and the UK

Examples of contextual obstacles are stereotypes about the role of women in society, and difficulties balancing family responsibilities with working in fast-moving and competitive sectors that expect long and flexible working hours and constant training to be up-to-date with new technological developments and market opportunities. Science and technology and innovation and invention are concepts mostly associated with men and male areas, making these fields less attractive to women and resulting in women-related invention and innovation being less recognized as valuable business ideas.

In this context market stakeholders perceive women as less credible or less professional. This means that women entrepreneurs can be viewed with scepticism by potential clients, suppliers, and business partners, and have to be persistent in order to prove their knowledge, skills, and capacities.

The economic obstacles are usually related to difficulties accessing finance. This is even more challenging for women in science and technology since these sectors require substantial investment and women attempting to operate in these sectors are seen as less credible by financial stakeholders and investors.

Women also face soft obstacles, such as lack of access to the relevant technical, scientific, and general business networks. Access to these networks is essential to develop business ideas, meet potential clients, suppliers, and business partners, understand the market and its developments, opportunities, and weaknesses, and get strategic information, cooperation, and support. In general, more women than men report the lack of these personal and entrepreneurial skills as being an issue in starting a business. This is potentially a greater obstacle in the science and technology sectors where both male dominance and levels of risk and uncertainty are higher.

4.3 Participation of women in governmental programmes to support SME innovativeness and competitiveness

In 2009-2010, only 12% of the beneficiaries of the Ministry of Economy's innovation subsidies were female managed/owned companies (FREN, 2012.). Since female enterprises represent around 20% of all single-women managed/owned enterprises in the Serbian economy (when we exclude sole proprietors⁵ and mixed enterprises⁶), the 12% female share in this programme is low even in

⁵ Entrepreneurs were excluded because none of the recipients of the innovation subsidy were registered as entrepreneurs.

⁶ For definitions see SeConS baseline study.

relative terms. This means that female enterprises, relative to their presence in the economy, are less likely to benefit from innovation subsidy than male enterprises.

One reason for such low participation of female enterprises could be that they are less informed about this programme than male enterprises, due to their often-weaker social capital and informal connections within the business world. Furthermore, not all innovative enterprises use governmental support programmes. In fact, a significant portion of enterprises from the ICT sector, including female enterprises, have never participated in these programmes, although they have received business prizes such as the award for the best technological innovation.

It may be that male and female enterprises chose different coping strategies as the economic crisis progressed. While male enterprises might have responded by trying to innovate through investment, female enterprises might have chosen less risky strategies. Furthermore, if we consider that female enterprises are often smaller and have a lower turnover, the more difficult economic conditions in 2010 (the second year of the economic crisis) may have discouraged female enterprises from applying due to increased liquidity problems. Women need more encouragement than men to take part in programmes, especially when these programmes require investment of one's own resources. Based on the available data, we can only conclude that the gender sensitivity of this programme declined between 2009. and 2010.

However, the 19% share of women in the total number of beneficiaries of the competitiveness subsidy is considerably higher than for the other two programmes for established enterprises⁷ (FREN, 2012). Women represent one third of sole proprietors and only 20% of SMEs in Serbia, and around 15% of all beneficiaries of the competitiveness programme are sole proprietors, while none of the other advanced programmes' beneficiaries are. This may be the main reason why participation of female entrepreneurs in this programme is higher than in the other two programmes. Observed in greater detail, we can see that the 31% female share of sole proprietors participating in this programme is around the level of the female share of sole proprietors in the Serbian economy. On the other hand, the 16% share of female managed/owned SMEs is lower than the 19% share of female managed/owned SMEs in Serbia. Therefore the share of female managed/owned companies in this programme is below their average in the

⁷ Innovation subsidy (provided by the Ministry of Economy) and subsidies for enterprise competitiveness and internationalization (provided by SIEPA)

economy, while the share of the female sole entrepreneurs corresponds to their presence in the overall economy. This programme also has more beneficiaries that are established companies than the other two programmes combined, which implies that, in absolute terms, it supports a significantly larger number of female businesses than the other two (FREN, 2012).

After receiving the competitiveness subsidy, 9 enterprises closed, of which 7 were recipients in 2009 and 2 in 2010. Five of those were managed/owned by men, and 2 by woman (the last two were mixed enterprises). Due to the higher overall share of male companies, the total survival rate for enterprises managed by both genders is the same and stands at 98% for both years.

The female businesses were not awarded lower subsidies than the male businesses. Furthermore, since medium-sized companies did not receive higher grants from this programme than smaller companies, the fact that there were more female beneficiaries among smaller companies does not imply that women on average received fewer resources than men (FREN, 2012).

5. CONCLUSION

There is still no unique methodology for recording female entrepreneurship in the EU and even less for recording innovativeness. The process of defining a female entrepreneur is still ongoing. Consequently, statistics on the innovativeness of female enterprises are still underdeveloped, even in the EU. The Innovation Union Scoreboard, as one of the most relevant European references on innovativeness performance by country, does not record statistics on innovativeness by gender. Therefore, the analysis of the innovativeness of female entrepreneurship is limited since the regular statistical reports on SMEs in the EU do not publish this data on a regular basis. In Serbia, also, gender statistics on entrepreneurship are not available on a regular basis.

Research on the innovativeness of female businesses should become integral to the large-scale research on the business performance of SMEs that is published annually by the Ministry of Economy in the annual report on SME development. Despite the limitations of the presented research on the innovativeness of female businesses, qualitative insights into this aspect of women-owned companies indicate that women prefer incremental rather than radical innovation of products/services. The study on women innovators and entrepreneurship

published by the European Community shows a similar situation in the 14 EU member states.

That new product development is a priority for women entrepreneurs shows a high level of awareness of the importance of innovation to company development. That marketing and sales are priorities is in line with the findings that the preferred forms of innovation commercialization in Serbian companies are the sales of final products as opposed to selling concepts and patents, which are almost never practised.

Companies tend to have specific people who work on innovation development, and external innovation partners with whom they communicate both formally and informally in order to receive ideas and information relevant to innovation development, and these are most often their direct customers/consumers. The internal sources of innovation that they use most are procurement/sales and marketing departments. In most companies the average innovation life cycle lasts from 1 month to 3 years. In most cases (18 companies) it takes 1 month to 1 year from the beginning of product/service development to entering the market. The same period is required for the product to begin to make a profit in the majority (16) of companies.

Serbian companies do not have much time to develop since their innovation budgets are limited and they have to get the product into the market as soon as possible to get a return on investment. Therefore they prefer incremental to radical innovation, which is less demanding in terms of money and development time. The share of profit from innovation was in the range of 1%-60% for more than 50% of the companies, suggesting that the innovations were successful in the market and/or that the companies prepared their entrance to the market well, despite the relatively short development period.

Female managed/owned companies represent a very small share of the beneficiaries of the so-called 'advanced' programmes to support the innovativeness and competitiveness of SMEs. The capacity of female companies to perform innovation activities is limited by their financial and human resource potential, as female companies are predominantly micro companies. The companies involved in the sample of the presented research are small and medium-sized, and therefore they were able to report on their business innovativeness. In the process of sampling it was hard to recruit more companies of the same or similar capacity due to the lack of female companies with innovation potential in Serbia's SME sector. This fact is also an indicator to be considered when designing policy measures to improve

their innovation management competency. Improvements are obviously needed in order to achieve competitiveness, even in the local market and certainly in the competitive EU market.

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