

EXAMINATION OF SMES PERFORMANCE AND ITS RELATIONSHIP TO INNOVATIONS IN BULGARIA AND BALKAN-MEDITERRANEAN REGION

Veselina Jecheva, Angel Toshkov, Evgeniya Nikolova
Burgas Free University

***Abstract:** SMEs play a very important role in each country's economy. Therefore, it is vital to participate in innovation activities and to examine the internal and external obstacles they encounter during the innovation process. This paper presents examination of some of the results from a survey, conducted with 150 companies in Bulgaria and related to their innovation culture, attitudes and perceptions, as well as their activities, including investments. The obtained results could be used for SME investors' framework development using classification and clustering methodologies.*

***Keywords:** SME, marketing innovations, factors.*

Introduction

Innovation is considered as a key factor to achieve better business performance levels in small and medium-sized enterprises (SMEs), since they appeared to be prevailing part (about 95%) of the companies at all. On the other side, market globalization, rapid technological changes and shorter product and technology lifecycles make innovation development a key factor for sustainable competitive advantage [3]. At the same time, research on the company-level (micro level) have been slightly neglected due to the relatively high costs associated with data collection and the huge variety in SMEs specifics. Nevertheless, SMEs sector could not be put aside due to its share in overall economic performance, role in job creation, retaining economic-social plurality, balancing territorial inequality, the increasing life quality owing to the diversified value proposition and self-realization of the individual are all significant [9].

According to [8], there are four types of innovations: product, process, incremental and radical innovation. More recent studies describe product (market diffusion) and process (implementation) innovations [6], as well as marketing innovations [10]. The relationship between different innovations is a subject of study in [1], where some interconnections were stated: innovation culture has positive effect on both product and marketing innovations; marketing innovations, on their turn, have positive effect on product innovation and market performance of SMEs, etc., as shown at Figure 1:

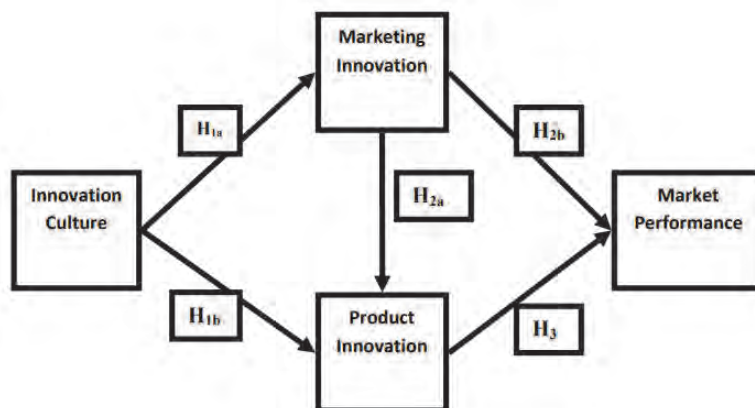


Figure 1. SMEs Innovations Interconnections

The innovation activities could be affected by various internal and external factors: the legal framework, state and local institutions (institutional factor), technological capability, consumer preferences, management skills, education and R&D systems, SME's customer and partner relationships, market segment, company size, financial factor, competitive advantage, country's overall economic level, etc. [2]. There are many investigations on the innovation activities factors ([7], [4], [11], etc.), which consider external and internal factors as significant elements in their management process. They describe recognizing external support as an essential condition for the competitive advantage of an SME. In addition, some authors focus especially on ICT as a key factor for innovations in enterprises [5].

The purpose of the paper is to present an empirical research that closely examines the current state of the SMEs innovation activities in Bulgaria, compared to those in SMEs in Balkan-Mediterranean region. This research is conducted under project „Indexing the Regional Innovative Levels in the Sectors of the Economy (IRISI)- scenario for the identified in the ISIS four priority thematic areas for smart specialization and their positioning towards the circular economy” under National Scientific Fund of the Ministry of the Education in Bulgaria. The project purpose is to develop a model for indexing the innovation activity of the companies at national (macro level) and regional level (micro level in two regions), depending on their sectoral affiliation (under NACE) and establishing inconsistencies analysis) to the already identified priority thematic areas at the end of the implementation period of the Integrated Intelligent Specialization Strategy (ISIS). The main research thesis is that a new model of indexing of the innovation activity of business units and their regional concentration should be set, which should not only correspond to the available capacities and assets but also to the specific advantages of a circular economy.

Objectives and methods of the research

In 2019, an extensive survey was conducted among employees and management representatives of 150 companies from the Southwestern and Southeastern region of Bulgaria based on closed-ended questionnaire, available online to the users, in order to assess the innovative activity of companies. A similar survey with the same prevailing number of questions was conducted in the period March – May 2018 in five European countries – Bulgaria, Greece, Cyprus, North Macedonia and Albania under project „Innovations Platform and Tools for increasing the innovation capacity of SMEs in the

Съвременни управленски практики XI - БСУ, 2021
ИНТЕЛИГЕНТНА СПЕЦИАЛИЗАЦИЯ В ДЕСЕТИЛЕТИЕТО
НА СВЪРЗАНОСТТА И АВТОМАТИЗАЦИЯТА

Balkan-Mediterranean Area (InnoPlatform)” under Balkan-Mediterranean programme. It included 460 SMEs, almost equally distributed in the five countries. Both surveys were conducted with the following purposes:

1. To evaluate the significance of the surveyed factors for introducing marketing innovations (changes in the design and packaging of a product or service, new methods and techniques for product promotion, new methods for market positioning of products or entering new sales channels, new methods for pricing goods or services);

2. To establish the status of the factors when introducing innovations in products and services for the surveyed enterprises and to assess their impact;

3. To evaluate the degree of similarity between the answers of SMEs in Southern Bulgaria, compared to those of the SMEs in Balkan-Mediterranean area.

The research approach is based on the use of statistical methods and specialized software for processing and analysis of empirical information from the survey provided to the authors.

The respondents’ answers for making their choice about the influence of a relevant factor are rated with the five-point Likert scale (1 is „Definitely no“ and the highest – „Definitely yes“). Usually, this type of scale is treated as interval, but there are researchers who consider it as ordinal. In the present study of the association between subjective assessments, these data are considered ordinal. Factors of marketing innovations in the company activity covered in the survey are twenty-one elements divided into seven groups as shown in Table 1.

Focus on the customer	<ul style="list-style-type: none"> • q9.1.1. We understand customer needs; • q9.1.2. We have clear goals for customer satisfaction; • q9.1.3. We measure customer satisfaction;
Competitive orientation	<ul style="list-style-type: none"> • q9.2.4. Our sales staff quickly submits information about competitive actions; • q9.2.5. We respond quickly to the actions of competitors; • q9.2.6. Management discusses competitive strategies;
Commitment to learning	<ul style="list-style-type: none"> • q9.3.7. The ability of employees to learn is a key competitive advantage; • q9.3.8. Employee training is seen as an investment, not an expense; • q9.3.9. Employee training is a top priority;
Shared vision	<ul style="list-style-type: none"> • q9.4.10. The management of the company is divided between levels, functions and departments; • q9.4.11. Employees are perceived as partners; • q9.4.12. Sharing the direction of the company’s development is considered important for management;
Openness to ideas	<ul style="list-style-type: none"> • q9.5.13. Managers encourage employees to think outside the box; • q9.5.14. Additional work on innovation is encouraged; • q9.5.15. Original ideas are highly valued
Entrepreneurial orientation	<ul style="list-style-type: none"> • q9.6.16. Risks are taken; • q9.6.17. Strategic planning activities are carried out; • q9.6.18. New opportunities are identified;
Strategic focus on innovation	<ul style="list-style-type: none"> • q9.7.19. The challenge of the existing way of doing business is central to the strategy; • q9.7.20. Providing new products / services to customers is essential to the strategy; • q9.7.21. Industry change is key to the strategy.

Table 1. Factors of marketing innovations in the activity



The two sets of the obtained results were compared using well-known chi-squared test of homogeneity. It is used for testing variables to see whether different columns of data in a table come from the same population or not. The value of the test-statistic is calculated by the following formula:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

where χ^2 is chi-squared, O_i – observed values, E_i – expected values. The chi square statistic is calculated, and if this value is in the region of rejection of the null hypothesis, then the assumption that each sub-group shares the same distribution of another categorical variable is rejected. Some of the obtained values are presented in Table 2:

	q9.1.3	q9.2.4	q9.2.5	q9.2.6	q9.3.7	q9.3.8	q9.3.9	q9.4.10	q9.4.11
χ^2	6,0337	20,628	31,695	8,7413	20,207	20,316	18,858	31,544	15,232
df	12	16	20	20	16	20	20	16	16
p-value	0,9144	0,1933	0,0467	0,9857	0,2111	0,4383	0,5311	0,0115	0,5077
	q9.5.14	q9.5.15	q9.6.16	q9.6.17	q9.6.18	q9.7.19	q9.7.20	q9.7.21	
χ^2	20,883	14,042	11,160	14,177	11,621	9,8416	17,896	12,734	
df	16	16	16	16	16	16	20	16	
p-value	0,1831	0,5956	0,7995	0,5856	0,7696	0,8748	0,5943	0,6921	

Table 2. Chi-squared values for some of the question results

Obtained Results

The results reveal very similar results distribution in the two sets of data – in 17 of 21 questions, the chi-squared test indicates the survey results have the same distribution. Figure 2 contains the histogram, displaying the frequencies of the obtained data for q9.6.18. It could be observed that the prevailing part (more than 50%) of the answers are „Strongly agree” (23,84% in IRISI survey and 33,77 in Innoplatform survey) and „Agree” (36,42% in IRISI survey and 31,13% in Innoplatform survey). In both surveys 1.32% of the answers are „Strongly disagree” and between 2,5 and 3,5% of the respondents have selected „Disagree”. The results indicate the critical part of the SMEs understand the importance of the topic of interest.

**Съвременни управленски практики XI - БСУ, 2021
ИНТЕЛИГЕНТНА СПЕЦИАЛИЗАЦИЯ В ДЕСЕТИЛЕТИЕТО
НА СВЪРЗАНОСТТА И АВТОМАТИЗАЦИЯТА**

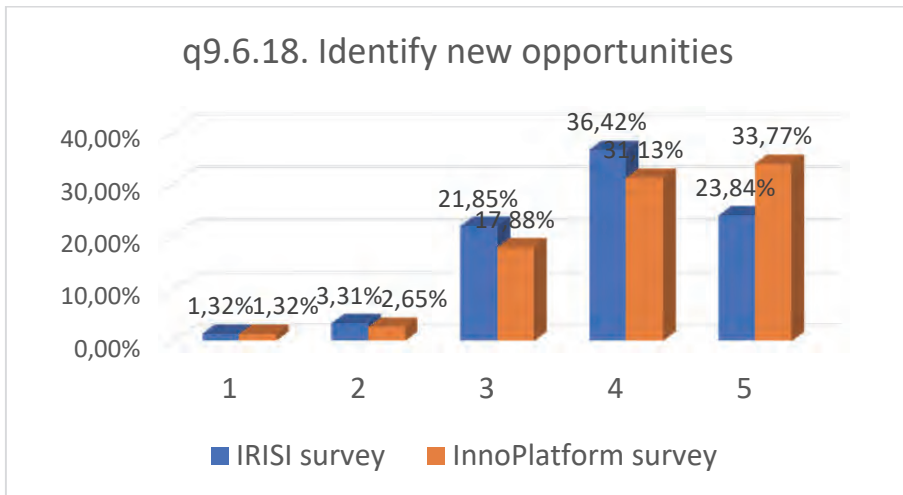


Figure 2. Histogram of the survey results for q9.6.18

At Figure 3 the obtained results for q9.7.19 are presented, revealing some discrepancies between the 2 sets of data. In IRISI survey the answer “Agree” is the most popular one (29,80%), followed by the answer “Neutral” with 25,83%. Relatively small number of the respondents (15,83%) answer they strongly agree with the statement. On contrary, in Innoplatform survey nearly 45% of the SMEs signify they strongly agree and 31,13% agreed with the sentence. Only insignificant number of the Balkan-Med respondents claim they strongly disagree (0,66%) and disagree (3,31%). These differences could be explained with traditions in doing business in some of Balkan-Med countries like Greece and Cyprus and the skepticism of the Bulgarian SMEs due to the socialist heritage.

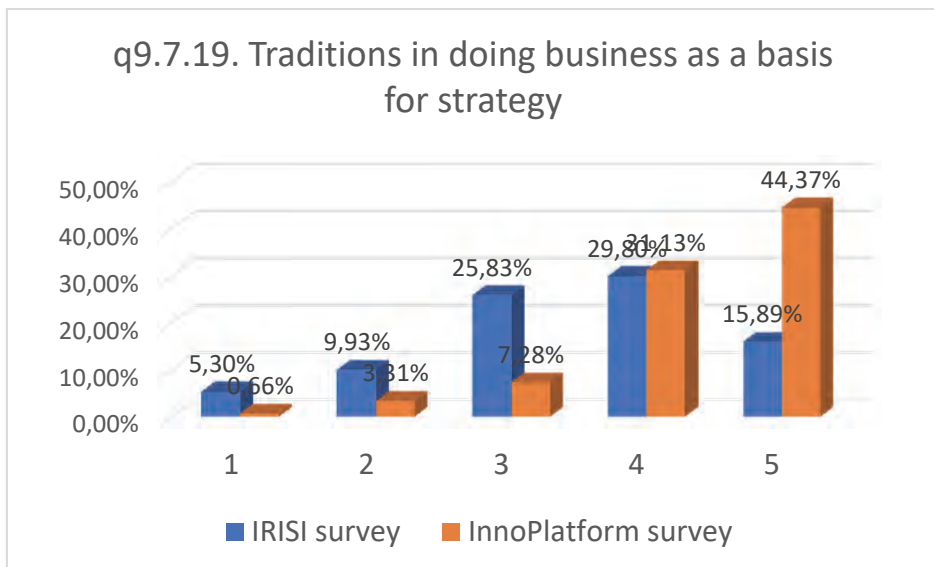


Figure 3. Histogram of the survey results for q9.7.19

Figure 4 contains the results for q9.7.21 for SMEs from both surveys.

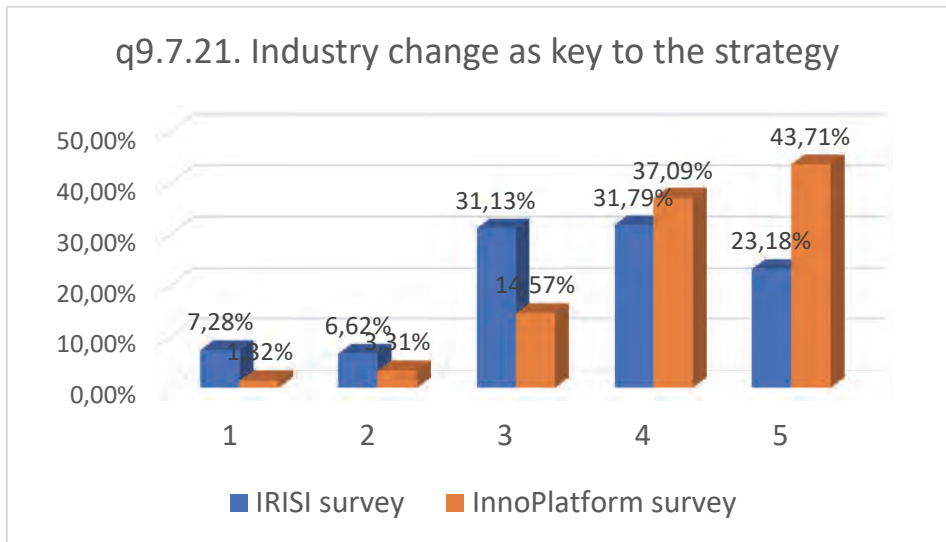


Figure 4. Histogram of the survey results for q9.7.21

It could be easily observed that the respondents of IRISI survey, selected „Agree” or „Neutral” are almost equally in percentage (about 31%), while those who answered with „Strongly agree” are 23,18%. Again, answers „Strongly disagree” or „Disagree” get relatively small percentage of answers (between 6,60 and 7,30%). Similarly to the previous question, the prevailing part of InnoPlatform respondents have selected „Strongly agree” (43,71%) or „Agree” (37,09%), while „Neutral” was the choice of 14,57% of the respondents. Again, the answers „Strongly disagree” and „Disagree” were selected only by small share of the SMEs.

Conclusion

The paper introduces a research about SMEs innovation activities and attitudes. SMEs are consist about 95% of companies in Bulgaria, so being an important part of country’s economy, they are expected to introduce innovations. This makes them responsible for stimulating innovation and competition in many economic sectors.

The presented results compare the attitudes regarding the innovations of the SMEs in the Southern Bulgaria, compared to those of SMEs in Greece, Cyprus, Bulgaria, North Macedonia and Albania. The results could be summarized as follows:

- The obtained results reveal that 17 of 21 result datasets have the same distribution;
- It could be considered the SMEs in Bulgaria and Balkan-Mediterranean region have similar attitudes and encounter similar problems in their innovation activities. The total number of 460 companies was almost equally distributed in the countries, depending on their population size, so it could be considered they are representative;
- So it could be concluded the efforts for fostering innovations should be focused on the SMEs ecosystem as a whole instead of separated actions in different countries.

Acknowledgements

This research paper describes some results of the project “Indexing the Regional Innovative Levels in the Sectors of the Economy (IRISI)- scenario for the identified in the ISSS four priority thematic areas for smart specialization and their positioning towards the circular economy” under the Bulgarian Scientific Research Fund.

References

- [1] Aksoy H., How do innovation culture, marketing innovation and product innovation affect the market performance of small and medium-sized enterprises (SMEs)?, *Technology in Society*, Volume 51, November 2017, pp. 133-141, DOI: 10.1016/j.techsoc.2017.08.005.
- [2] Bayarçelik E.B. , F. Taşel , S. Apak, A Research on Determining Innovation Factors for SMEs, *Procedia - Social and Behavioral Sciences* 150 (2014) 202 – 211.
- [3] Dadfar, H., Dahlgaard, J.J., Brege, S., Alamirhoor, A. (2013). Linkage between organisational innovation capability, product platform development and performance. *Total Quality Management*, 24(7), pp. 819 -834.
- [4] Ehrenberger, M., Koudelkova, P., Strielkowski, W. (2015) „Factors Influencing Innovation in Small and Medium Enterprises in the Czech Republic”, *Periodica Polytechnica Social and Management Sciences*, 23(2), pp. 73-83. <https://doi.org/10.3311/PPso.7737>.
- [5] Guzman G.M., Torres G.C.L., del Carmen Martinez Serna M., Garcia Pérez de Lema D. (2016) Innovation, Information Technology and Performance: An Examination of the Iberoamerican SMEs Context. In: Bögenhold D., Bonnet J., Dejardin M., Garcia Pérez de Lema D. (eds) *Contemporary Entrepreneurship*. Springer, Cham. https://doi.org/10.1007/978-3-319-28134-6_7
- [6] Klewitz, J. and Hansen, E.G., (2014), Sustainability-oriented innovation of SMEs: a systematic review, *Journal of Cleaner Production*, Volume 65, pp. 57–75.
- [7] Longenecker J.G., J. W. Petty, et al., *Small Business Management: Launching & Growing Entrepreneurial Ventures*, Cengage Learning, Jan 8, 2016.
- [8] Propriis, Lisa De, Types of innovation and inter-firm co-operation, *Entrepreneurship & Regional Development*, Volume 14, Issue 4, 2002, pp. 337-353.
- [9] Rideg A., Innovation activity of Hungarian SMEs: an empirical examination, *Proceedings of 16th International Conference on Management, Enterprise and Benchmarking*, Budapest, June 2018, pp. 306-315.
- [10] Sok, P., O’Cass, A., Sok, K. M., Achieving superior SME performance: Overarching role of marketing, innovation, and learning capabilities, *Australasian Marketing Journal*, Volume 21, Issue 3, August 2013, Pages 161-167, <https://doi.org/10.1016/j.ausmj.2013.04.001>.
- [11] Walicka, M. (2014): Innovation types at SMEs and external influencing factors, e-Finanse: Financial Internet Quarterly, ISSN 1734-039X, University of Information Technology and Management, Rzeszów, Vol. 10, Iss. 3, pp. 73-81, http://dx.doi.org/10.14636/1734-039X_10_3_006.