Conceptual model for investigating the innovation activity of enterprises

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Abstract: *The paper presents a conceptual model for investigating the innovation activity of enterprises from the wine industry in Bulgaria. The study aims to submit a unified methodological framework for application by experts in researching, analyzing and bench-marking the innovation activity in the sector. Many researchers confirm that different innovation models are appropriate for different sectors, regardless of best practices in innovation management, and it all depends on the specificity of innovation and its relationship to sector specificities. Thus, the examination of wine sector requires a specific approach and an empirical research, based on own questionnaire focused on the individualism and the need to study the innovation niches and opportunities of wine sector.*

KEYWORDS*: INNOVATION, WINE INDUSTRY, CONCEPTUAL MODEL, METHODOLOGICAL FRAME*

1. Introduction

The significance of the topic is central to discussions, research and organizational activities in the field of manufacturing and services. An important prerequisite for improving quality are the opportunities for innovation. The latter provides a potential for ensuring a higher level of economic development, but the problem of its more efficient management is still valid. This is even more difficult as innovation requires a specific approach depending on the industrial sector, because each industry and region have their own specifications. Some studies indicate that the development of radical innovations requires completely different management approaches than those needed for further innovations.

The wine industry, as a specific and traditionally strong sector for the Bulgarian economy, is the **main object** of the present study and the innovation is an extremely important element for further development of the sector and for achieving competitiveness. The paper presents a methodological framework for investigating the innovation activity of enterprises from wine industry.

The subject of this paper is the utilization of the methods and instruments with a view to establish the innovation potential and innovation activity of the enterprises.

The researcher's **thesis** is that creating a conceptual model for researching the innovation activity of enterprises will contribute to better analyzing the development of the wine sector as a whole. In line with this, the proper use and implementation of specific methods and techniques for investigating the innovation activities of enterprises provides opportunities for bench-marking and analyzing the innovation strategies of wine enterprises in Bulgaria.

Affidavit of support of the above mentioned, **the paper aims** to contribute for better understanding the necessity of taking right decisions in applying innovation.

The article is structured as follows: following the introduction, in the second part is described the methodological framework for investigating the innovation activities. This analysis paves the way for the third part, in which is highlighted the development of the survey instruments, i.e. an own questionnaire. The article closes with conclusions and recommendations for future research in the field of investigation the innovation activities in wine industry.

2. Methodological Framework

2.1. Theoretical Background

Wine production in Bulgaria has a rich long-term experience and outline the sub-sector as one of the main sub-sectors for the Bulgarian economy. A significant part of Bulgarian wine producers are also focusing on differentiation and diversification strategies, seeking ways to promote their business, expanding their markets and increasing their sales, and offering uniqueness to achieve and develop competitive advantages [1]. In this context, the establishment of a methodological framework for investigating the innovation activity has the potential to enrich the scientific knowledge and provide a good practice in this field of research.

At the 40th World Congress of Viticulture and Wine Production held in Sofia, between 29.05.17 - 02.06.17, Bulgaria was ranked 21st in the world regarding wine production and 23th as for the area of vineyards. The information provided is based on data from the International Organization of Viticulture and Wine [2], and the fact that a forum of such magnitude is held in our country, puts Bulgaria in the focus of the world wine community. Our wine production is characterized by a wide assortment of white and red wines (bottled and bulk) as well as those with protected trademarks that compete on the domestic and foreign markets. Legislative framework related to regulation of the sector is unified in line with the European one so that our products can compete with other EU countries.

Innovations in wine industry in terms of its management and competitiveness can be reduced to technological (process), product, marketing, management, organizational and information. Despite the well-developed, relatively deeply researched and analyzed theory of innovation as a management tool and a key factor for competitiveness, innovation in the certain industry is less analyzed. This is particularly true in the case of specific regions and local individualities which are prevalent in the wine sector. There is no comprehensive research to include innovation as a tool for achieving competitiveness in the wine industry. However, there is a significant research base to step on, to be put in a systematic way as a starting point and to serve as a foundation for further research.

2.2. The Necessity for Investigating the Wine Industry

The recent context is marked by a decline in wine consumption and a highly competitive environment in which the wine industry operates. Thus, it is crucial for the wine producers to seek opportunities to develop their competitive advantages (their leading strengths), to overcome the weaknesses and develop their own competitive potential. A prerequisite for the realization of these goals is the development and approbation of innovation.

Such opportunities, corresponding to some of the goals set in the *National Strategy for Development of Viticulture and Wine in the Republic of Bulgaria 2005-2025* [3], should be sought in view of:

• Building a modern structure of the sector and increasing its competitiveness through the implementation of technological (process), product, marketing, management, organizational and information innovations;

• Stimulating SMEs in the industry to focus on concrete improvements and approbation of innovative solutions;

• Establishing a methodical framework for investigating the innovation activities in the sector that will create opportunities for analyzing and bench-marking the applied innovation strategies;

• Increasing the human resources capacity in the sector to explore and improve the innovation strategy of their enterprises.

2.3. Conceptual Model: Research Methodology and Techniques

The conceptual model for investigating the innovation activity of enterprises is a part of a project № KP-06-M25/5/17.12.18, financed by the Bulgarian National Science Fund. It includes a wide range of research methods to successfully achieve the goals and tasks of the survey. The activity of each organization is a chain of interrelated processes - from marketing and planning to sales and after-sales. The desired outcome is achieved more efficiently when the activity and relevant resources are managed as a process. It is based on the fact that management is a continuous series of interrelated actions or functions that are presented as processes. The development of methodological situations is based on the ***process approach***, i.e. integrating the key conditions and processes in the work of the specialists, defining competencies for ***re-engineering*** the business processes, and a ***diagnostic analysis*** of their condition. The use of ***retrospective analysis*** over the last years of the development of economic and political processes and laws that directly affect the innovation activity of organizations helps to analyse and establish trends and regularities. It also includes a ***secondary processing of quantitative data*** concerning certain economic indicators during the period under review.

The research method uses a quantitative method, namely a ***structured interview*** - an inquiry card, which aims at obtaining feedback from the company's specialists on the innovative solutions in the organizations. The method of ***expert assessment*** is used and it is conducted with the support of scholars from the economic universities as consultants. The processing of the information should be done with a specialized software product.

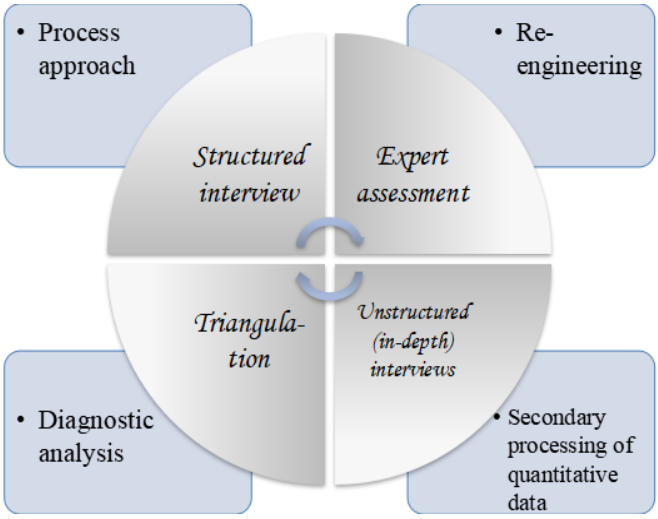

Fig. 1 *Conceptual model, Source: Own interpretation*

Secondary analysis of empirical data

Empirical data collected from national and international quantitative studies conducted by private and state sociological agencies, as well as authors' teams of scientific and educational institutions, are the arrays on which secondary data processing [4] can be done. For the purpose of this investigation, several information arrays have been selected. NSI and Eurostat [5] data are used for the overall innovation activity of Bulgaria during the period under review, as is also true for the Global Innovation Index [6].

Structured interview

Regardless of the specific technique used for registering the information – a questionnaire[1] or an interview[2], the structured interview allows the accumulation of massive data sets. In view of the persons included in the survey, it may be exhaustive (when all units of the population are included) or a sample (when units of the population are selected) [7]. In the specific case, after identifying the units of the general population (i.e. wine specialists and enterprise managers), it's elaborated a specific method for implementing the structured interviews using an online questionnaire [8].

Unstructured (in-depth) interviews

The type and content of the in-depth interview toolkit may vary depending on the following four factors: (1) the person who conducts the survey; (2) the subject of the study (it is important whether facts, assessments, opinions, ideas will be studied about a particular political or social phenomenon); (3) the subject of the survey; (4) the selection of respondents.

A major advantage of in-depth interviews is the opportunity they provide to analyse unexplored facts and events. In literature, in-depth interviews are referred to as pilot studies. Therefore, the researcher is interested to meet with as many people as possible in order to maximize his/her understanding of the subject of analysis and to get an immediate impression of how the different actors interpret the studied events.

In the current research, conducting in-depth interviews with some wine growers in SMEs would give a more in-depth and specific picture of the nature of their innovation challenges and provide additional explanations for some of the responses to the structured interview.

Triangulation: combining quantitative and qualitative research methods

Various options and approaches for combining quantitative and qualitative research methods are presented in the scientific literature. In combining, it is important to answer to the following questions: whether it is a combination of methods, data or results [9]; is equal weight attributed to both approaches; will the results of the two approaches be compared or will they be presented separately; in what sequence will they be used.

This conceptual model combines the results of the quantitative and qualitative method used, giving them equal weights. The methods will be applied independently from each other by first processing the quantitative empirical information, then structuring interviews, and then performing in-depth interviews. In this way, combining quantitative and qualitative research presents in more detail the subject of research through complementarity and triangulation. The principle of triangulation is that the results of one study can be verified and validated by the other [10].

2.4. Instruments: an Inquiry Card

The digital era brings all kinds of information thanks to the centralization and accessibility of data. For example, people now rely heavily on computers and mobile phones with internet, which gives an immediate answer to any questions they might have. Online surveys are a great way to reach and engage with the target audience. The benefits that they provide are: (1) Increase response rates by reaching the target audience fast; (2) Conduct market research at a fraction of the usual cost; (3) Get real-time results for quick and easy analysis. The time span needed to complete an online survey is on average two-thirds shorter than that of traditional research methods. Because information is being gathered

[1] In the survey the respondent himself completes the questionnaire drawn up by the researcher.

[2] In the interview, the interviewer's questionnaire is filled in not directly by the respondent, but by the interviewer who asks the questions and notes the respondent's answers.

automatically, there is no necessity to wait for paper questionnaires to come back - response time is almost instant. Online marketing experts say that more than half of responses are received within the first three days of the research project.

To sum up, online surveys are a great option for people and organizations who would like to conduct their own research – they are less time consuming, they are cheaper, you get the results faster, and you can transfer and use the data in various applications to answer important questions. Our team of researchers apply an online inquiry card using free software (for instance: Lime Survey, Google Forms, etc.).

The questionnaire starts with **introduction** of the research purposes, presents the basic aims and instructions in line with fulfilling the card anonymously. Followed by the **first section** that includes information about the respondents in accordance with gender, age, education, and length of service.

The **second section** includes enterprise data in connection with the number of employees; a field of production/service; import/export orientation; a form of ownership; funding sources; sources of materials; diversification of products and services; types of wine.

The **third section** starts with next questions (close type of question with multiple answers): "*Do you implement innovative strategies in your enterprise?; At what stage is the implementation of innovation strategies in the enterprise*?; *What result do you expect from the implementation of innovation?*" After that the respondents must indicate what kind of innovation they are applying in the enterprise, selecting among the following options: 1 - Not applicable to us; 2 - We know about this opportunity but we would not apply it; 3 - We know about this opportunity and we would apply it; 4 - We are currently applying it; 5 - We have applied it in the past. The next table presents next six questions that are grouped according the kind of innovation and multiple answers according different opportunities that can be applied.

Table 1. *Section Innovation*

Raw material innovation	Market Innovation
Introduction of new grape varieties - Organic production	Export orientation to new foreign markets
Production of new types of wine, incl. BIO	Increasing the number of distributors in foreign markets
New plantations (in view of local conditions)	Increasing the number of distributors in the internal market
New plantations (with a higher wine class)	A new form of product promotion on the market
Improvement of varieties	New strategic agreements
Limiting varieties to more noble ones	A new form of merchandising
Use of wild yeast	Acquisition of new quality certificates
Improving the quality of vineyards through the use of vineyard experts	Focus on a specific geographic market
Product innovation	Focus on a specific market segment
Production of products in price segments of super premium and ultra premium	Increasing brand popularity
Introducing new services such as tourism and recreation	Striving for inclusion in expert wine charts
New packaging, incl. organic packaging	Participation in contests for winning prizes
New labeling	Brand development
New types of bottles	More successful use of retailers as a distribution channel for online distribution (online sales)
New caps	Investment in advertising
Process/Production innovation	Investment in packaging
Improvement of the production process	Investment in labeling
Acquisition of new equipment	Management innovation
Acquisition of new machines	Review of organizational procedures
Broad use of technology transfer	Further training and advanced training of employees
Utilization of alternative energy sources (solar)	Optimization of business processes
Utilization of alternative energy sources (photovoltaic)	Exchange of knowledge regarding production
Utilization of alternative energy sources (geothermal)	Research initiatives
Reduce water use	Use of private consultants
Reduce energy consumption	More efficient use of resources
Production waste management	IT Innovation
Production emissions management	Increasing cyber security
	Introducing GDPR
	New software for managing different processes

Source: Own interpretation

3. Conclusion

There are clear prospects for the wine industry, as this is a sub-sector, significant and distinct for the Bulgarian economy on a global scale - a fact that has been proven over the years. Many authors and researchers claim that wine will become one of the symbols of Bulgaria. There is a competitive potential in this industry, which, if properly identified and successfully developed, would enhance the competitiveness on international markets' level.

The current conceptual model for investigating the innovation activity of enterprises from wine industry can be enriched in the context of competitiveness. Based on the fact that the implementation of innovation provides an up-to-date competitive advantage for enterprises, the methodology can be supplemented by issues related to the competitiveness and competitive positioning of the company. Moreover, it is an opportunity for future research in the field of innovation and competitiveness of the wine sector.

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