

THEORETICAL AND CONCEPTUAL FRAMEWORK FOR RESEARCH ON COMPETITIVENESS OF FORESTRY COMPANY

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ABSTRACT

The maintenance of ecological, economic and social functions of forest territories is closely connected with competitiveness of forestry. Its assessment permits to take the right decisions for its enhancement and rational use of forest resources. In this regard the purpose of this paper is to present the theoretical and conceptual framework for development of unified methodology for quantitative assessment of competitiveness of forestry companies in Bulgaria. The theoretical framework is based on the existing theories in the field of company competitiveness. On the basis of their study it is concluded that the quantitative indicators characterizing the competitiveness of forestry companies must meet the following requirements: practicality, which is associated with low costs for data collection; sensitivity to changes in forestry practices; objectivity and measurability; standardization within certain limits, which allows comparison of management results with the set goals. The conceptual framework of research stresses on the fact that from statistical point of view the competitiveness is a complex indicator. It is characterized by numerous manifestations, which are measured by set of simple (one-dimensional) indicators. Their processing through different statistical methods produces the value of complex indicator – competitiveness. The conceptual framework of the research requires solution of series of tasks – from justification of a system of one-dimensional indicators characterizing the competitiveness of forestry companies to collection of information about them, processing and interpretation of results through the prism of sustainable management of forest territories. The current article is dedicated to solution of this circle of issues.

Keywords: forestry, competitiveness, theoretical framework, conceptual framework

INTRODUCTION

Enhancing the competitiveness of forest sector is prerequisite for efficient use of forest resources, central role in bioeconomy value chain and benefits for society. The competitiveness of the sector is consequence from the competitiveness of the economic entities operating in it. The quantification of the competitiveness of the last ones permits scientifically sound business decisions, through which to be increased the competitiveness at the level of company, which will contribute for enhancement of competitiveness at the level sector. In this relation the purpose of our scientific studies is to develop unified methodology for complex quantitative assessment of competitiveness at the level company from Bulgarian forestry. The achievement of this goal demands the acceptance of clear theoretical and conceptual framework for the study of competitiveness, which is the object of discussion in current paper.

1. THEORETICAL FRAMEWORK OF RESEARCH

The significance of the theoretical framework for the researcher can be compared with that of the roadmap for the traveler. Likewise the roadmap, which does not allow the traveler to deviate from the drawn route the theoretical framework does not allow the researcher to deviate from generally accepted theories. This guarantees a certain scientific level of achieved contributions. In most general sense the theoretical framework consists of theories, theoretical principles and models known from the literature and verified by other scientists, which allows the researcher to substantiate his thesis about the studied problem, as well as to select appropriate methods for data processing. Without a theoretical framework the research is deprived by study of appropriate literature sources and scientific discussion of the obtained results. The theoretical framework should be reflected in each component of research process – problem's definition, references, methodology, discussion of results, conclusions and presentation. The theoretical framework allows the researcher to get acquainted with alternative theories, which enrich the research, give depth and meaning of the content. Due to this when researches apply for funding they must present a clear theoretical framework, that pivots the intended research and convince the unbiased reviewer of the scientific value of the proposed project [cited by 3]. In this line of thoughts in the following exposition on purpose to accept a definition about the category company's competitiveness the understandings of different authors are briefly presented.

According to H. Adamkiewicz-Drwillo the firm competitiveness is determined by quality of the products that company offers on a given market, price level, optimal sales channels and methods of promotion [cited by 13]. This definition is correct, but is not complete as it does not take into account what it costs to the producer to achieve high competitiveness of the production. In some cases the aspiration towards competitiveness may in short term leads to high costs for investment in innovations and unsatisfactory financial results. Other authors supplement the above definition with various indicators – unit cost of production, percentage change in market share, net profit, return on assets and equity etc. These indicators enrich the theory related to company competitiveness. At the same time they are static and relate to the efficiency of current production activity while the competitiveness is a dynamic category pointed out toward long-term economic success [15]. In order to overcome the static some authors consider the

company's competitiveness as an opportunity for adaptation towards the changing environment conditions. For example V. Milusheva consider competitiveness as an ability of the industrial firm to make the most of the external environment and to use successfully the reserves of its own potential in the long run [8]. The understanding of P. Buckley et al. is similar and according to it the competitiveness of the company is: its ability to produce and sell products of superior quality and lower costs than its competitors. Competitiveness should be measured by the long-term profit of the company, compensation for its employees and high returns to its owners [2]. This definition is partly different from the point of view of the scientists from the Institute for Management Development, who define competitiveness as an analysis of the ways in which companies manage all their resources to achieve prosperity and profit [5]. The approaches for competitiveness characterization discussed above are correct but do not cover all aspects of the category. According to M. Velev, in order to be competitive an enterprise needs to reorganize its business better than its competitors. In relation with the last one the author defends the thesis that: 'the enterprise competitiveness is its ability through continuous renewal and improvement to create and sustainably maintain competitive advantages leading to high long-term economic results' [15]. Y. Hristova's opinion does not differ significantly from the previous one. She points out that enterprise competitiveness is based on systematic search for sources of competitive advantage in the internal and external environment. They allow the enterprise to position itself better than the competitors by set of indicators, as well as to achieve a long-term profitability [4]. To some extent, authors like M. Tsoklinova, N. Neikov, A. Ajitabh and K. Momaya are differentiated from the previous one. According to them the competitiveness of a company is determined by its market share [1, 10, 14]. Summarizing the opinions presented till now under the multidimensional category 'company competitiveness' in the current paper, it is understood the enterprise's ability to produce products more effectively and efficiently in comparison to its competitors and to protect its market share, as well as to take advantages by the external environment and to create new markets. All this allows to the competitive enterprises to achieve positive results concerning price, profit, return and products quality [12].

There are various methods for valuation of company's competitiveness, but none is generally accepted. The main disadvantages of most of them are the lack of complexity in the assessment and inability to reach complex assessment standardized within certain limits [11]. In the methodology that will be developed by the research team these shortcomings are expected to be overcome through the use of multidimensional statistical methods. They are applied by the World Economic Forum (WEF) and the Institute for Management Development (IMD) in the elaboration of the two globally recognized indices for national competitiveness assessment – the Global Competitiveness Index (GCI) and the World Competitiveness Yearbook (WCY) index [7]. Before that however we must note some disadvantages of the popular methods for company competitiveness assessment. The reason for that is to avoid them in the methodology developed by our research team. Due to the multidimensional character of competitiveness here are mentioned only methods based on a system of indicators. They are divided in two groups: ex-post and ex-ante. The first group methods is based on measuring the results from the performed activity. The main problems of these methods are: the correct selection of derived indicators of competitiveness and simple (one-dimensional) indicators for their measurement; estimate only the achieved

competitiveness but do not reflect the potential of company for its long-term maintenance or increase, which determines their static nature. The second group of methods estimate the company's competitiveness (present or future) by measuring the prerequisites, the conditions for its achievement and therefore it is assumed that they more accurately reflect the dynamic nature of the category. The main problem with application of ex-ante methods is the comprehensive disclosure of the system of prerequisites and the causal links between them and competitiveness. Here should be noted that the development of methods for assessing the company's competitiveness on the grounds of both (ex-post and ex-ante) methods is reliable tool for estimation of present competitiveness as well as the potential of enterprise to increase it [15]. It is drawn up the conclusion that since in theory and practice there is not unified position yet about the derived and simple indicators for competitiveness assessment towards them can be pointed out some general requirements which they have to meet: practicality, which is associated with low costs for data collection; sensitivity to changes in forestry practices; objectivity and measurability; standardization within certain limits, which allows comparison of management results with the set goals [6].

2. CONCEPTUAL FRAMEWORK OF RESEARCH

Unlike theoretical framework, the conceptual one is not generally accepted and contains ideas that the researcher intends to realize in a specific study. The conceptual framework is a model constructed by the researcher by means of which he explains the links between the main components/variables of the study. The model can be adapted for the goals of the respective research from the existing theory. In its essence the conceptual framework is a logical arrangement of actions through which the scientist intends to explore the research problem and to achieve the set goals. Figuratively speaking the conceptual framework is the 'medicine' of the researcher through which he will 'cure' the research problem. It is appropriate the conceptual framework to be presented graphically for better visualization of the links between the key components/variables of the research and also to be expressed in writing for better understanding [cited by 3].

In current paper the category competitiveness is characterized on the basis of many derived indicators and simple indicators proposed by M. Velev [15]. They reflect the complexity of the category as well as its multifaceted and dynamic character. Due to the specifics of forestry some of the proposed by M. Velev derived indicators, simple (one-dimensional) indicators and weighting coefficients are replaced by others. Through them the current and potential competitiveness of forestry company have to be estimated. In this article the conceptual framework for competitiveness assessment refers to the territorial divisions (state forestry enterprises (DGS) and state hunting enterprises (DLS)) of state enterprises for management of state forest territories.

The indicators that are proposed for competitiveness assessment at present phase of our studies are: competitiveness of the product being offered, labor productivity, financial results, enterprise growth, market adaptability, forest and other wooded land; growing stock in forest and on other wooded land; silvicultural activities. It should be underlined that the quantification of a multivariate indicator – which in this case is the competitiveness – cannot claim to be exhaustive because there is always something elusive within the set of one-dimensional indicators. They refer to certain features of the

phenomenon being studied and are subject to quantification. In their unity as a single system they characterize the wholeness, i.e. the multivariate indicator that is studied [9]. In the lines below is briefly presented the essence of the indicators accepted:

- Competitiveness of the product being offered

The competitiveness of offered products reflects the customer preferences to the products of certain company over the products of competitive companies. As a result, revenues are generated allowing the company to acquire high quality raw materials and supplies, to invest in new products and technologies and to improve the qualification of its employees [15]. In this case product competitiveness is defined on the basis of two indicators: realized quantity and price of the main product – timber.

- Labor productivity

Productivity of labor is a generalizing indicator which reflects how effectively the forestry sector uses the available resources. Most authors believe that productivity of labor, taking into account the added value per one employee of the enterprise, is a basic indicator for estimation of the current competitiveness [7].

- Financial results

The main goal of the financial performance indicator is to be an additional to other indicators because the achievement of a higher level of some indicators can be done on account of lower profit. For example, the higher competitiveness of offered products can be achieved by increasing the quality considerably, which would reduce the financial results, on condition that the market prices are steady. Due to similar reasons the company can register high productivity, but with relatively low profits. The financial performance indicator reflects the quality of management of the enterprise finance and is assessed through the one-dimensional indicators: return on equity (financial profitability); total liquidity and financial independence. Through weighing of the three indicators with weights determined on the basis of expert opinion and their aggregation an assessment of the derived indicator "financial results" is obtained [15].

- Enterprise growth

This indicator can be determined through various indicators [15]. For the forest enterprise it is assessed through the current growth of timber stock per hectare and the growth rate of the fixed assets. The first indicator is of great significance for the annual timber harvested volume, the timber sales revenues, the amount of added value, financial performance and opportunities for development of the respective DGS/DLS. The second indicator reflects the long-term investments of the company performed with the aim to realize its business objectives. Through weighing of the two indicators with weights determined on the basis of expert opinion and their aggregation an assessment of the derived indicator 'enterprise growth' is obtained.

- Market adaptability

This indicator is characterized with the abilities of the management of the company to identify and quickly adapt to the changes of the market situation. It is determined on the basis of the offered quantity of timber and the actually sold quantity of timber.

- Forest and other wooded land (ha) and growing stock in forest and on other wooded land (timber volume, m³)

Forest and other wooded land and growing stock in forest and on other wooded land are the main resources, which determine the current and future competitiveness of forestry sector. They are basis for production of timber and non timber products and services.

- Silvicultural activities

This indicator includes activities as soil preparation, afforestation, replenishment, cultivation, plowing, fencing, pruning, fertilization, cutting, fire protection belts, etc. They are not connected with current competitiveness, but are prerequisites for the quality of future timber production, and hence to the potential competitiveness of the forestry company.

The derived indicators and one-dimensional indicators described above that characterize the competitiveness of forestry company are subject to reliability testing. This is done by conducting a survey with questionnaires among specialists related with forest territories management. On these grounds the proposed system of indicators is supplemented and improved. After its final selection the study moves to the next stage of the working program. It is related with systematization of possible approaches for statistical study of competitiveness and acceptance of sensitive method, that allows deriving complex quantitative assessment of the level of competitiveness of forestry company. At this stage of the working program the following methods are considered: linear ordering in multidimensional space; factor analysis; principal component analysis; weighting and aggregation methods .

The last phase of the project realization is related with the approbation of the developed methodology. This stage includes: the collection and processing of empirical data about the accepted indicators characterizing the competitiveness of UOGS ‘G. Avramov’; quantification of competitiveness of UOGS ‘G. Avramov’ for different time periods; improvement of the methodology for statistical study of competitiveness.

CONCLUSION

The results from the realization of the theoretical and conceptual framework of the designed research are expected to be:

- Development of objective, practically applicable system of indicators, which characterizes the competitiveness of forestry company. The substantiated indicators for quantitative assessment of competitiveness should be characterized with: practicality, which is associated with low costs for data collection; sensitivity to changes in forestry practices; objectivity and measurability; standardization within certain limits, which allows comparison of management results with the set goals.
- Development of objective methodology for complex quantitative assessment of forestry company competitiveness. Through it the economic entities in the forestry of Bulgaria will have an opportunity to compare quantitatively the level of competitiveness with each other in statics or with themselves in dynamics. This will allow their management teams to make scientifically grounded management decisions to increase competitiveness at enterprise level and to use efficiently forest resources.

- The developed methodology will be applied in the lecture course in disciplines from the curriculum of specialty 'Forestry' and 'Business Management' as well as in the training of PhD students in some of the professional fields at University of Forestry – Sofia.

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REFERENCES

- [1] Ajitabh, A., Momaya K. Competitiveness of Firms: Review of Theory, Frameworks and Models. Singapore Management Review 26(1), pp 45–61, 2004.
- [2] Buckley P. J., Pass C.L., Prescott K. Measures of International Competitiveness: A Critical Survey. Journal of Marketing Management 4(2), pp 175–200, 1988.
- [3] Dicson, A., E. K. Hussein, J. A. Agyem. Theoretical and conceptual framework: mandatory ingredients of a quality research. International Journal of Scientific Research, India, vol.-7/issue-1, pp 438-441, 2018.
- [4] Hristov, U. Izsledvane na concurentosposobnostta na predpriyatiyata za turgoviya s novi avtomobili v Bulgaria. Avtoreferat na disertatzionen trud za prisujdane na obrazovatelna I nauchna stepen 'doktor'. Ikonomicheski universitet, Varna, 45 p., 2014.
- [5] Institute for Management Development. World Competitiveness Yearbook. Switzerland, 467 p., 2017.
- [6] Kolev, K. N. Factor Analysis of State Forest Territories Sustainable Development in Bulgaria, Innovativity in Modeling and Analytics Journal of Research, vol. 5, pp 9-22, 2020.
- [7] Kolev K. N., Tsoklinova M. A., Delkov, A. N. Factor analysis of forestry competitiveness, Forest Science No 2, pp 143-164, 2020.
- [8] Milusheva, V. Metodika za otzenka i analiz na concurentosposobnostta na industrialnata firma. Ikonomicheski i socialni alternative, Sofia, vol. 4, pp 102-117, 2012.
- [9] Mishev G. D. Kvantificatziya na mnogomerni priznatzi. Nauchni trudove na UNSS, Bulgaria, kn. 3, pp 3-31m 1992.
- [10] Neykov N. K., E. Kitchoukov, P. Antov, V. Savov. 2019. Efficiency analysis of the Bulgarian forestry and forest-based industry: a dea approach. International Conference on Innovations and Science and Education. March 20-22. Prague. Vol 7: CBU International Conference Proceedings, pp 228-235, 2019.
- [11] Popova, I., M. Zitzova. Metodika za opredeleniya integralnogo pokazatelya concurentosposobnosti roznichnyih torgoviyh setei. Internet-jurnal 'Naukovedenie', Rossiya, 7, pp 1-11, 2015.

- [12] Sasatani, D. National Competitiveness Index of the Forest Products Industry in the Asia-Pacific Region, Working Paper, 25. Food and Agriculture Organization of the United Nations Regional Office For Asia and The Pacific, Bangkok, 114 p., 2009.
- [13] Siudek, T., A. Zawojka. Competitiveness in the economic concept theories and empirical research. *Oeconomia* 13 (1), pp 91-108, 2014.
- [14] Tsoklinova M. A. Efekti na nesuvurshenata concurentziya vurhu pazara: zaguba na blgosustoyanie pri monopol. Deseta ubileina mejdunarodna nauchna conferentziya na tema: 'Ikonmikata na Bulgaria i ES – suvremenni predizvikatelstva i podhodi za resheniya. Izdatelstvo na VUZF 'Sv. Grigorii Bogoslov', Sofia, pp 471-478, 2014.
- [15] Velez M. S. Otzenka i analiz na firmenata concurentosposobnost, Sofia, 188 p., 2004.