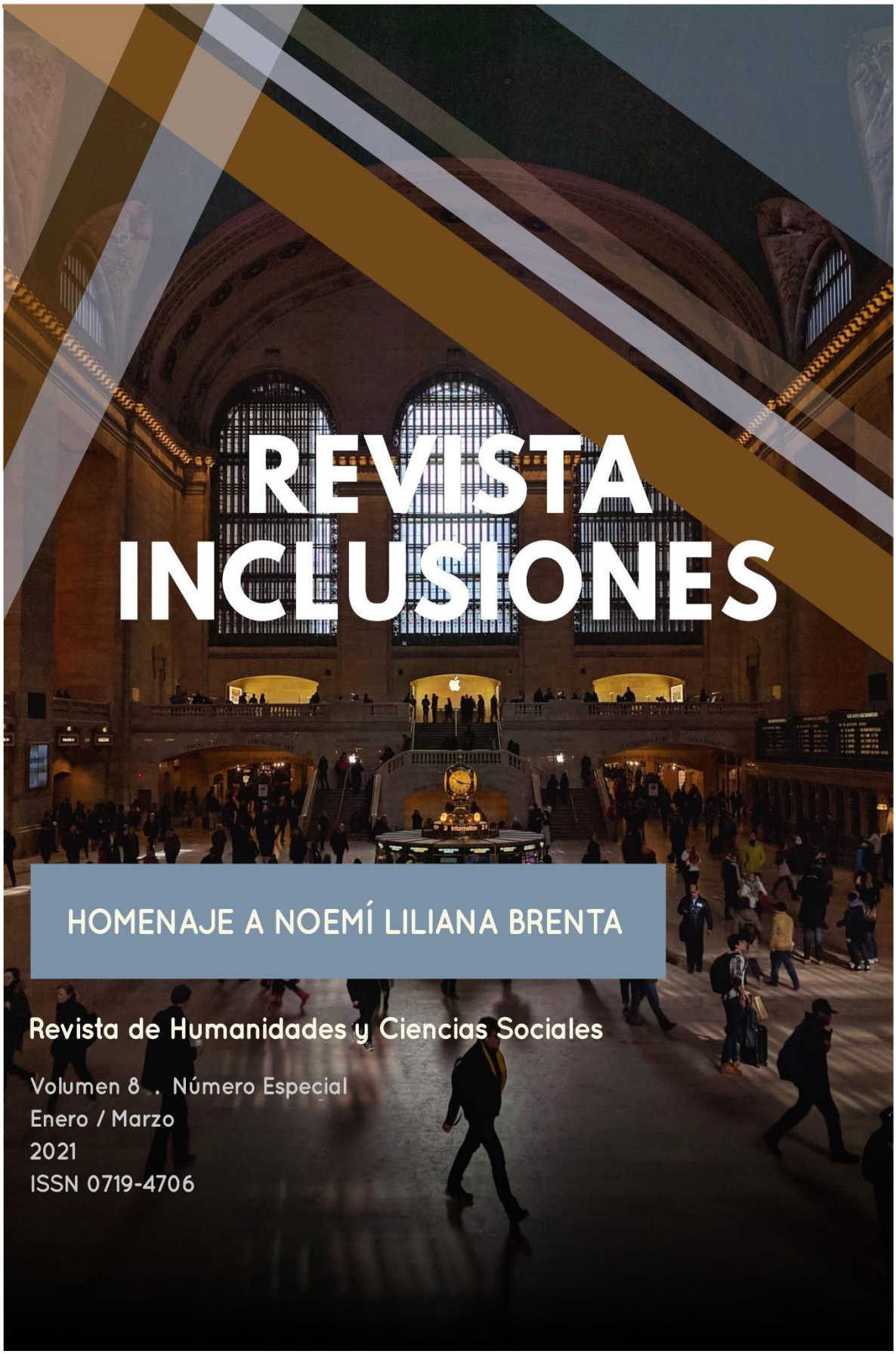

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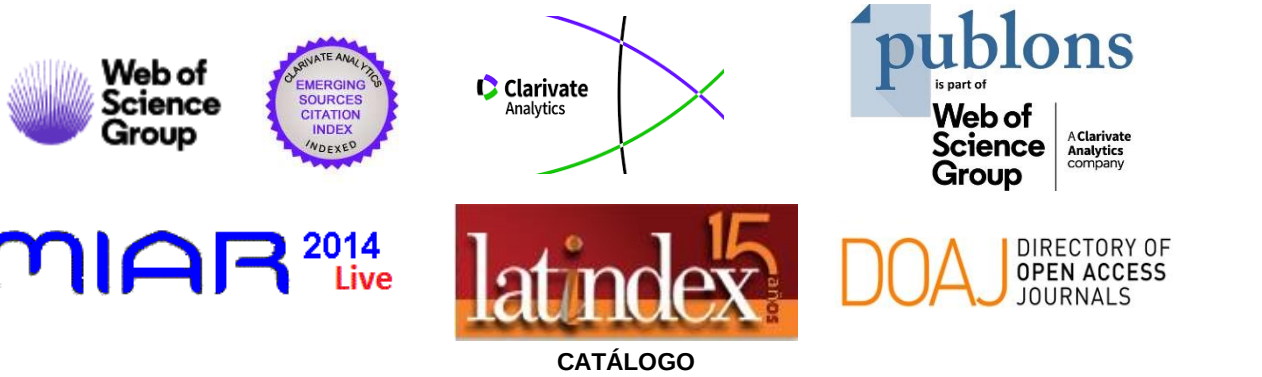

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COMPETITIVENESS ASSESSMENT CONCEPTS

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Abstract

The aim of the article is to present concepts for assessing of competitiveness. We take into account the ideas of individual authors, as well as their views on the applicability of each concept. Our idea for systematizing concepts is according to the levels in economy. The results of the article define a diversity of concepts for assessing competitiveness. We accept diversity as consequence of the wide range of definitions of competitiveness. Competitiveness assessment concepts cross thresholds specific to each level of the economy.

Keywords

Competitiveness assessment concepts – Competition – Multi-level analysis – Systematization

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Introduction

Competitiveness is one of the most important internal factors for functioning of the firm and is realized through interrelations with other subjects of the external environment. In a broad sense, this means an option to win the victory in a rivalry[1].

Main characteristics of development of modern economy such as increasing the level and acceleration of globalization, very high dynamism and instability of external environment, strengthening the competition in individual industry and / or regional markets, continuous and rapid development and increasing the importance of information and communications technology have a direct impact on the level of firm competitiveness[2]. To the factors that are related to competitiveness are demand in domestic and international markets, competitive imports, financing and economic environment[3]. At the same time, competitiveness is studied in many aspects and at different subject levels[4].

In recent years, there has been a growing academic and political interest in both conceptualizing and assessing competitiveness. An expression of the firm competitiveness is its adaptability, expressing the adequacy of its responses to the impact of environment and compliance with changes in environmental dynamics[5].

The situation is paradoxical there is no uniform concept for assessing competitiveness. It is essential to point out that the competitiveness assessment is based on comparison[6].

As a beginning of modern competitiveness assessment concepts, we can accept the control over the market concentration (mergers and acquisitions)[7] and the measures for consumer protection (a consequence of the new products entry due to mass production)[8]. As from 1970s, the collection and processing of macro-data for assessing competitiveness began.

Assessing competitiveness is an inspiring challenge. The competitiveness' nature as result of a complex combination of interrelated factors and international data leads to the impossibility of adopting a single assessment concept. The assessment of firm competitiveness is based on the following requirements:

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[1] Milena Filipova and Radostina Yuleva, "Innovative management as competitiveness factor", Entrepreneurship Issue 2 (2018): 215.

[2] Rayna Dimitrova, "Assessing Tool for Analysis and Evaluating the Competitive Potential of an Enterprise", Economics and Management Vol: VIII Issue 4 (2012): 2.

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[8] EU Commission, More protection for consumers against defective products proposed (Brussels, 1976), (11.11.2020). http://aei.pitt.edu/30469/1/P_72_76.pdf

– systemic and complex approach in forming the system of assessment indicators;
– use of minimum possible, but also sufficient number of indicators for complete, reliable and accurate assessment;
– use mainly of quantitative indicators for assessment;
– avoiding duplication of assessment indicators; minimizing the subjectivity in the assessment;
– periodicity of assessment[9].

As a result, there is an objective need to provide a sufficient amount of reliable information to allow the development of adequate management strategies of firms[10].

The development of competitiveness concept is accompanied by the formation of various views on its nature and content[11]. Every attempt for assessment should take into account the characteristics of competitiveness:

– The combined understanding of competitiveness' nature determines the use of different units of measurement (price, export share, profitability, costs, etc.), which determine different assessment results. There are reasons to believe that the multi-dimensional and dynamism of competitiveness determine its contradictory nature[12].
– Competitiveness is a relative concept in terms of resources. There is no "race from A to B" in economics[13]. Competitiveness can only be used to compare individual companies.
– The resources dynamics determines the competitiveness dynamism. An additional difficulty is the time relativity in determining and assessing competitiveness[14].
Determinants of competitiveness assessment. Competitiveness assessment is characterized by:
– Competitiveness measures have a positive and normative character[15]. The positive character is a consequence of reflecting actual results. The regulatory nature is caused by *ex post* and *ex ante* measures: for example, competitiveness is based on measures of macroeconomics (trade balance, exchange rate, etc.) and microeconomics (balance sheet, profit, etc.), both of which are based on previous information, so there is a limited opportunity to assess potential competitiveness.
– Competitiveness assessment determines which economic indicators are a source or which are a result of competitiveness. For example, the trade balance is a source of competitiveness, while price and cost are a result of competitiveness.
– The heterogeneity of variables and measures for competitiveness in empirical research prevents comparisons of their results. Given the abundance of available measures used to assess competitiveness, special care is needed in choosing the right measures.

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Concepts for competitiveness assessment at micro level

The micro level is at the heart of the concepts of competitiveness – the first response to any challenge to European competitiveness should come from individual firms in different sectors[16]. In the 1980s, is established the first expert group to consider the decisions to be taken "on new Community actions making use of the Community dimension to improve the international competitiveness of enterprises"[17]. The competitiveness assessment at firm level has the same specifics as in other micro-level analyzes – lack of sufficient data from reliable sources. For example, in 1973 in the study of chemical industry in Germany, incl. for pharmaceutical sector, the lack of information on 11 of 50 largest firms requires the authors to calculate the sales themselves[18]. In the same year in the Netherlands, the lack of information at the micro level was overcome by a specific method – based on bank statements and corporate reports[19]. Last but not least, only firms with more than five employees are involved in competitiveness assessment[20]. In parallel with the economic development, dynamics in competitiveness assessment is reported. In most cases, the assessments of competitiveness are the resources of a firm and their use, and in rare cases, the assessments are aggregated data for an industry[21]. The authors' arguments are for a complex examination of competitiveness assessments: competitive potential refers to the resources used to generate better productivity; competitive performance is a result of compared to that of competitors; the competitive process is related to the management of the firm.

There are two groups of authors:

– Michael Porter uses the firm's productivity as the equivalent of its competitiveness[22]. According to this concept, productivity gains are achieved through lower costs or differentiated products that set competitive prices.

– Unlike M. Porter, a group of authors shares a resource concept to assessing competitiveness. For example, internal factors such as strategy, structures, innovation capacity and other intangible resources.

The uniqueness of competition among pharmaceutical firms is focus on new products through research and promotions through sales by an expert (a pharmacist). Less attention is paid to price competition and focusing on costs and sales volume[23].

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When assessing the competitiveness at the micro level, account should be taken of the fact that there is more than one person involved in the choice of pharmaceutical product. The influence of treating physician, pharmacist, government authorities and NGOs defines the pharmaceutical market as an atypical market[24]. I.e. due to the abnormal functioning of the market, the usefulness for the patient as a consumer cannot be assessed with standard concepts. In the pharmaceutical market, the physician's logic of utility should be applied, as the market has nothing to do with economic principles. Close to the classical economy are the principles of inelastic market demand in the pharmaceutical market, i.e. demand is constant and does not depend on price and other market mechanisms. The competitive firm is a patent holder and nominated for good manufacturing practice[25]. Consumption of pharmaceutical products is not affected by economic development, but mainly by the health situation[26].

Suitable tools for micro-level assessment are quantitative sources such as annual reports certified by an auditor, as well as qualitative data such as interviews and surveys[27]. A good example of the use of quality tools is the practice in the United Kingdom, where competitiveness factors were identified through interviews with leaders in the pharmaceutical industry: the level of research, the availability of the workforce and access to pharmaceutical products[28].

Concepts for competitiveness assessment at meso level

Until the 1970s, the statistics in most countries reported data on pharmaceuticals, pesticides and insecticides as part of the chemical industry[29]. From the same period are the first sectoral studies on the development of firms' concentration for pharmaceutical products, radio and television, and household electrical appliances due to a considerable size, are not monopolized and do not have an atomistic structure[30]. A crucial problem for researchers has been determining the number of firms, as statistics considered the pharmaceutical sector to be integrated into the chemical industry[31].

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There is no consensus on the number of factors that determine the competitiveness of the pharmaceutical industry, and the only common view among authors is their large number: from 46 indicators[32] to more than 150 factors[33]. A feature in assessing competitiveness is the integration of pharmaceutical industry in other industries (R&D, production and health care)[34], as well as its fragmentation into several independent sub-markets[35]. For science based industries, for example pharmaceutical and energy, innovation and investment are important aspects of competition[36].

The rich palette of literature for assessing competitiveness at meso level can be limited to resources and results for a specific sector of the economy. In rare cases, the concept of assessing competitiveness depends on the type of data available, as well as by using different sources of statistics[37]. An appropriate tool for assessing the meso level is the case study approach, which correctly reflects the situation for a given industry as well as for a given country[38].

Concepts for competitiveness assessment at macro level

In the mid-1970s, the process of collecting data and assessing the external environment began. The first data are at macroeconomic level (number of employees, monthly expenses) for retail sales (pharmacies)[39]. The reasons for the changes in the prices of pharmaceutical products have been identified[40]. Sales to hospitals were reported separately from gross sales[41]. Issues related to the protection of consumers from the entry of new products on the market as result of mass production are on the agenda[42].

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In 1980s, the data goes beyond traditional industries (steel, textiles and shipbuilding) to new sectors, which act as growth-generating drivers and job suppliers[43]. Of particular interest is the process of automation to achieve competitiveness and retain the number of staff while taking into account the reduction of manual labor at the expense of increasing white-collar workers[44].

The concepts in macro assessment are based on:

– The speed of applicability of research. The period between invention and industrial innovation began to shrink[45]: if in the 19th century it took 100 years from the discovery of the steam engine and 50 years from the discovery of the telephone and photography to their application, then in the 1970s the period was shortened up to five years for atomic decay and up to three years for semiconductors. In this period, the pharmaceutical industry needs an average of 10 years to develop a new pharmaceutical product[46].

– The structure and composition of competitors. A large number of manufacturers and a large number of products, and a small number of manufacturers characterize the pharmaceutical industry and products control most of the market[47].

The assessment at the macro level is done through quantitative indicators. A feature of these empirical assessments are the large number of indicators and reputable data sources. For example, one of the successful analyzes has a framework of 120 macro indicators obtained from a combination of public sources such as the World Bank's Doing Business Indicators and the annual survey by World Economic Forum[48].

There are also concepts for assessing the macro level through a combination of both quantitative and qualitative variables. The Porter's Diamond provides an answer to the differences in the productivity of companies and the competition between countries in a macroeconomic context[49].

Most often, competitiveness at macro level is measured by productivity and exports. The assessment provides information on the effects of a competitive pharmaceutical industry, such as ensuring the availability of new, effective and safe pharmaceutical products, creating highly skilled employment and influencing the trade balance[50]. In the end,

[43] European Commission, Discussion paper for the special Council meeting of 20–21 September on the question of improving the international competitive position of European firms (Brussels, 1983), (11.11.2020). http://aei.pitt.edu/1381/1/competitiveness_firms_COM_83_547.pdf

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the competitive pharmaceutical industry is having an impact on macroeconomic indicators such as reducing healthcare costs and low dependence on imports from other countries. Competitiveness is rarely measured through supervisory practices, licensing regimes and exchange rates[51].

Concepts for competitiveness assessment at mega level

The pharmaceutical market, unlike other parts of healthcare systems, is international in nature[52]. The liberalization of oil market in the 1990s removed control over prices for medicines[53]. Competitiveness acquires a mega-level dimension as result of globalization[54]. The current wave of globalization is driven by policies that have opened up economies at national and international level as a result of many governments adopting economically free market systems, significantly increasing their own production potential and creating new opportunities for international trade and investment while reducing barriers to international trade and negotiate new international agreements to promote trade, goods and services as well as investment[55]. In theory prevails the opinion that the leading role is for identifying the factors determining competitiveness, instead of their measuring and grouping in indexes[56]. This approach paves the way for carrying out comparative analyses. The competitiveness indexes vary in methods used to aggregate data[57].

The modern authors use predominantly two concepts for competitiveness assessment[58]:

– The World Economic Forum defines competitiveness as “the ability of countries to ensure high levels of prosperity for their citizens”. I.e. the extent to which each country uses the available resources productively. The Global Competitiveness Index has been constructed in this aspect[59].

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boosting innovative research and controlling health spending trends’ (Brussels, 2000), (11.11.2020). https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52000IE1197&from=EN

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The Index presents the factors and attributes that drive productivity, growth and human development in the era of the Fourth Industrial Revolution. In 2019, the Global Competitiveness Index 4.0 index covers the economies of 141 countries, which represent 99% of the world's gross domestic product. The Global Competitiveness Index 4.0 is a set of 103 indicators obtained from data by international organizations and from studies of the World Economic Forum. The indicators are organized in 12 pillars: Institutions; Infrastructure; Adoption of information and communication technologies; Macroeconomic stability; Healthcare; Skills; Product market; Labor market; Financial system; Market size; Business dynamism; Ability to innovate.

– The International Institute for Management Development (IMD) Business School in Lausanne has managed to impose its rating system on international competitiveness over the past 30 years. The ranking covers capacity and readiness of 63 economies to adopt and study digital technologies for economic and social transformation[60].

The rating is determined based on three factors[61]: knowledge (intangible infrastructure needed for the dimensions of training and technology discovery), technology (quantification of the landscape of digital technology development), and future readiness (the level of readiness of an economy to take on its digital transformation). The ranking is determined based on 52 criteria, 20 of which are data from an IMD survey and 32 are the results of 57 partner institutes around the world. The dynamics for the last five years are regularly provided, as well as a comparison of the results by geographical region and the size of the population.

Conclusions

The diversity of definitions of competitiveness leads to a big number of methods for assessing it. The importance of competitiveness of individual levels in the economy determines the existence of attempts to introduce assessment concepts according to the features of individual levels. The large number of concepts for assessing competitiveness determines the difficulties in adopting a unified methodology. For the last 50 years, there has been a high dynamics in the concepts for assessing competitiveness:

- assessment methods go beyond the concepts of definition of competitiveness;
- unlike definitions, assessment concepts are multilevel and multidimensional;
- the aim of the authors in assessing competitiveness is to create a universal concept, unlike other authors who focus on a leading definition of competitiveness.

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