Theoretical Models of Business Competitiveness: Formation and Evaluation

Aušra Liučvaitienė[1]

Kęstutis Peleckis[1]

Neringa Slavinskaitė[1]

Tadas Limba[2]

Abstract

In this article is made the analysis of theoretical aspects of competitiveness and competitive advantage, and made the assessment of competitiveness research methods opportunities and application. Competitiveness is a complex category so it is not easy to measure and characterize it by several parameters. Competitive advantage is the entity's ability to develop effectively for a long term value that could exceed the value created by competitors, and at the same time to achieve a higher than average profitability of the branch. The literature analysis showed that competition theory of the comparative and absolute advantage can be applied in different levels of economic systems: as for single entity and for the industry, both at regional or national levels. In the fast-changing markets and industries competitive dynamics of environmental conditions require constant monitoring, appropriate management decisions to ensure the growth of effective changes. As internationalization process is takings part in the global economy today, which also is making the impact to the competitive process in which the formation of a new phenomenon come into force - the cooperation changes compatibility of economic and its competitiveness. This leads to a new approach in which competition is not seen as a struggle to destroy the opponent, but like co-operation, based on matches and rivalries. Actors in the shaping of their business strategy, effects on competitiveness, and combining resources in a given environment. So the response to changes in each of the levels will be different because of the different available resources.

Keywords: competitive advantage, competitiveness, management, business, competition policy, sustainability

1. Introduction

Increasing competition and the country's economic ability to withstand competition in the domestic and foreign markets became the main tasks for economic entities. Ability to respond to sudden changes in the market associates with competitiveness of companies, with their ability promptly maintain their positions. Success in this field will depend on what particular actions will be taken by economic entity in the market competition, or which criteria of the evaluation will be used to determine the competitiveness of entity and what recommendations should be made to improve the situation. Competitiveness of economic entities in the market is determined by the external, internal, economic, technological, social and other factors as a whole.

[1]Vilnius Gediminas Technical University, Saulėtekio al. 11, LT-10223 Vilnius, Lithuania
[2]Mykolas Romeris University, Ateities st. 20 LT-08303,Vilnius, Lithuania

But it is not enough just to identify the key determinants of competitiveness, it is necessary to select the data, metrics and evaluation methods, to carry out a coherent economic assessment of the competitiveness by providing directions to increase it. The most competitive incentive measures applied in response to the changes going on, so they often come too late and require certain organizational changes in the branch. For each business entity which is seeking to develop a successful business and to ensure development opportunities, for production manufacturer is necessary not only to identify the determinants of competitiveness, but also to get a profit from economical activity.

The **aim of this article** – to analyze the researches of competition, competitive advantage and competitiveness, and peculiarities of competitiveness evaluation.

The research object is competitive advantage of a business entity.

Research methods: a systematic literature analysis, comparative, logical analysis.

2. Theoretical interpretations of the competitiveness concept

The present day organizations are faced with a new, more demanding business environment, which is often described as unstable, volatile, hostile, and for the following reasons unpredictable or even chaotic. New technological and market opportunities are arising from the development of science, technology and international markets, i.e. processes outside of a particular organization. In such a situation is highlighted the importance of the organization's power to gain and maintain a competitive advantage in the long term and the aspiration to gain competitive advantage is not possible without adequate environmental strategy (Korsakienė, Grybaitė 2012).

The information age is characterized by dynamic changes which is crucial for the competitiveness of enterprises. Improperly formed decisions on companies competing strategy can have disastrous consequences. Therefore, one of the main objects of interest of modern strategic management researchers and businessmen in dynamic and uncertain business environment are the appropriate-decision-making on competitive strategy and achievement of competitive advantages. The dynamism of the business environment and uncertainty creates for businesses the need to act in accordance with accepted competitive strategic decisions of high quality that are formed by using the methodological tools which facilitate the company's competitive strategy decision-making, evaluation and selection processes (Raudeliūnienė 2007).

The analysis of the competitiveness concept can be divided into the following aspects of the competitiveness description and evaluation according to the approaches of authors exploring problems (Table1).

Table 1: Aspects of the competitiveness assessment in the areas studied by the authors (Source: compiled by authors)

Area of research	Authors exploring problems	Competitiveness Research Content
Comparative advantage and absolute advantage	D.Ricardo (1817), M.Durand, C.Giorno (1987), B.Balassa (1965)	The importance of country-specific advantages, i.e., , importance of economic characteristics. The country's competitiveness depends on the capacity of the use of resources , minimizing production costs.
Market structure types and their impact on competitiveness	J.B.Clark (1991), R.T.Ely (1894), F.H.Knight (1934). V.Snieška (2002), D.Bernatonytė (2003)	The following issues are analysed: the degree of monopolization and the effect on competition, oligopoly, influence of perfect competition market power to existing processes.
Theoretical and empirical studies of competitiveness	E.Chamberlin (1962), J.Robinson (1933), G.W.Stocking (1949), M.W.Watkins (1949), J.S.Bain (1956), F.M.Scherer (1970), W.Weiss (1990), T.A.Wilson (1974), M.Porter (1990), A.M.Rugman, J.R.D.Cruz (1993), M.Wise (1999), C.Pitelis (1999), G.Boyle (2002), I.Ferto (2003), J. Tvrdon (2001), Z.Lydeka (1994), L.Šliburytė (2000), A.Bartkienė (1993), S.Valentinavičius (2000), B.Barzdenytė (2001), V.Vengrauskas (2002), A.Poviliūnas (2001), V.Vitunskienė (2001), I.Krikščiukaitienė (2001), Dumčiuvienė (1999)	The following points highlight the competitiveness determinants: the available resources and their use, production capacity, the role of government and expenses, market share, economies of scale.
Competitive Strategy Formation	M.Porter (1990, 2000), E.Masfield (1920), F.M.Scherer (1970), R.Grant (1991), V.Mathur (1992), M.L.Kotz (1994), W.Kwasnicki (1992), N.M.Paula (2001), D.Beeg (1991), S.Martišius (2001), R.Ginevičius (2001)	Examines the importance of exclusive competences, product quality, innovation and investment in information systems.
Political, legal, and cultural aspects of competitivenss	F.Bradley (1996), P.Hardwick (1990), E.Pitts (1998), T.L.Vollrath (1991), D.Aakers (1989), P.R.Ferguson (1994), G.Startienė (1999), J.Bivainis (2002), B.Melnikas (2004)	The concept of competitiveness is estimated in economic terms, is seen by historically formed an integral part of the political, cultural and geographical context of globalization aspects.

M. Porter encourages players to seek the advantage in the market, choosing a product differentiation or lower cost, allowing them to get a higher profit in the market (Портер 2000). Formation of strategic competitive advantages gets special attention. M. Friedman competitive market evaluates as impersonal. Business entity in free market is not opponent for another business entity (especially if the products are homogeneous), i.e., none of the participants can't dictate terms to which others should follow, or to set market participants having the maximum comparative advantage (Friedman 1998). Comparing M. Porter's and M. Friedman's descriptions of competitiveness and competitive advantage, it should be noted that there arises the problem of definitions. In some research (Porter 1990; Rugman 1993; Pitts 1998; Fridman 1998; Boyle 2002), competitiveness is understood in two ways - like advantage of certain indicators, and as advantage of existing system of legislation, political, economic, social and other factors. In this way a new approach is formed - which involves not the competitive fight itself, but the ability of market participants to participate successfully in that struggle, i.e., competitiveness. According to M. Friedman the definition of competitiveness is abstract (Friedman 1998). It is not related with the specific events that take place in a particular place and a particular time, but allows to summarize separate events and the situation, showing their common features. For this reason, the term "competitiveness" does not have the unanimous definition, but these theoretical and practical authors, studying the phenomenon of the competitiveness, uses it for defining different states of market players, to describe market players in the same markets.

The concept of hyper-competition (Ferguson P. R.) describes such situation where for entities of economy have a greater impact the overall competitive effect of factors previously isolated from each other. It is argued that the competition at the same time includes a number of aspects of economic activities, the most important of which is the quality, cost, deadlines, know - how, market barrier, strengthening of financial position (Beeg 1991). The efforts of economic entities in hyper-competition can't be concentrated only on the one aspect of economic activity - all must be taken into account simultaneously.

The important role in researching this situation, has the assessment of international competition and competitiveness of the individual country's economy because the global market in the 9th decade of twentieth century has been taken   specific dynamics, which now is developing in two directions:

1. Globalization of competition on the supply side, occurring in integration of planning and cooperation of economic in the global market, in order to stand against other global competitors. Watching a steady supply growth caused by global suppliers, who are working on the base of international labor division.
1. 2. The acquisition and maintenance of competition globalization and competitive advantage is determined by homogenisation of demand. The number of globally operating customers and sales agents is constantly increasing (Melnikas 1998; James 1999; Glebocka 1997

The market polarization occurring   due to the economic globalization1 process is particular that one group of consumers prefer high-quality and high-value commodities more often, while the other – low cost, ignoring the medium-quality goods.

K. B. Clark, T. Fujimoto (1991) works show that the competitiveness concepts can be combined into a single system, named SER-M paradigm (Table 2).

Table 2: Competitiveness conceptual framework (Source: K. B. Clark, T. Fujimoto, 1991)

Factor	The economic entity	Business type	Party	Block	bal block
Subject	Skilled workers Trade Unions	Activity leaders Politicians	Politicians	Block leaders	Global leaders
Environment	The external and internal environment Related and supporting industry Random events	The external and internal environment Related and supporting industry Random Events	Random events	Demand for block level Random events	Random events
Resources	Acquire and develop resources skilled workers	Acquire and develop resources skilled workers Business strategy	Acquire and develop resources The external and internal environment Related and supporting industry local demand skilled workers	Acquire and develop resources The external and internal environment Related and supporting industry Demand for block level skilled workers macroeconomic policy	Acquire and develop resources The external and internal environment Related and supporting industry global demand for skilled workers block policy
Business strategy level	Business strategy of economic entity	Industry policy	Macroeconomic policy Industry policy	Block policy	Global policy

Using SER paradigm, the relationship between market structure, the behavior of entity and performance ratio can be explored in the industries of the economy.

As the lack of application of this paradigm, we can distinguish the uncertainty of selecting indicators describing the paradigm of SER cells. This system allows to asses main factors determining competitiveness of the economic entity, industry, country, block or the world. For such factors might be attributed the continuous update of market valuation (analysis) (Brander 1987). The main reasons for such need-fast-changing markets and monitoring of competitive industries environment and the operational changes towards efficiency. Entities who are forming national policy or business strategy affect competitiveness by grouping and organizing the available resources in a given environment. Thus the response to changes in each of the levels will be different because of different disposable resources.

The evaluation of the economic literature of various authors (Pitel, Lindroos 1999; Porter 1990; Trabold 1995; Heis 1992; Schumpeter 1965), dealing with competitiveness and the factors shaping it, suggests that competitive advantage of economic entity and competitiveness are formed by these factors (Table 3).

Table 3: Competitiveness Factors (Source: compiled by authors)

Group of factors	Factors
General factors	The geopolitical situation of the country; Legislation system of the country; The economic situation of the country; The economic and social policy; The demographic situation of the country; Natural ecological situation of the country
Main characteristics of the market economy	Regional disparities; The cost of production; State financial support; Market capacity and consumer solvency; The tax system
Operational infrastructure factors	Form of ownership; Staff; Entity's economic capacity; Industrial structures and infrastructure reengineering; research

In order to evaluate the competitiveness, given factors of competitiveness must be examined in complex, because they are all interrelated and form a single system.

Following presented in scientific literature factors influencing competitiveness and analysis of detection the sources of their impact, it can be said that the complexity of the competitiveness concept is determined by its breadth and versatility, as competitiveness is analysed in different environment and context.

3. Theoretical aspects of indicators for competitiveness evaluation analysis

The scientific literature analysing the competitiveness theory gives several general models for evaluation the competitiveness. In the scientific literature (Porter 1990; Rugman, D'Cruz 1993; D'Aven 1994; Weston, Chung 1990; Balassa 1965; Vollrath 1991) is presented a variety of methods used in competitiveness analysis, but they are often used as stand-alone methods for assessing competitiveness of the countries, the product and so on. The analysis of these authors' works, exploring the valuation of competitiveness techniques can be divided into the following groups:

1. The multidimensional, of all branches of the national economy, or any on industry competitiveness rating. After the issue of the branch (s) indicators system describing the competitiveness of the branch (or one complex variable), is determined competitiveness of the branch in international markets. The objective of the study - to determine competitive sectors of the national economy and to assess their development prospects in international markets. There might be used statistical data about foreign trade indicators (export and import volumes, net income from foreign trade and so on.) and individual operational and financial indicators of industries (labor productivity, production volume, value-added indicators of investment volume, high-skilled workers proportion and so on.);

2. Analysis of industrial clusters, analyzing links of the selected sector with other sectors. It covers not only the economic sector entities, but also suppliers of goods and services necessary for the manufacturing process. This analysis is based on M. Porter's proposed methodology, which dealt with all the production process from raw materials to its submission to the consumer;

3. Single product (item) competitiveness setting.   Analyzing the individual competitiveness of entity by using the product volumes produced in the economy and in the branch in the average production;

4. The environment performance assessment.   These can include special industry operating environment assumptions, and using competitiveness ratings of the country as an economic unit. The latest study provides an illustration of aggregate living standards, foreign trade, labor force potential, infrastructure conditions and other indicators that show how develop the environment formed in a specific industry. One or more separate entities does not create competitive advantage, therefore, external environmental factors are very important. Increasingly, the use of indicators that reflect innovation, information and communication technology level of education and the relationship between economic sectors.

After the examining methodologies of competitiveness evaluation in Table 4, it was determined that key indicators can be divided into the following groups:

    1) measurement ratios of competitive advantage,
    2) profitability ratios,
    3) the level of state aid governing ratios.

The main task of research was to determine which economic sector may have a competitive advantage and build up the country's competitiveness The authors concluded that economy competitiveness is determined by structure of economic entities in manufacturing production, the behavior of market and adaptation to a changing competitive environment conditions. Therefore, it can be assumed the necessity for adequate selection of indicators, exactly reflecting the formation of competitive advantage opportunities.

In order to assess fully the economic competitiveness of each subsystem (the country's economy, industry, economy entity, etc.), it is necessary to select the most appropriate indicators reflecting the nature of their activity. Analysis of indicators for competitiveness evaluation can be identified by parameters for each group-specific (Table 4).

Table 4: Competitiveness evaluation indicators (Source: compiled by authors)

Group of indicators	Name of indicator	The index value
Assessment of national competitiveness	1) intense competition index (S,) (Assessing the Competitiveness 2000; Competitiveness factors 2003)	The higher the indicator, the stronger competitive position among the countries in surveyed sectors of the economy
	2) international competitiveness branch index (RW) (Assessing the Competitiveness 2000; Competitiveness factors 2003)	Industry has s a profit when the index value greater than 0.
	comparative advantage index (RCA,) (Assessing the Competitiveness 2000; Competitiveness factors 2003)	Indicates whether the industry is able to establish itself in the market better than the other branches.
Economic evaluation of competitiveness clusters	1) M. Porter Diamond model (Портер 2000)	
	2) OPERA method (Lithuanian industry competitiveness 2000)	Identifies the key problems of industry competitiveness and makes proposals to deal with them
	3) SWOT analysis (Lithuanian industry competitiveness 2000)	Identify clusters strengths, weaknesses and opportunities threats.
Competitiveness assessment of particular product	1) integral performance index (Ij) (Моисеев, Анискин 1993)	The higher it is, the more product is competitive compared with competitors
	2) competitiveness index (Ikj) (Моисеев, Анискин 1993)	If it is greater than 1, the product is more competitive than the prototype, if equal to 1 - is identical to the prototype, if less than 1 - uncompetitive
Assessment of operational environmental	Market share figures: 1) the degree of concentration of manufacturing industry (CR) (Яковлев 1990)	Estimation of the concentration of manufacturing industry. The higher it is - the stronger the concentration
	2) Herfindal index (H) (Яковлев 1990)	If the index value exceeds the 1800 limit - the state must intervene in the market to normalize relations
	3) Rozenbliut index (IR) (Яковлев 1990)	Sets the ranks of the entity
	Competition intensity indicators: 1) the market shares of competitors similarities evaluation (UD)	What kind of market share from competitors, occupies an economic entity
	2) The coefficient of variation (V) (Boguslauskas 1999)	The higher rate, the lower the intensity of competition
	Market growth rate indicator: 1) market growth rate (UAT) (Закутина 2003)	Down in the growth rate range (70 and 140 percent.), Which can be shared on competition intensity indicator values
	Market profitability indicators: 1) market profitability index (RR) (Закутина 2003)	The higher it is, the higher the profit share of the relevant market has a pending economic sector
	2) competition intensity index (UR) (Иванов 1980)	
	3) Lerner monopoly power index (L) (Иванов 1980)	The higher it is, the stronger the economic entity market power and the less it is dependent on its competitors, suppliers, customers and so on.

It is widely used to measure competitiveness scorecard by Clara AL, Porter ME, Schwob K. (2005), under which the parties are assigned into two groups: an innovative and non-innovative. Innovative countries are those countries where the most of entities are registered. In these countries are evaluated technologies and the level of development in addition. Analysing the indicators and significance of them, it was found that for the full evaluation of competitiveness it is important to calculate and evaluate all indicators. It is visible that in the groups of indicators are dominating the competitive advantage indicators (RW, RCA), profitability ratios (market growth, market profitability index) and state aid level indicator (Herfindal index, index at Lerner). Each subsystem has its own economic characteristics and specifications, and for preparing the competitiveness evaluation indicators subsystem, it is necessary to take into account the accumulated amount of information and the quality and depth of the competitiveness assessment.

4. Economical sustainability aspects in business competitiveness

When organizations dedicates itself to sustainable development, it is actually enhancing its competitiveness for the future when resource efficient economies will be presented with more opportunities and be in a more advantageous position with respect to market competition. Economical sustainability recently has received growing attention and became an increasingly popular research area. Today business is getting the new challenges in meeting with financial crisis and changes in prices, the growing public interest in ecology and business also are going to ensure environmental sustainability and energy efficiency. And we can agree that business competitiveness is a key of economical sustainability.

Sustainable competitive advantage is a key concept in strategy practice and research, because of the intended result of sustainable competitive advantage is persistent superior economic performance (Baaij *et al.* 2004). Sustainability has restrictions on the implementation of its practices, apart from government decisions, there are other restrains on sustainability approach, in this field – despite its multidisciplinary character – cannot replace other non-sustainable initiatives, because the relation involving demand and supply goes beyond any perspective of sustainability, due to the modus operandi of societies as a whole (Novais *et al.* 2012). Since sustainability issues should be analysed and solved on the system levels where they develop and manifest themselves, one can consistently formulate respective aims of the sustainable development policy for separate dimensions (economic, ecological, social, and institutional) of sustainable development on each of these levels of economic development policy, thus obtaining the matrix of the aims of sustainability policy (Čiegis *et al.* 2009).

Bartelmus (2003) conclude that economic sustainability keeps the total value of produced and non-produced, natural capital intact-allowing for the consumption of fixed and natural capital, and ecological sustainability, which aims at 'dematerialization' of economic activity; the objective is to reduce material throughput through the economy and its pressure on nature's carrying capacities. Grodach (2011) find that six key barriers – a conventional economic development mindset, incentive-based practice, a lack of resources, ad hoc planning, inter- regional competition, and a lack of coordinated regional planning – impede sustainable economic development in the region.

Bertinelli *et al*. (2012) find that once the optimal scrapping age of technologies is reached, an economy may achieve two possible cases of sustainable development, one in which pollution falls and another in which it stabilizes, or a catastrophic outcome, where environmental quality reaches its lower bound. The relationship between growth and pollution is studied by Bertinelli *et al*. (2012) through a vintage capital model, where new technologies are more environmentally friendly.

The outcome will depend on the path of countries' investment and their propensity to innovate in environmentally clean technologies, both of which are likely to differ across economies. Bertinelli *et al.* (2012) conclude that empirical results using long time series for a number of developed and developing countries indeed confirm heterogenous experiences in the pollution-output relationship.

Specifically, technology-based design efforts, as opposed to design more broadly defined, best enable the designers' capabilities to accumulate and gives them sustained advantages, because of the cumulative nature of technology progress, technology-based design is most valuable for sustaining economic growth (Luo *et al.* 2012). Luo *et al.* (2012) analysis first identified that the cumulative nature of technology based design has important strategic value for sustaining long – term economic growth, economic growth will be sustained when a country's future success can accumulatively build on its prior achievements and expertise. And Luo *et al.* (2012) argue that, countries (such as Singapore, China) striving to sustain knowledge-based economic growth should focus the innovation policies on technology-based design and building national capabilities for such design.

Committee on Singapore's Competitiveness (1998) made the report in response to the regional economic crisis at that time, and to achieve sustained growth, the report recommends the following: (1) Reduce business costs, to help viable companies tide over the crisis and minimize unemployment. (2) Ensure that the framework for economic activity continues to function effectively. (3) Maintain investor confidence. (4) Step up capability-building and economic restructuring. (5) Further expand trade with growth markets in the developed countries and seek out new markets beyond the region. (6) Leverage on market opportunities in regional economies to form strategic partnerships.

County economy is developing rapidly, meanwhile, there are serious problems existed, such as over-consumption of resources, devastation of the environment, and degradation of ecology, which hinder the sustainable development of the county economy seriously, thus, designing a set of index system for assessing sustainable development of county economy to save natural resources, prevent environmental deterioration and coordinate the sustainable development of county economy and environment has been the point of economical development (Peng *et al.* 2011). Sustainable development of county economy is very complex in content, seeks to maintenance the mutual harmony between man and nature, and requires the development of economics, society, resources, and environment, which is a comprehensive large-scale system, objectives are: county economy and the capacity of sustainable development increase; economic restructuring has achieved remarkable results; the total population has been effectively controlled; the quality is improved significantly; promote harmony between man and nature; promote the development of the whole society onto the production and living well off the road of civilized development (Peng *et al.* 2011).

Peng et al. conclude that it is quite beneficial to realize the main factors affecting county economic development and the characteristics of economic development in different counties, for their combination plays an important role in upgrading the comprehensive competitiveness of the county economy and adopting the suitable way to sustainable development of county economy. Generally speaking, there are six factors: 1) Natural and Local Advantages. 2) Human Resources. 3) Industry and Enterprise Competitiveness. 4) History and Culture. 5) Government's initiative and management. 6) Interactions (Peng *et al.* 2011). Issues of sustainable development of county economy (Peng *et al.* 2011), mainly are the increasingly serious resource and environmental problems in the traditional concept of development, these problems are mainly in the following areas (Peng *et al.* 2011):

- more and more prominent contradictions between shortage of resources and population growth and economic development emerge;
- the pollution exerts more and more pressure to sustainable development;

- the deteriorating of the ecological environment has a bad effect on human living environment.

For a better environment business and countries governments need to achieve economic sustainability and only mobilizing forces we can achieve this. Sustainable development of business economy is complicated in the content, and this requires the development of large network system: economics, community, resources, technology, environment, ecology.

5. Conclusions

It should be supplemented the competitive advantage concept, by including the advantages of comparative, absolute and effective activity. Only interaction of these advantages ensures competitive advantages. Advantage of effective performance includes production efficiency, innovation and mutual compatibility of entity fields, efficient enterprise management, entrepreneurship of entity and so on. Scientific literature research gives the conclusion that the comparative and absolute advantage theory can be applied to different levels of economic systems, both for individual entity and for the industry, both at regional or at national level.

The study founded that in the assessment of competitiveness of industry can be used only a portion of the methodologies and indicators, and all the benefits of the evaluation methodology can't be used due to lack of data. The scientific and practical literature that describes the analysis of the competitiveness mainly discusses such competitiveness assessment methodologies and models: M. Porter's "diamond" model, the World Bank methodology, the methodology of the European Committee, the New Zealand Research, Ministry of Science and Technology methodology, Local resource cost method, Lithuania's economy Institute methodology. Our research, and experience of evaluation and other researchers suggests that for retrospective assessment about the information on economic competitiveness can be used the following indicators: intense competition index (S); international competitiveness index (RW); comparative advantage index (RCA); market growth rate (UAT); market profitability index (RR); for analysis of the competitiveness factors influence is used the correlation-regression analysis.

The management of business and countries need to mobilize forces trying to achieve the appropriate environmental conditions for economic sustainability. This requires the development of large network system: economics, community, resources, technology, environment, ecology. When organizations dedicates itself to sustainable development, it is actually enhancing its competitiveness for the future when resource efficient economies will be presented with more opportunities and be in a more advantageous position with respect to market competition.

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