

UNIVERSITY OF MISKOLC
Faculty of Economics
Institute of Management Science

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THE MODEL OF CORPORATE COMPETITIVENESS
as a new method for measuring corporate competitiveness

Theses of the PhD dissertation

Miskolc, 2009

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1. REASONS OF CHOOSING RESEARCH THEME

I began research work as a PhD student at the University of Miskolc, Institute of Management Science. Initially I focused my research to Balanced Scorecard; later on I turned to the theme of competitiveness.

There were *several reasons* of changing my scientific interest.

1. Before an organisation creates its strategy, it should be aware of what to set into the centre of the strategy: so it needs diagnosis that defines the problem needs to be solved, and the symptoms can be managed through this diagnosis – *but Balanced Scorecard is not eligible for diagnostic purposes.*
2. For organisations, finding the appropriate strategy means as a great problem as executing the strategy. So I had to find a diagnostic method that highlights the weak points of an organisation – *but from what point of view is the weak point weak?* At that point the idea came to examine organisations from competitiveness point of view, I identify their weak points from competitiveness approach, and the already identified weak points can be managed through constructing and executing a Balanced Scorecard.
3. So I began to study the literature of competitiveness in order to come to know the methods of examining and measuring corporate competitiveness. I could see that though several experts and pieces of literature deal with corporate competitiveness, *measuring corporate competitiveness is not an often studied matter.* This fact drew my attention to the possibility of researching a new field different from my earlier work: the research of methods measuring corporate competitiveness.
4. Last but not least, one of the reasons of changing my scientific interest was the following: *nowadays more and more scientific and practical attention is paid to competitiveness* that proves the actuality of my research.

2. RESEARCH AIM

After finalising the research theme – the research of methods measuring corporate competitiveness –, I defined the aim of my research work.

The final aim of my research work is constructing a model eligible for measuring corporate competitiveness for SMEs appearing in markets with independent end-product, and the model should reflect the competitiveness of the examined company through an index. The model – through its structure – should also explain the causes why the company achieved the given competitiveness value, and should also highlight the weak points from competitiveness point of view that needs to be developed.

I achieved the final aim of the research through a series of aim; *the elements of this series* are the following:

1. *Studying the literature of competitiveness as a concept, analytical comparison of conceptual approaches.* I found important to study and compare conceptual approaches because it gave me help to come to know the competitiveness definitions and approaches of experts and organisations, and I could decide if I agree with their approaches or not.
2. *Composing the levels and definition of competitiveness I can accept.* Partly by literature, partly by the opinions formed in my mind, I composed what competitiveness levels I can accept, and how I define competitiveness at those levels. My purpose with this step was to create scientific definitions.
3. *Studying and analytical comparison of the methods and models of measuring competitiveness.* By studying the already existing methods and models, I could decide if their certain elements, connections or methodological approaches could be applied or not when constructing a new model eligible for measuring corporate competitiveness.
4. *Requirements of the model constructed through the research.* Through the already existing methods and my own opinion, I composed some methodological and technical requirements that a model eligible for measuring corporate competitiveness should meet.
5. *Constructing the new model.* After accomplishing the above-mentioned aims, I had the possibility to fulfil the final aim of the research work: constructing the new model.

3. THE STRUCTURE OF THE DISSERTATION

Corresponding to the above-mentioned series of aims, the structure of the dissertation is the following.

The dissertation consists of three parts.

Part I is the summary of literature consisting of three chapters.

Chapter 1 contains conceptual approaches of corporate competitiveness in literature, and their analytical comparison.

Chapter 2 describes the already existing methods and models of measuring corporate competitiveness, and also contains their analytical comparison.

Chapter 3 contains my statements and conclusions based on the summary of literature.

Part II describes the process of composing the new methodology for measuring corporate competitiveness. This part consists of four chapters.

Chapter 4 explains the necessity of creating a new model.

Chapter 5 presents the application conditions and fields of the model.

Chapter 6 describes the process of creating the model and the structure of the model.

Chapter 7 gives an example for demonstrating the application of a model and the process of calculating the value of the complex index that measures corporate competitiveness numerically.

In *Part III*, I completed the verification of the model: I examined if the model is eligible for measuring corporate competitiveness.

I demonstrate the methods applied in the different chapters when I present the methodology applied during the research work.

4. THE PROCESS AND METHODOLOGY OF THE RESEARCH

I present the research process and the methodology applied during each phase parallel with each other.

The **first step** of the research was the examination of competitiveness literature.

In Chapter 1 when examining conceptual approaches of corporate competitiveness, I prepared *the analysis of the approaches besides describing them*:

- I presented how the concept of corporate competitiveness formed, developed, broadened from time to time;
- I analysed the debates among some experts and organisations: who agree with whom and who does not agree with the other from the point of view of interpreting the concept of competitiveness;
- I compared how experts and organisations developed the competitiveness definitions composed earlier by themselves or others;
- and finally I prepared an analytical table that compares the competitiveness definitions used by expert and organisations by several aspects.

In Chapter 2 *I presented the methods and models measuring corporate competitiveness*, and *I prepared their analytical comparison* by several aspects.

In Chapter 3, *I summarised my statements and conclusions based on the summary of literature* (some of them will be later presented as theses); and *I composed the competitiveness levels and definitions I can accept*.

I compared these competitiveness definitions with literature: I summarised in which parts the approaches of experts and organisations differ from my approaches and in which parts they correspond with each other; and with which elements I broadened the approaches found in literature.

The **second step** of the research was the composition of the Model of Corporate Competitiveness (VVM – a Vállalati Versenyképesség Modellje).

In Chapter 4, I detailed *the factors that explain the necessity of a new model*; these factors can be summarised as follows:

- the imperfections of the already existing models;
- the modified market circumstances, the new economy, the new competition;
- the transformed parameters of corporate competitiveness.

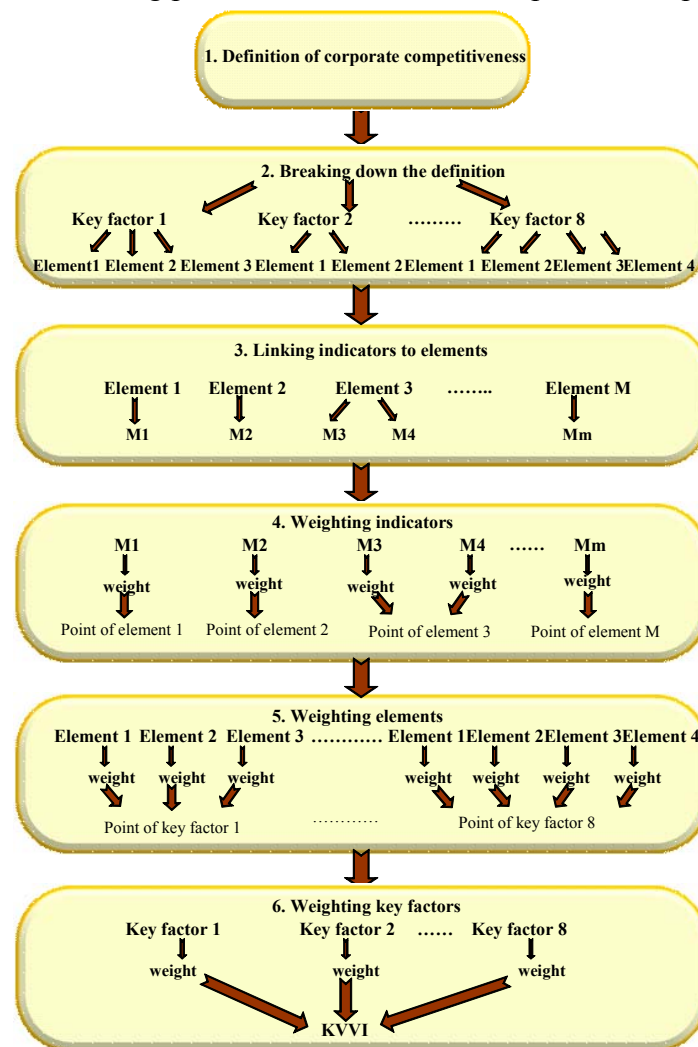
In Chapter 5, I summarised *the application conditions and fields of the model*:

- I composed the methodological and technical requirements that my model needs to meet;
- I clarified who can apply the model: I composed it for SMEs who appear in markets with independent end-product;
- I described the application fields of the model: it can be applied for internal and external aims as well.

Chapter 6 contains *the process of constructing the model and describes the structure of the model*.

The vein of thinking of constructing the model can be summarised in the following steps:

Figure 1: Constructing process of the Model of Corporate Competitiveness



Source: the author's own construction

The first step was creating the definition of corporate competitiveness.

As a second step, I identified the main elements, the key factors¹ of the definition, and then I broke down the key factors into competitiveness elements.

I linked indicators to the competitiveness elements, and scales to the indicators, so the indicators and elements became measurable.

Then I linked weights to the indicators; with their help, I calculated the points of the elements.

Through weights linked to the element, I calculated the points of the key factors.

Finally linking weights to the key factors, the value of the complex index (KVVI – Komplex Vállalati Versenyképességi Index, Complex Corporate Competitiveness Index (CCCI)) was calculated.

The structure of the Model of Corporate Competitiveness will be described later as one of my theses.

In Chapter 7, I give an example for demonstrating the application of a model and the process of calculating the value of the complex index that measures corporate competitiveness numerically.

For calculating the complex index (KVVI – Komplex Vállalati Versenyképességi Index, Complex Corporate Competitiveness Index (CCCI)), *I prepared a questionnaire that companies need to fill.* Through the questionnaire, I collected data for the indicators of the model but the actor who fills the questionnaire is not aware the structure of the model.

I filled this questionnaire in the name of a fictive company so I could show the process of calculating the complex index.

The **third step** of the research was the verification of the Model of Corporate Competitiveness.

In Chapter 8, I explained the necessity of verification. The verification was needed because modelling corporate competitiveness is a so-called ill-structured problem from the point of view of problem solving, and ill-structured problems – owing to their characteristics – can have more proper solutions; and these proper solutions can comprise the model I prepared. So the examination based on expert questionnaire was to prove the adequacy of my model.

Chapter 9 describes *the verification: the examination based on expert questionnaire.*

The examination had several aims:

- first to prove that I chose the appropriate key factors during composing the competitiveness definition, so to examine the effect of key factors on corporate competitiveness;
- second to confirm that I grouped competitiveness elements to appropriate key elements, so to state the effect of competitiveness elements on key factors;

¹ Key elements mean the main parts of my competitiveness definition, and are not the same as the key success factors can be used for an industry.

- third to examine the direction and extent the competitiveness elements have on corporate competitiveness through key factors, so to rate the strength of effect of competitiveness elements on key factors;
- and fourth to state which competitiveness elements influence corporate competitiveness the most, so to examine the relative importance of the competitiveness elements.

To be able to answer for the above-mentioned first three questions, I used *expert survey* methodology by preparing *a questionnaire*.

For getting answers for the fourth question, I applied *the Guilford technique*. I prepared a *questionnaire* and *instructions for use* for the experts. When evaluating the result, I performed *statistical examinations* to confirm the reliability of the results.

5. THE NEW FINDINGS OF THE RESEARCH

I grouped the new findings of the research as follows:

1. Hypotheses and theses relating to the concept of corporate competitiveness
2. Hypotheses and theses relating to the already existing and applied methods measuring corporate competitiveness
3. Hypotheses and theses relating to the model measuring corporate competitiveness constructed due to the research

1. Hypotheses and theses relating to the concept of corporate competitiveness

Before beginning the research and at the early phase of the research, I noticed that the concept of competitiveness – though it is one of the most often mentioned expressions nowadays – is not definite: one cannot find a worldwide accepted definition in literature. The word is often used as “there were an unspoken professional agreement” (Török, 2003b:73) of how the concept is interpreted but it does not work so in reality. There is no agreement on what competitiveness means; sometimes it is used as a synonym of modernity, sometimes as an indicator of the standard of an economy or a company, and sometimes it is interpreted as market performance, business success or economic growth.

I found numerous definitions when examining literature of competitiveness but these definitions are mostly used only by individuals and did not become worldwide known and accepted. The great number of concepts is partly owing to the fact that there is no agreement in literature either on what level or levels competitiveness can be accepted: some authors stress that they can accept competitiveness at only one aggregation level while others can accept it at more levels.

To be able to confirm my hypothesis, I examined the different approaches of corporate competitiveness, and prepared a comparative-analytical table. By the help of the table, I examined numerous approaches of experts and organisations according to several aspects².

By the analysis, the notices made before and at the beginning of the research are verified, so I summarize the confirmed notices as thesis as follows:

T1: The concept of competitiveness is not definite and amorphous from scientific point of view: the scientific definition of *the content and levels* of competitiveness is missing, and the scientific description of the *definition* of competitiveness is also missing.

² Because of its size, I am not able to show this comparative-analytical table here; but it can be seen in the dissertation.

The next step of my research was examining the levels of competitiveness that could be acceptable in literature.

As it can be seen in the dissertation, in the chapter examining the conceptual approaches of competitiveness, some authors consider competitiveness at the level of a product acceptable; in the following, I summarise briefly how these authors interpret competitiveness at the level of a product, and I comment if I agree with the interpretations in some parts or not.

- József Botos wrote in one of his earlier work published in 1982 that “the international competitiveness of a product is manifested in the following areas:
 - the price of the product is lower than the price of its competitors (also taking the conditions and mode of payment into consideration),
 - the quality of the product is better, its technical standard is higher than those of its competitors,
 - the delivery service is better and more advantageous than that of its competitors.

A certain good can be considered as competitive if it is better than its competitors at least at two of the above-mentioned three areas. One single area, even if it is more favourable than that of its competitors, is not able to assure steady competitiveness for the product in international trade if the result of the other two comparisons is unfavourable for the product” (Botos, 1982:32-33).

I agree with taking price and quality into account but taking the utility value of the product into consideration is missing from this approach; and I do not consider grounded that if any two of the three criteria is fulfilled, the product is competitive. Let’s suppose that the price of the product is lower than that of its competitors and the delivery service is better and more advantageous than that of its competitors but the quality of the product is much lower than the quality of the competitors; is the product effectively competitive?

- According to Ferenc Kozma, that product is competitive whose effective profitability is not lower than the expected profitability (Kozma, 1995:1); and “that product is competitive for the company whose terms of trade are more favourable than the company average, and in the per unit factor consumption, it has greater advantage in comparison with levels remunerated by market price than the other products of the company” (Kozma, 1995:3).

Both definitions are rather unilateral: they highlight profitability (that is though an important factor but not the only factor that should be taken into account), representing the consumption side is completely missing.

- In one of the latest work of Botos, published in 2000, the lacking utility value concept appears; according to Botos, the competitiveness of a product “implies negotiability – the product is needed, it has a market, it can be sold at all –, the price competitiveness

and the cost competitiveness. ... A product or service should than meet the requirements of both price and cost competitiveness” (Botos, 2000:218-219).

I can agree with this approach in distinguishing negotiability and price competitiveness; but the defining the ranking of negotiability – price competitiveness – cost competitiveness is still missing.

- Márk Bató has similar view concerning the market competitiveness of a product or service: “a product or service is competitive, ... if on the one hand, it can be sold at a price that besides covering expenses, yields profit for its seller, it can be realised as ‘exchange value’, and on the other hand, it can be considered as a consumable, employable, as a product or service in its physical appearance useable, a with ‘utility value’ disposing and at acceptable price available good for its buyer who has the satisfactory purchasing power” [Bató in (Szentes, 2005:112)].

My acceptable approach is broader than the above-mentioned because on the consumption side, the characteristics of the utility value – acceptable quality – acceptable price should appear in this order.

When constructing the definition as I interpret product competitiveness, I took the following elements into consideration.

The competitiveness of a product (or service; hereafter: product) is a “bilateral” concept:

- For the consumer, it means that the product satisfies the consumer’s needs (so the product has utility value), its quality is acceptable and its price is fair. In my opinion, these conditions should be accomplished in the above-mentioned order, since if a product has no utility value for a consumer (for example an ash tray for a non-smoker), no good quality and no low price makes the consumer buy the product. The similar vein of thinking can be shown in the case when a product with utility value (for example a television set) has such a bad quality that not even the low price convinces the consumer to buy the product.
- For the company that is the manufacturer (or the seller) of the product, a product is competitive if there is steady demand for it, and it can be sold at a higher price than its cost of production (or net cost), so the product is negotiable while yielding profit.

In my opinion, these two “sides” should be fulfilled at the same time for a product could be considered competitive.

One can often find the expression of stand the ground on markets when examining competitiveness of a company; this expression can be applied also for products: a product can be considered competitive if it stands its ground at market among the other similar products with its utility value, quality and price level, so it maintains or increases its market share whilst the profit of the product is steady or growing.

According to the above-mentioned facts, I interpret the competitiveness of a product as follows:

T2a: Competitive is a product³ that:

- **has utility value, acceptable quality and fair price/value ratio in this order for its consumer; and**
- **assumes expected level of profit for its manufacturer (or seller) owing to its negotiability; and**
- **maintains or increases market share among other similar products on the market while the profit of the product is steady or growing.**

Studying literature, I noticed that competitiveness at corporate level could be accepted for some authors though the content of the approaches substantially differed from each other; through the following brief summary, one can get an insight into these different interpretations.

When defining corporate competitiveness, several authors emphasise the importance of products:

- Ferenc Kozma says that corporate competitiveness “is aggregated from the competitiveness of the individual goods”; “a company is competitive if its goods are competitive, i.e. if it yields not less than the expected profit for its total output” (Kozma, 1995:3);
- according to Ádám Török, “the source of competitiveness derives mainly from the higher level of specialisation, and the product differentiation that suits better to demand than other companies do” (Török, 1999b:31-35);
- the opinion of József Botos is that “the basis of each and every level of competitiveness is the competitiveness at product level” (Botos, 2000:218-219);
- in the definition composed by Márk Bató, one can find the competitiveness of products: “the competitiveness of a company means all above that ... it is able to ... produce competitive products, services continuously” [Bató in (Szentes, 2005:113)].

The changing ability of a company appears in the definition of corporate competitiveness composed by Attila Chikán in 2004: “the company should be able to perceive changes in its environment and inside the company and should be able to adapt to them” (Chikán–Czakó–Kazainé, 2006b:9).

Standing the ground on markets, the ability to stay in competition appears in numerous times in literature as a synonym of competitiveness; some examples:

³ Hereafter the word „product” has the meaning of not an individual product but in a broader sense: meaning a product portfolio, and also implies services and service portfolios.

- Ádám Török states that “competitiveness at micro level means getting positions in market competition, and standing ground on markets among certain companies, the competitors of each other” (Török, 1999a:74) [quotes (Lengyel, 2000c:970)];
- Imre Lengyel conceptualises as follows: “competitiveness of companies briefly explicated means that they have enough capacity to be able to stand ground in competition...” (Lengyel, 2003:257);
- according to Márk Bató, “corporate competitiveness means the standing ground on markets from several point of view, and the ability to stay in competition” [Bató in (Szentes, 2005:113)];
- Zsuzsanna Vörös interprets corporate competitiveness as the successful performance in market competition (Vörös, 2007:17).

The importance of taking the corporate resources into consideration is emphasised by the definition composed by Attila Chikán and colleagues in 2004; this definition “is composed according to the concepts of the resource-based corporate theory ... that means that the success of a company depends on its own resources that are not or only hardly copyable. These resources mean potential for success but realising success can only be possible through adequately chosen and executed strategy. It forces companies to steadily reproduce features and resources that assure competitive advantages ...” (Chikán, 2006a:44).

Before composing my definition for corporate competitiveness, I collected the features that came into my mind when I hear the concept of competitive company.

In “everyday life”, one consider a company competitive if it is present on markets for a long time and operates profitably; maintains or increases its market share; is able to perceive changes in its environment and inside the company and is able to react them, maybe it expects changes; it applies modern technique during producing or selling products; its resources make the company possible to keep its market position and ability to react changes; it produces or sells product that has a demand.

In my opinion, products are necessary to be represented in connection with corporate competitiveness because companies are “weighted” on markets through products, and in lack of products, one can not talk about corporate competitiveness.

Besides the above-mentioned features, one can observe the bilateral nature of corporate competitiveness in two ways:

- the first side is producing or selling products that fulfil demand, the other side is the profit and market position that should be assured for the company;
- on the one side, competitiveness appears as a result, as the success in competition, on the other side, competitiveness means the ability for standing the ground in markets in the future.

This bilateral nature can also be found in literature in the work of Ferenc Kozma (Kozma, 1995:1).

I composed the definition of corporate competitiveness in such a way and with such a purpose that the measurement method based on the definition should be able to measure corporate competitiveness of companies operating under the circumstances of new economy⁴.

Taking the above-mentioned features and factors into consideration, I interpret corporate competitiveness as follows:

T2b: Competitive is a company that

- **produces or sells competitive products as described above;**
- **steadily realises profit⁵;**
- **its market share is constant or growing at present markets, and gains market position at the redistributed markets in the new market segments and maintains or increases it;**
- **is able to perceive in the external and internal environment befallen or assumable changes, and is able to react them proactively or reactively;**
- **disposes of resources of enough quantity and quality to standing the ground on markets: maintaining or increasing its market share and profitability;**
- **is able to cooperation, internationalisation with the purpose of market expansion, market integration;**
- **can be able to maintain its market position and ability to react changes in the future as well through its product portfolio and its material and immaterial resources.**

2. Hypotheses and theses relating to the already existing and applied methods measuring corporate competitiveness

Studying the measuring methods of competitiveness, I initially examined the measurement of competitiveness at national, regional and corporate levels.

I recognised even at the beginning of this examining process that the methodology of measuring competitiveness is wide-ranging – similarly to the conceptual approaches of competitiveness. This diversity can partly be owing to the fact that there is no scientific agreement in literature of which level or levels are accepted as levels of competitiveness; and as measurement methodology is strongly related to the accepted level of competitiveness, one can find considerable differences between methods measuring competitiveness.

⁴ I mention the main characteristics and the importance of the new economy in connection with hypothesis and thesis 4.

⁵ When defining profit, I agree with Attila Chikán: "... from the point of view of our topic, there is no importance how 'profit' is interpreted – the only requirement is that the revenues of the company should steadily exceed its expenses" (Chikán, 2008:7).

In international and national literature, one can find models for measuring *corporate competitiveness* that:

- lists the factors that influence the competitiveness of a company; or
- gives help to define some considerable factor of corporate competitiveness; or
- gives feedback of internal factors that hinder the efficient operation and development of an organisation; or
- is not eligible for measuring competition in the new economy; or
- is still not complete, the exact preparation of the set of indicators of factors that influence competitiveness is still missing; or
- groups companies into categories but does not give a numerical value for the competitiveness of the given company, and does not give any explanation why the given company belongs to the given category, which are its strong or weak points.

I gave a detailed description of the measuring methods in the dissertation; and I prepared a comparative-analytical table – similarly to the table in connection with conceptual approaches⁶.

The analysis by several aspects confirms the notions that emerged in me at the beginning of the examination so I can compose them as thesis as follows:

T3: Methodology of measuring corporate competitiveness is not standard: methodology is considerable influenced by the actor measuring competitiveness, the conceptual approach of competitiveness of the actor, the aim of the measurement, the application fields of the measurement results.

After getting known the methods measuring competitiveness, I turned my attention to measuring competitiveness at corporate level – especially with measuring competitiveness of SMEs – as I supposed this field can give me more possibilities to research.

Studying measurement methods, I came to the conclusion that the great majority of the already existing models and methods serves for measuring competitiveness of national and regional competitiveness; international and national methodological literature on methods measuring competitiveness at corporate level is rather modest.

Most of the few models do not measure corporate competitiveness numerically; they “only” try to identify the factors that can influence the competitiveness of a company. So the examine competitiveness but do not measure it.

In the dissertation, I gave a detailed description of the already existing models that measure competitiveness; their weak points can be summarised as follows:

⁶ This comparative-analytical table is also can be seen in the dissertation.

- a) the Porter model does not give an exact answer whether a company competitive or not, it “only” list the facts that influence the competitiveness of a company;
- b) the Porter model developed by a Hungarian professor, Hoványi is expanded by ratios and values; this model has two groups of problems: on the one hand, it has measuring problems (the annual marketing costs or R&D costs of the competitors can be hardly known for a company), on the other hand, one cannot get the answer whether the company is competitive or not;
- c) the Hoványi model on the one hand, introduces a method that contains a set of formulae defining some considerable factors of corporate competitiveness, and on the other hand, enumerates management methods successful companies increased their competitiveness with during the past years, but does not introduce a method that could help measuring the competitiveness of a company;
- d) the starting point of the CDP® (Corporate Development Process) is one single factor: productivity that can be raised by the commitment of workers so this method gives feedback of internal factors that hinder the efficient operation and development of an organisation;
- e) the Corporate Competitiveness Index (Vállalati Versenyképességi Index) created by Attila Chikán and colleagues eliminates the above-mentioned problem of not giving a numerical value of the competitiveness of accompany. This competitiveness index has a weak point: as its structure and main idea was prepared many years ago, it is not eligible for measuring competition in the new economy emerged by changes in world economy in the past years;
- f) the new competitiveness model created by Zsolt Gyuris, is still not complete, the exact preparation of the set of indicators of factors that influence competitiveness is still missing;
- g) the Competitiveness Index composed during the Complex South Danubian Regional Competitiveness Research (Komplex Dél-Dunántúli Regionális Versenyképességi Kutatás) groups companies into categories but does not give a numerical value for the competitiveness of the given company, and does not rank the examined companies; the method – according to its published description – does not give any explanation why the given company belongs to the given category, so it does not explain which are the strong or weak points of the company; so the method serves solely for external purposes: it rather examines the competitiveness of the given region through categorising the companies operating in the given region (the title of one of the published papers of the method also refers to this fact (Márkus et al., 2008)).

Furthermore, it can be stated that the already existing models measuring corporate competitiveness – besides the above-mentioned weaknesses – are not adapted to the features of the new economy, and do not measure adequately the competitiveness factors that are getting a more and more important role under the new circumstances.

Based on these weaknesses, I consider confirmed that a new model measuring corporate competitiveness with a numerical value is needed to construct.

I summarise my statements as a thesis as follows:

T4: The at present existing methods measuring corporate competitiveness are not eligible for measuring the competitiveness of SMEs as the methods are *imperfect*: on the one hand, most of the methods do not measure competitiveness, only examine it, on the other hand, they do not adapt to the features of the new economy and to the transformed parameters of corporate competitiveness. By these arguments, the need of constructing a new model measuring competitiveness of SMEs with a numerical value is *verified*.

3. Hypotheses and theses relating to the model measuring corporate competitiveness constructed due to the research

After recognising the need of a new model, the next phase was the process of its construction.

1. The first step was the creating of the definition of corporate competitiveness.
2. As a second step, I identified the key factors of the definition, and then I broke down the key factors into competitiveness elements.
The key factors of the definition are typed in bold.

Competitive is a company that

- produces or sells **competitive products** as described above;
- **steadily** realises **profit**;
- its **market share** is constant or growing at present markets, and gains market position at the redistributed markets in the new market segments and maintains or increases it;
- is able to **perceive** in the external and internal environment befallen or assumable **changes**, and is able to **react them** proactively or reactively;
- disposes of **resources** of enough quantity and quality to standing the ground on markets: maintaining or increasing its market share and profitability;
- is able to **cooperation, internationalisation** with the purpose of market expansion, market integration;
- can be able to maintain its market position and ability to react changes **in the future** as well through its product portfolio and its material and immaterial resources.

I broke down the marked key factors into competitiveness elements; I have no possibility to describe all the elements but they are summarised in a figure with the abbreviations of indicators linked to each element (Figure 2).

3. I linked indicators to the competitiveness elements, and scales to the indicators, so the indicators and elements became measurable.

The indicators applied in the model cannot be described here in details but Figure 2 summarised the content of the Model of Corporate Competitiveness (a Vállalati Versenyképesség Modellje (VVM)): its structure, key factors, elements and the quantity of indicators related each element (indicators are represented by their abbreviations).

Indicators were evaluated by scales; its description also cannot be here in details. The vein of thinking and the process of evaluating through scales was the following:

- I prepared a questionnaire the help of which the Complex Corporate Competitiveness Index (Komplex Vállalati Versenyképességi Index – KKVI) of a company can be calculated with;
- in the questionnaire, I inquired the values of indicators at the given company;
- as some of the answers can be given in percentage, some others in an absolute sum, and some that can be chosen from given answers, I transformed the answers of the filled questionnaire to a 0-5 scale so the values of the answers became summable.

4. Then I linked weights to the indicators; with their help, I calculated the points of the elements.

Every indicator got an equal, a unity weight in the model.

5. Through weights linked to the element, I calculated the points of the key factors.

I had the same vein of thinking by weighting elements as before: every indicator got equal, a unity weight in the model.

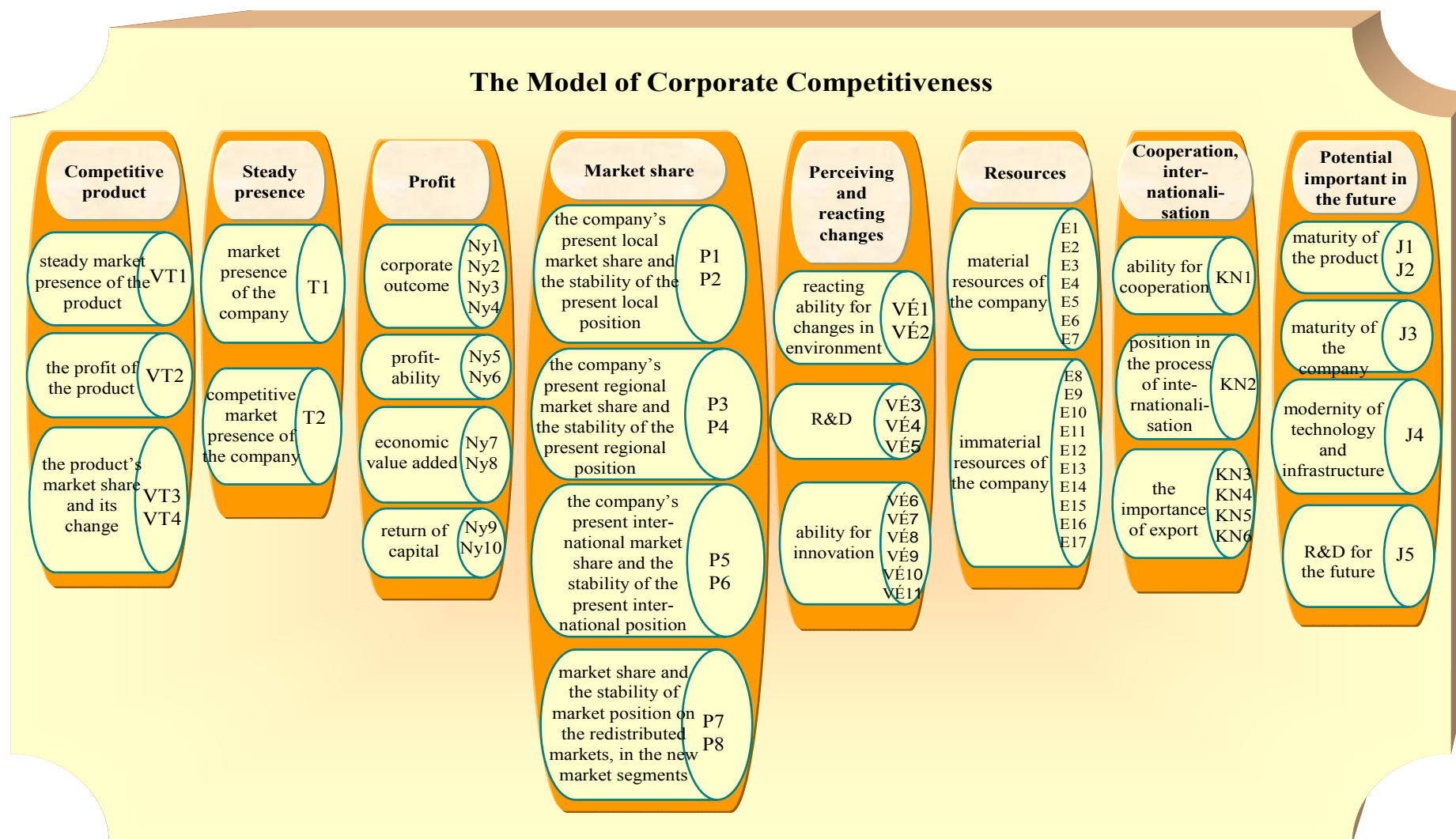
6. By linking equal – unity – weights to the key factors, the value of the complex index (Complex Corporate Competitiveness Index (CCCI), KCVI – Komplex Vállalati Versenyképességi Index) was calculated.

The Model of Corporate Competitiveness can be summarised in numbers as follows:

- The model interprets 8 competitiveness *key factors*.
- The key factors are broken down into competitiveness *elements*: 25 elements altogether; these are measurable by altogether 63 *indicators*.

The maximum point a company can obtain through the indicators is 1000; the ratio of the obtained and maximum points gives the value of the Complex Corporate Competitiveness Index of the company.

Figure 2: The structure of the Model of Corporate Competitiveness – key factors, elements and the quantity of indicators



Source: the author's own construction

After constructing the model, I accomplished the verification of the model based on an expert questionnaire.

The examination is on the one hand confirmed that the model consisting of elements and key factors deduced from my competitiveness definition is eligible for measuring corporate competitiveness.

I can give the following answers to the questions composed as the aims of the examination:

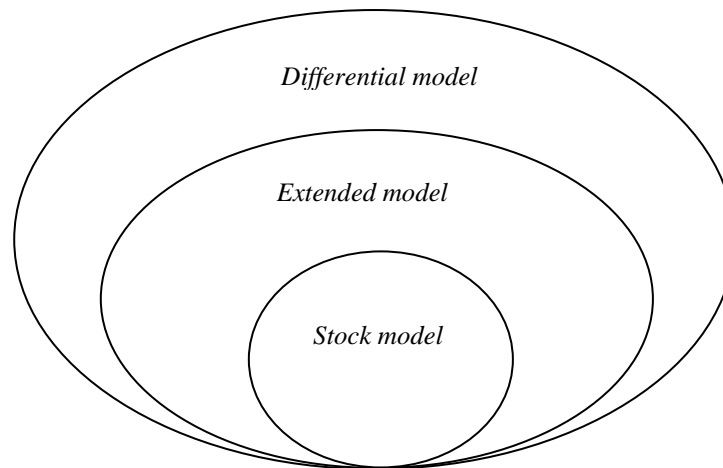
- *I chose the appropriate key factors* when constructing the competitiveness definition and deducing the model; this statement is confirmed by the followings:
 - the summarising row of the evaluation table of key factors does not contain zero or extremely low value; and all the values of the summarising row are positive which fact means accordingly to the given evaluation aspects that all the key factors increase corporate competitiveness so their presence in the model is verified;
 - one can find competitiveness elements related to each key factor that definitely strongly influence corporate competitiveness through the given key factor.
- I can state about the connection of competitiveness elements and key factors that I classified the great majority of the elements into the same key factors as the expert did so *the structure of the model is exact*, only a slight modification can be considered.
- I can state about the effect of competitiveness elements on corporate competitiveness that *the chosen competitiveness elements increase corporate competitiveness* as every element disposes of a positive total of points.

As the other consequence of the examination, I can accept various model structures of the Model of Corporate Competitiveness according to the strength of the effect the competitiveness elements have on corporate competitiveness.

- By employing elements that increase corporate competitiveness considerably according to the results of the expert questionnaire, the *stock model* of the Model of Corporate Competitiveness can be constructed. This stock model were serve for a complex short analysis:
 - for complex analysis because it covers several fields of corporate operation; and
 - for short analysis as it contains the elements that should be in any case taken into account when examining corporate competitiveness.
- *The extended version of the model* also contains the elements that have a great effect on corporate competitiveness.
- By employing all the competitiveness elements, a *differential model* with a broad set of elements can be constructed that could make the results of the short analysis more precise.

The schematic picture of these model structures can be seen on the following figure.

Figure 3: The possible model structures of the Model of Corporate Competitiveness



Source: the author's own construction

I summarise my experiences of the verification as follows:

T5a: The construction process of the Model of Corporate Competitiveness by its phases of breaking down and integration is methodologically eligible for preparing a new model measuring competitiveness at corporate level: the model originates from the complex definition of corporate competitiveness, and the breaking down of the definition into key factors, competitiveness elements and indicators, and the integration of the weighted indicators, competitiveness elements and indicators ensures stable methodological fundamentals for the model.

T5b: The Model of Corporate Competitiveness is eligible for measuring competitiveness of SMEs. With the help the definition of corporate competitiveness that serves for a base of the key factors, with the elements deducted from key factors, and with the indicators linked to competitiveness elements, the competitiveness of a company can be measured numerically by the Complex Corporate Competitiveness Index.

T5c: Grouping the competitiveness elements by the strength of effect they have on corporate competitiveness, provides the opportunity to construct three types of model structures: the stock model, the extended model and the differential model; each model structure enables a complex but differently detailed analysis.

The last field of examination aims of the verification – examining the relative importance of the competitiveness elements – is also eligible for drawing conclusions.

The experts involved in filling the questionnaire could give their opinions on which elements they consider to have the strongest influence on corporate competitiveness through the method of Guilford's pair-wise comparison.

As the result of the expert questionnaire, I can draw the conclusion that the elements ‘profitability’, ‘ability for innovation’, ‘R&D for the future’ and ‘reacting ability for changes in environment’ have the strongest influence on corporate competitiveness; while the elements ‘market presence of the company’, ‘maturity of the product’ and ‘importance of export’ (the ratio of export activity) considered to have had the slightest effect on corporate competitiveness.

According to the opinions of the experts, I can summarise the order of elements as one of the conclusions of the research as follows:

T6: According to the opinion of the experts involved in the questionnaire, the elements ‘profitability’, ‘ability for innovation’, ‘R&D for the future’ and ‘reacting ability for changes in environment’ have the strongest influence on corporate competitiveness out of the elements of the Model of Corporate Competitiveness; while the elements ‘market presence of the company’, ‘maturity of the product’ and ‘importance of export’ (the ratio of export activity) considered to have had the slightest effect on corporate competitiveness.

When talking about the application of the model, I have to make clear what type of organisations it is constructed for and what kind of aims it can be applied for.

As I have already mentioned earlier, the model is prepared for SMEs appearing in markets with independent end-product: it serves for defining their competitiveness status and highlighting fields that need development.

Regarding the aims of the model, it can be applied for both internal and external aims.

- For *internal aims* because:
 - besides calculating a numerical value of the company’s competitiveness, it also gives explanation which factors led the company to have achieved the certain value (→ in order to encourage corporate learning);
 - and it also highlights the weak fields that needs development besides giving a numerical value of the corporate competitiveness (→ in order to encourage corporate learning as well).
- For *external aims* because:
 - the model is also eligible for comparing companies (→ for example it can be an indicator by tenders or supporting, or by comparing subsidiaries, or for investors’ evaluations in order to find the most advantageous investment).

For demonstrating the application of the Model of Corporate Competitiveness for internal aims, I calculated the Complex Corporate Competitiveness Index for a fictive company; these values can be found in Table 1.

By the help of the Complex Corporate Competitiveness Index, the level of competitiveness can be defined. In my opinion:

- till a result of 40%, the competitiveness of a company can be considered as weak;
- between 40-60%, the competitiveness of a company is modest;
- the result of 60-80% can be qualified as a good outcome of competitiveness; while
- the result of 80-100% can be considered as an excellent result.

According to the model, I can state that the result of the fictive company (45%) is considered to be modest.

After defining the level of competitiveness, the next step is improving it. The obtained points by key factors and their ratios to the maximum points can give help in defining fields that need development.

This latter ratio refers namely to the extent the company obtained the points related to the given key factor. By which key factor this ratio is low that key factor needs development.

In the example, the fictive company should pay more attention to key factors 'Market share', 'Cooperation, internationalisation' and 'Competitive product'.

One can make further examinations within a given key factor that aims at defining competitiveness element(s) and indicator(s) that need development in favour of increasing the competitiveness of the company.

The experiences of the application of the model can summarised as follows:

T7: The Model of Corporate Competitiveness serves for defining competitiveness status of SMEs appearing in markets with independent end-product. The model encourages corporate learning as besides measuring corporate competitiveness numerically, it gives explanation which factors led the company to have achieved the certain value, and it highlights fields that need development.

The model is also eligible for comparing companies, for example it can be an indicator by tenders or supporting, or by comparing subsidiaries, or for investors' evaluations in order to find the most advantageous investment and can also be applied by defining supporting directions of regions, by preparing customised support types.

Table 1: Example for calculating the Complex Corporate Competitiveness Index in case of a fictive company

The Model of Corporate Competitiveness							
Competitive product	Steady presence	Profit	Market share	Perceiving and reacting changes	Resources	Cooperation, inter-nationalisation	Potential important in the future
VT1: 3/5	T1: 5/5	Ny1: 3/5	P1: 4/5	VÉ1: 3/5	E1: 1/5	KN1: 3/5	J1: 14/20
VT2: 17/25	T2: 5/5	Ny2: 4/5	P2: 16/25	VÉ2: 3/5	E2: 3/5	KN2: 2/5	J2: 15/20
VT3: 12/25		Ny3: 3/5	P3: 5/25	VÉ3: 5/5	E3: 2/5	KN3: 1/5	J3: 5/5
VT4: 20/125		Ny4: 4/5	P4: 20/125	VÉ4: 4/5	E4: 4/5	KN4: 5/25	J4: 3/5
		Ny5: 4/5	P5: 8/25	VÉ5: 1/5	E5: 3/5	KN5: 2/5	J5: 4/5
		Ny6: 3/5	P6: 31/125	VÉ6: 5/5	E6: 3/5	KN6: 7/25	
		Ny7: 3/5	P7: 3/25	VÉ7: 4/5	E7: 3/5		
		Ny8: 4/5	P8: 11/125	VÉ8: 3/5	E8: 4/5		
		Ny9: 2/5		VÉ9: 3/5	E9: 2/5		
		Ny10: 3/5		VÉ10: 3/5	E10: 0/5		
				VÉ11: 3/5	E11: 5/5		
					E12: 4/5		
					E13: 4/15		
					E14: 0/5		
					E15: 4/5		
					E16: 1/5		
					E17: 10/10		
Ratio of the obtained and the maximum points by key factors:							
52/180 = 0,2888	10/10 = 1,0000	33/50 = 0,6667	98/480 = 0,2041	37/55 = 0,6727	53/100 = 0,5300	20/70 = 0,2857	41/55 = 0,7454
Re-calculated points by key factors:							
36,11	125,00	82,50	25,52	83,33	66,25	32,69	93,18
RATIO OF THE OBTAINED AND THE MAXIMUM POINTS FOR ALL KEY FACTORS (= KKVI):							
544,58/1000 = 0,5445							

Source: the author's own construction

6. APPLICATION FIELDS OF THE RESULTS OF THE RESEARCH

The results of the research can be applied in theoretical and practical fields as well.

Theoretical application *encourages the internal development of scientific* because the research

- draws attention to conceptual imperfectness and the lack of scientific definition in connection with competitiveness;
- composes new, complex competitiveness definitions for the competitiveness of a product and competitiveness for a company;
- offers a new, complex methodology for measuring corporate competitiveness.

The results of the research can also be applied *in education*.

During practical application, the results of the research can *encourage the development of SMEs and the whole economy* because

- the final aim of the research, the Model of Corporate Competitiveness encourages corporate learning because besides calculating a numerical value of the company's competitiveness, it also gives explanation: which factors led the company to have achieved the certain value, and it highlights the weak fields that needs development;
- the model is also eligible for comparing companies, for example it can be an indicator by tenders or supporting, or by comparing subsidiaries, or for investors' evaluations in order to find the most advantageous investment;
- and it can also be applicable by defining supporting directions of regions, by preparing customised support types.

7. POSSIBLE DIRECTIONS OF EXTENDING RESEARCH

I consider several ways for extending the research.

1. The presently general Model of Corporate Competitiveness could be specified by industries: the structure of the model, and the weighting and evaluating of indicators, competitiveness elements and key factors could be modified according to industry-specialised characteristics.

Through this specialisation one could compare the companies of a given industry from the point of view of competitiveness.

2. One could examine a considerable sample of companies from the point of view of competitiveness through the Model of Corporate Competitiveness.

3. Methodological extending could be the verification of the model with the help of discriminant analysis.

For reliable results of statistical analysis, one should need a considerable sample of companies, so binding this methodological extending with the above-mentioned competitiveness analysis, two research aims could be realised at the same time.

REFERENCES

- Botos, J.* (1982): Nemzetközi versenyképesség és árforradalom, KJK, Budapest
- Botos, J.* (2000): Versenyképesség elemzés: fogalmi körüljárás, hazai esélyek; Farkas B. – Lengyel I. (szerk.): 2000: Versenyképesség – regionális versenyképesség; SZTE Gazdaságtudományi Kar Közlemények, JATEPress; Szeged, 218-234.
- Chikán, A.* (2006a): A vállalati versenyképesség mérése – Egy versenyképességi index és alkalmazása; Pénzügyi Szemle, 2006/1.; 42-56.
- Chikán, A. – Czakó, E. – Kazainé Ónodi, A.* (2006b): Gazdasági versenyképességünk vállalati nézőpontból – Versenyben a világgal 2004-2006 kutatási program; Zárótanulmány, december
- Chikán, A.* (2008): Vállalati versenyképesség és társadalmi felelősség; Harvard Business Review, november; 6-13.
- Gyuris, Zs.* (2007): kísérlet egy új versenyképességi modell kialakítására; OTDK-dolgozat
- Hoványi, G.* (1999): A vállalati versenyképesség makrogazdasági és globális háttere – Michael Porter két modelljének továbbfejlesztése; Közgazdasági Szemle, XLVI. évf., november; 1013-1029.
- Kozma, F.* (1995): Gondolatok a versenyképességről; Ipar-gazdaság, március-április; 1-8.
- Lengyel, I.* (2000c): A regionális versenyképességről; Közgazdasági Szemle, XLVII. évf., december; 962-987.
- Lengyel, I.* (2003): Verseny és területi fejlődés: térségek versenyképessége Magyarországon, JATEPress, Szeged
- Márkus, G. – Pótó, Zs. – Zsibók, Zs. – Soós, J. – Schmuck, R. – Duczon, Á.* (*Márkus et al.*) (2008): A mikroszintű regionális versenyképesség mérése; Vállalkozás és Innováció 2. évfolyam, 1. szám, I. negyedév 30-53.; vallalkozasesinnovacio.hu/application/editorial/12/01markus.pdf; a letöltés időpontja: 2008. november 15.
- Porter, M. E.* (1990): The Competitive Advantage of Nations. New York, The Free Press
- Porter, M. E.* (1993): Versenysztratégia. Akadémiai Kiadó, Budapest

Porter, M. E. (1998): On Competition. Harvard Business Review Book, Boston

Schmuck, R. (2008): Vállalati versenyképesség mérése; MTA IX. Osztály Ipar- és Vállalatgazdasági Bizottság, Nemzeti Fejlesztési és Gazdasági Minisztérium, Szegedi Tudományegyetem Gazdaságtudományi Kar, MTA Szegedi Területi Bizottság, Gazdaságtudományi Szakbizottság: A gazdasági környezet és a vállalati stratégiák; A IX. Ipar- és Vállalatgazdasági konferencia előadásai; Szeged, október 30-31.; 108-115.

Szentes, T. és munkaközössége (2005): Fejlődés, versenyképesség, globalizáció. Akadémiai Kiadó, Budapest

Török, Á. (1999a): A versenyképesség és a technológiamenedzsment. Megjelent: Inzelt Annamária (szerk.): Bevezetés az innováció-menedzsmentbe. Műszaki Könyvkiadó, Budapest; 74–95.

Török, Á. (1999b): Verseny a versenyképességért? Bevezetés a mikroszféra-kezelés gazdaságpolitikájába az Európai Unióban és Magyarországon. Miniszterelnöki Hivatal Integrációs Stratégiai Munkacsoportja, Budapest

Török, Á. (2003b): Mit mérünk mivel? A versenyképesség értelmezéséről és mérési problémáiról. EU-csatlakozás és versenyképesség. Európai Tükör Műhelytanulmányok 93. Miniszterelnöki Hivatal Kormányzati Stratégiai Elemző Központ, Budapest; 73-106.

Vörös, Zs. (2007): Milyen eszközökkel javítható egy vállalat versenyképessége? Elemzés és ötletek a MÁV Zrt. személyszállítási üzletágának (SZÜ) működése alapján; Vezetéstudomány, XXXVIII. évf. 1. sz.; 16-24.

www.global-production.com

PUBLICATIONS

Scientific publications

Versenyképesség a szakirodalomban – a fogalmi megközelítések összegzése és elemzése II.; Vezetéstudomány, 2009. XL. évf. 5. sz. 41-52.

A Vállalati Versenyképesség Modellje (VVM) mint a vállalati versenyképesség mérésének új módszere; a Miskolci Egyetem Gazdaságtudományi Karának volt Ipargazdaságtan Tanszéke fennállásának 50. évfordulója alkalmából kiadott jubileumi kiadvány: Vezetési ismeretek II. – Tanulmányok a Vezetéstudományi Intézet munkatársaitól 114-125.; ISBN 978-963-661-886-5, ISBN 978-963-661-888-9.

Versenyképesség a szakirodalomban – a fogalmi megközelítések összegzése és elemzése I.; Vezetéstudomány, 2009. XL. évf. 4. sz. 54-64.

How to measure competitiveness at corporate level?: International Conference Competitiveness&European Integration; Babes-Bolyai University, Cluj-Napoca, Romania; 26-28 October, 2007; Proceedings of Management Section pp 239-244.

A vállalati versenyképesség mérésére szolgáló módszerek elemzése. In: VI. Nemzetközi Konferencia. A közgazdász képzés megkezdésének 20. évfordulója alkalmából. Miskolci Egyetem Gazdaságtudományi Kar. Miskolc-Lillafüred, 2007. október 10-11. II. kötet 237-244. p.

Comparative Analysis of Competitiveness Measuring Methods: 6th International Symposium “Economy&Business 2007”; ISBN 978-954-9368-27-7; Bourgas, Bulgaria 2007.

Methods Measuring Competitiveness at Corporate Level; 6th International Conference of PhD Students; University of Miskolc, 12-18 August, 2007. Economics II. pp. 737-742.

A versenyképesség mérésére szolgáló módszerek összehasonlító elemzése. XVIII. OTDK Közgazdaságtudományi Szekció, Doktoranduszok Konferenciája; Miskolci Egyetem. Miskolc, 2007. április 25-27.

Az innovatív szervezetek kutatási program. Balanced Scorecard alkalmazás. Társsz.: Szintay I. In: Innovációmenedzsment kutatás és gyakorlat. Innovatív szervezetek. Miskolci Egyetem Innovációmenedzsment Kooperációs Kutatási Központ. 2007. 29-36. p.

Balanced Scorecard és controlling. Filozófia és/vagy menedzsmenteszköz a szervezetek vezetésében. Vezetéstudomány. 2006. különszám. 69-78. p.

Connection of Strategic Planning and Balanced Scorecard; 4th International Conference of PhD Students; University of Miskolc, 11-17 August, 2003. Economics I. pp. 251-255.

A Balanced Scorecard pénzügyi nézőpontját alkotó mutatószámok keretrendszere. II. Országos Közgazdaságtudományi Doktorandusz Konferencia: Magyarország az Európai Unió küszöbén – nemzetközi és regionális kihívások; Miskolc-Lillafüred, 2003. május 26-28. 407-415. p.

Connection of Strategic Planning and Performance Measurement; EDAMBA 6th International Science Conference within European System in Doctoral Education; Nové Zámky, Slovakia; 11 April, 2003.

Teljesítményértékelési módszerek összehasonlítása: a BSC és a RAVE; Doktoranduszok Fóruma, 2002. november 6., Miskolci Egyetem Gazdaságtudományi Kar Szekciókiadványa 61-65. p.

Comparison of Performance Measurement Methods; Workshop for Young Researchers: Application of Management Theory in Practice; Department of Management at the Faculty of Business Administration in Kosice, Slovakia; ISBN 80 225 1557 4; Kosice, 14 June, 2002.

A Balanced Scorecard felépítésében lévő különbségek profitorientált és nonprofit szervezetek esetében. I. Országos Közgazdaságtudományi Doktorandusz Konferencia. Budapest, 2002. március 22-23.

Presentation of a Balanced Scorecard-Application in Service Sector with the Help of a Case Study. microCad International Computer Conference. Miskolc, 2002. március 7-8. 99-104. p.

A Balanced Scorecard alkalmazhatóságának lehetőségei a szolgáltatási szektorban. In: Doktoranduszok Fóruma. Miskolc, 2001. november 6. Miskolci Egyetem Gazdaságtudományi Kar szekciókiadványa. ME ITTC. 2002. 83-86. p.

Educational publications

Vállalatirányítás c. tárgy oktatási segédlete a Gépészmérnöki és Informatikai Kar levelező tagozatos hallgatói számára. 2008.

Controlling alapjai tárgyak tematikáinak kidolgozása Képzési szakasszisztens és Gazdálkodási menedzser asszisztens OKJ-s képzések részére. 2007.

Forgatókönyv-írás. Fejezet a „Gyémántok csiszolása – Képzés – Vállalkozás” c. tananyagban. Miskolci Egyetem Gazdaságtudományi Kar. PHARE HU0105-03-01-0028. 1-96. p. 2003.

Forgatókönyv-adaptáció. Társsz.: Majoros K.; Fejezet a „Gyémántok csiszolása – Képzés – Vállalkozás” c. tananyagban. Miskolci Egyetem Gazdaságtudományi Kar. PHARE HU0105-03-01-0028. 1-140. p. 2003.

Urbán R.: Vállalatirányítás I. Gyakorlati segédlet (Szerk.: Lates V. – Somogyi M.); Miskolc, ME Gazdaságtudományi Kar. Vezetéstudományi Intézet 2003. 10 p.

Bíró Z. – Szakály D.: Menedzsment ismeretek. II. Gyakorlati segédlet (Szerk.: Csépes O. – Nagy N. – Somogyi M.); Miskolc, ME Gazdaságtudományi Kar Vezetéstudományi Intézet 2003. 56 p.