

**METHODOLOGY PROPOSAL OF SLOVAK INDUSTRIAL
ENTERPRISE MANAGERS' COMPETENC IN THE SUSTAINABLE
DEVELOPMENT CONTEXT**

Lukáš JURÍK, Peter SAKÁL

SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA,
FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY IN TRNAVA,
INSTITUTE OF INDUSTRIAL ENGINEERING AND MANAGEMENT,
ULICA JÁNA BOTTU 2781/25, 917 24 TRNAVA, SLOVAK REPUBLIC
e-mail: lukas.jurik@stuba.sk, peter.sakal@stuba.sk

Abstract

The contribution is focused on the area of the design of Slovak industrial enterprise managers' competency model. The main objective of the contribution is a methodology proposal of the Slovak industrial enterprise employees' competency model utilising the Analytic Hierarchy Process method within the Sustainable Development context. Methodology was developed on the basis of the theoretical backgrounds analysis and the actual state of designing a competency model in the industrial enterprises analysis.

Key words

competencies, competency model, Analytic Hierarchy Process, Sustainable Development

INTRODUCTION

According to Drábek (2012), political, economic, social, ecological, moral and other manifestations of the global crisis development has highlighted the question of the relevance of the current neoliberal model of capitalism, which, for 350 years, has constituted to the basic paradigm of development of the prevalent part of global society. However, many representatives of the academic and business sphere call for a change in the “current system”. The idea of the necessity of developing new principles of developing the management systems and the formation of the new paradigm of strategic management corresponding to the contemporary tendencies of the world economy development has gradually appeared in the minds of most of top managers (Stead, J.G., Stead, W.E., 2012).

Industrial enterprises are the most important of all the factors in the current economy of society. The only way the world can achieve the fulfilment of the principles of sustainable development (SD) is that global enterprises will join the philosophy and principles of SD. A real change will require new values and new ways of thinking. This, however, will require that

industrial enterprises undergo the radical transformation of the transition to a new model of entrepreneurship which is based on principle and criteria of sustainable development and “win-win” strategy or “games with nonzero sum”. According to this strategy, industrial enterprises should focus more on contributing to the quality of life in the wider community, and they should create structures, processes and production with the aim to meet the social, ecological and economic needs of people, whose lives are affected. To basic factors of the environment, which have been noticed by managers in recent years, belong the impact of products and services to the world community and the environment (Stead, J.G., Stead, W.E., 2012).

Basic problems that are in contradiction to the SD principles in industrial enterprises are as follows (Haluška, 2011, Staněk, Ivanová, 2016, Steingart, 2008, Švihlíková, 2015):

- *Plundering of nature and natural resources.*
- *Pollution of the environment.*
- *Poverty, homelessness, working poverty is increasing in developed countries - decreases real wages (decreases the size of the middle layer), labour productivity growth is not reflected in wage growth, it is big difference between the wages of ordinary employees and the wages of top managers.*
- *Tax evasion, unbalanced tax mix (cost outsourcing, socialization of losses).*
- *The lack of basic business ethics leads to the prioritization of one-time deals aimed at robbing the other party (strategy “win-lose”).*

For the conditions of industrial enterprises. Several concepts which supported sustainable development (SD) and corporate social responsibility (CSR) are potentially available. In the current contribution, concept Sustainable Corporate Social Responsibility, Creating Sustainable Shared Value, concept Humanistic Economy, Bhutanese Development Concept and National Quality Programme of the Slovak Republic for the years 2017 – 2021 will be described in more details (Jurík, 2017).

Human capital currently plays the key role in the economic and social development. In recent years, education and training have become the most important factors for the economic and social development of human society. However, the importance of human capital has always been influenced by the development of human society (Staněk, Ivanová, 2016).

Traditional education in business area for many years mistakenly informs managers that their decisions are carried out in a closed economic system which operates independently from the social environment. Since the role of society and nature is ignored, the managers are taught that physical laws of the universe, natural processes and cycles and even social values and conditions do not affect their organizational decisions (Stead, J.G., Stead, W.E., 2012).

Disregard of the role of society and the environment eventually has led managers to the assumption that the economy can grow indefinitely without serious social and ecological consequences. These facts suggest that managers nowadays need a new insight into the role played by industrial enterprises in society and ecosystem. According to Steads (2012), the sustainability is the key value and a basis for sustainable development, which will ensure good jobs for residents of the Earth planet, and simultaneously it protects and enhances the environment and culture. According to the authors of the contribution, the changes in the business principles in contemporary society require the change of profiles of managers and their competencies, which represent an assumption for fulfilment of the activities directed towards sustainable development of industrial enterprises.

The importance of the human factor keeps increasing in connection with the transformation to sustainable development and sustainable corporate social responsibility.

Based on the theory of social learning in the organizational environment, managers and leaders influence the behaviour of their subordinates through their own example and pattern. And therefore, managers are key people on the way to sustainability in enterprises.

The basis for a successful transformation from the strategy of unlimited economic growth to strategies of sustainable development sustainable corporate social responsibility in industrial enterprises is necessary to change the employee's competency models. In the development of competency models, it the social, environmental and economic criteria will be used.

QUESTIONNAIRE SURVEY – SUSTAINABLE CORPORATE SOCIAL RESPONSIBILITY No. 7

The current state in the field of developing the Slovak industrial enterprise managers' competency model utilising AHP method in the Sustainable Development context was assessed using the questionnaire of Sustainable Corporate Social Responsibility No. 7 and the results of analyses obtained from the dissertation thesis “Methodology proposal of the Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context”.

The authors of the contribution conducted the analysis of the application of competency approach in the context of sustainable development in industrial enterprises in Slovakia at the Institute of Industrial Engineering and Management, Faculty of Materials Science and Technology in Trnava, Slovak University of Technology in Bratislava through a questionnaire survey of “Sustainable Corporate Social Responsibility No. 7”.

The questionnaire of “Sustainable Corporate Social Responsibility No. 7” was designed by two PhD. students dealing with the following areas arising from the issue of sustainable corporate social responsibility:

- 1. Identification questions.**
- 2. Sustainable marketing strategy of the enterprise.**
- 3. Competency approach of human resource management.**

On the basis of intense study and associated experience, each PhD. student involved in the questionnaire development, prepared a set of relevant questions related to a specific area of research. The questionnaire of “Sustainable Corporate Social Responsibility No. 7” was made using the Google Drive application, where individual questions were structured into the three above mentioned areas. The questionnaire survey was conducted in the time period from 19 November 2015 to 26 February 2016. The size of the questions database was determined based on the size of the basic set. According to the data from the Statistical Office of the Slovak Republic of 31 October 2015, the authors considered 15974 industrial enterprises as the basic set of the survey. The research sample represented 361 industrial enterprises. By 26 February 2016, 134 respondents completed the questionnaire, which simultaneously constitutes the return rate of 37.12%. For the research purposes, the authors of the contribution will only work with the responses from 75 industrial enterprises which participated in the questionnaire survey. In this contribution, the authors will discuss only the results of the third area – the competency approach of human resource management.

For the purposes of the contribution, selected research questions are discussed in the next section.

RESULTS OF THE QUESTIONNAIRE SURVEY

The question “Do you apply a competency approach of human resource management in your enterprise?” was responded by 55% who stated that they apply a competency approach of human resource management. As much as 25% of enterprises stated that they do not apply a competency approach of human resource management, and 20% of enterprises were unable to answer this question (Fig. 1).

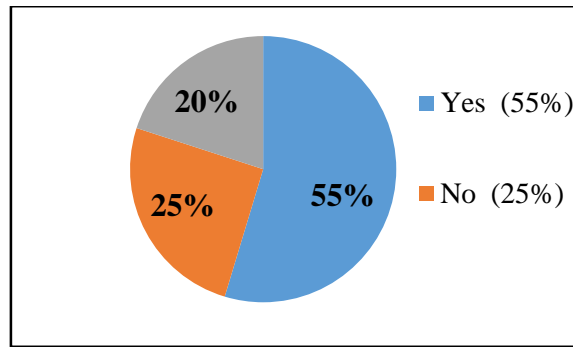


Fig. 1 The answers to the question: Do you apply a competency approach of human resource management in your enterprise? source: own elaboration according to (Jurík, 2017)

As for the question “Do you have an elaborated methodology for the creation of competency models in your enterprise?” 15% of respondents stated that they elaborated methodology to develop the competency models in their enterprise. As much as 64% of respondents reported that they did not have an elaborated methodology of developing competency models in their enterprise (Fig. 2).

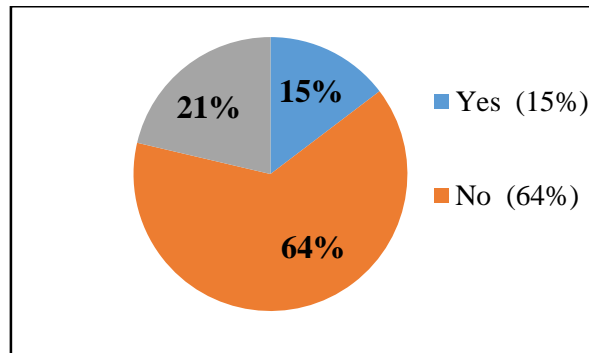


Fig. 2 The answers to the question: Do you have an elaborated methodology for the creation of competency models in your enterprise? source: own elaboration according to (Jurík, 2017)

The question “Do you think that the competencies from your competency models contribute to the sustainable development of your enterprise?” was responded by 35% of respondents who think that the competencies from their competency models contribute to the sustainable development of their enterprise. As much as 49% of respondents answered that the competencies from their competency models do not contribute to the sustainable development of their enterprise (Fig. 3).

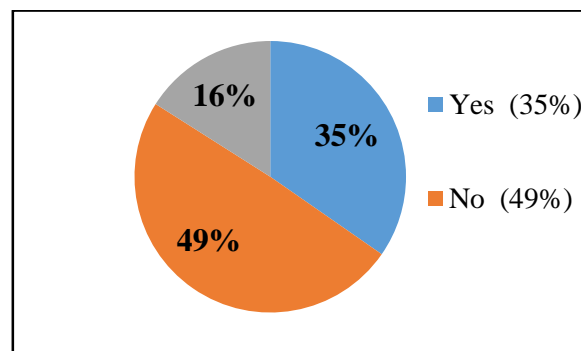


Fig. 3 The answers to the question: Do you think that the competencies from your competency models contribute to the sustainable development of your enterprise? source: own elaboration according to (Jurík, 2017)

Based on the analysis of the theoretical background and the analysis of the current state of building the competency model in industrial enterprises, we submitted the following proposal.

METHODOLOGY PROPOSAL OF THE SLOVAK INDUSTRIAL ENTERPRISE MANAGERS' COMPETENCY MODEL OF UTILISING THE AHP METHOD IN THE SUSTAINABLE DEVELOPMENT CONTEXT

Design of the methodology of competency model was based on the following concepts:

1. *Concept Humanistic Economy (CHE)* (Haluška, 2010, Haluška, 2011, Haluška, 2015).
2. *Sustainable Corporate Social Responsibility (SCSR)* (Hrdinová, 2013).
3. *Creating sustainable shared value (CSSV)* (Šmida, 2015).
4. *Bhutanese Development Concept (BDC)* (Centre for Bhutan Studies & GNH Research, 2016, Gross National Happiness, 2016).
5. *Industry 4.0* (Staněk, Ivanová, 2016).
6. *National Quality Programme of the Slovak Republic (NQP)* (Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2016).

These concepts directly supported the building of sustainable development in industrial enterprises.

Methodology of building a competency model of managers within the industrial enterprises in Slovakia by using the Analytic Hierarchy Process (AHP) method in the context of Sustainable Development consists of the following steps (Fig. 4) (Jurík, 2017):

1. **Decision of owners or top management about building a competency model.** Before doing so, top management adopts a public commitment to adopt an enterprise's SD strategy or to adopt SD values and criteria into corporate culture. At this stage, owners or top management should have clear ideas about the benefits of building a competency model and what its meaning will be.
2. **Assessing the existence of a competency model in an enterprise.** Before the process of building a competency model based on the SD criteria, it is necessary to find out whether there is a competency model in enterprise, whether it is being used and what its purpose is, and whether the competency model is built based on the corporate values. It is important to assess whether individual competencies contribute to the business, quality of life, working environment and society.
3. **Defining the objective, purpose and use of the competency model in an enterprise.** Before building a competency model, owners and top management must clarify and define:
 - a) Objective of building a competency model.
 - b) Reasons and needs of applying the competency model.
 - c) A unified tool for selecting, developing and evaluating suitable managers.
 - d) Improved performance in the sense of SD.
 - e) Change in managers' behaviour according to the SD principles and criteria.
4. **Choosing a competency model development approach.** When developing a competency model, an enterprise will have the following options for accessing the development of a competency model on the basis of the SD criteria:
 - a) **Prescriptive approach.** In this approach, the company takes over the ready-made model available on the market. We recommend this approach if the enterprise does not have strategy of SD, enterprise has no anchored SD principles, elements, and criteria in corporate culture.

- b) **Tailor-made approach.** This approach identifies behavioural manifestations that most closely correlate with the principles and criteria of the SD. The approach requires a thorough analysis of the entire business, the conditions in which it operates, and a detailed overview of each job position.
 - c) **Combined approach.** It is simply a combination of the previous two approaches. The existing competency model can be implemented in a specific enterprise and modified to its environment regarding its specific conditions.
5. **Building a project team.** The project team should consist of the employees (internal or external) who will be responsible for implementing and using the model. Team members must know the issue of human resource management, development of competency model, sustainable development and other concepts. The role of the project leader is to defend the process and gain support from the internal and external business environment. A top management member (ideally a director of the human resources department) should be the project leader or he/she should be responsible for the project.
 6. **Specifying sustainability values.** The proposed set of values, along with standards and attitudes, is an inherent part of the established corporate culture. In our opinion, it is important that the corporate culture in the enterprise is built on the principles and criteria of the SD and the below-mentioned concepts: Sustainable Corporate Social Responsibility (SCSR), Creating sustainable shared value (CSSV), concept of Humanistic Economy (CHE), Bhutanese Development Concept (BDC) and National Quality Programme of the Slovak Republic for the years 2017 – 2021 (NQP) and Industry 4.0. The principles of sustainability represent overriding value that should be supported by a set of ethical values concerning the desired behavioural patterns and the desired ending state. We consider it appropriate for the responsible management subjects in the enterprises (the business owners themselves, the top management of the enterprise, the internal team composed of employees at different hierarchical levels) before specifying a set of specific sustainable criteria (which are: criterion of "**Sustainable Quality of Work**", criterion of "**Sustainable Quality of Life**" and criterion of "Sustainable Quality of Production (Products and Services)" for the process of creating competency models of managers in industrial enterprises will determine current values in an enterprise. The process of specification of professed values, also expressed in the Sustainable Personnel Strategy (SPS), will enable them to define in advance the values of their business. We recommend that they then specify the specific sustainable criteria for the process of building competence models of managers in industrial enterprises.
 7. **Identifying different levels of sustainable performance.** When compiling competency models, it is necessary to determine the levels of achieved performance, but also in what way the level of performance has been reached. The way of achieving performance and the behaviour of managers in the process of achievement is analysed.
 8. **Defining and describing competencies.** The basic goal of this phase is to define the characteristics of competencies to reflect accurately and comprehensibly the behaviour and expressions of competencies. It is also necessary to clearly define the proposed competency and create a scale for its evaluation.
 9. **Assessing the compliance competency model with the strategy of SD enterprise, vision of SD enterprise and mission of SD enterprise.** In assessing the compliance of the competency model with the strategy of SD enterprise, vision of SD enterprise, mission of SD enterprise and sustainable HR strategy and enterprise culture, each competency is compared with the values and objectives contained in these individual documents. If an enterprise does not have strategy of the SD enterprise, it has the SD principles and criteria included in corporate culture or in other organizational standards, this assessment can be done according to these standards. We assume that the enterprise (its owners, top

management) make decision to build a "sustainable competency model" before the enterprise defines the strategy of SD enterprise. In such a case, an enterprise will have to compare individual competencies with the generally accepted SD criteria and principles.

10. **Building a new sustainable competency model or reworking the original competency model (using Analytic Hierarchy Process).** The process of building a new "sustainable competency model" or reworking the original one is of the utmost importance in terms of promoting sustainable development in the enterprise. And therefore, we propose to build a "sustainable competency model" that will be developed on the basis of sustainable development criteria. In creating a sustainable competency model, we will use the Analytic Hierarchy Process method, where input criteria will be the criteria from the concepts supporting sustainable development in industrial enterprises: Sustainable Corporate Social Responsibility (SCSR), Creating sustainable shared value (CSSV), concept Humanistic Economy (CHE), Bhutanese Development Concept (BDC) and National Quality Programme of the Slovak Republic for the years 2017 – 2021 (NQP) and Industry 4.0.
11. **Validating a sustainable competency model.** By validating a sustainable competency model, an enterprise verifies if the proposed model has actually described such behaviour, thanks to which managers achieve exceptional results in a sustainable manner.
12. **Using a sustainable competency model in individual areas (using Analytic Hierarchy Process for selection of candidates, development, evaluating and reward of employees.**

Within Methodology proposal of the Slovak industrial enterprise employees' competency model utilising the AHP method in the Sustainable Development context, **we propose to use the analytical hierarchical process (AHP) in two steps, namely:**

- **Step 10: Creating a new sustainable competency model or reworking the original competency model.**
- **Step 12: Using a sustainable competency model in individual areas.**

The general procedure for applying the AHP method through Expert Choice software is as follows:

- **Defining the objective, criteria and different solutions.**
- **Determining the weight of individual criteria by pairwise comparison.**
- **Evaluating the individual variants by pairwise comparison.**
- **Evaluating the order of variants.**

The using AHP method in step 12: Creating a new - sustainable competency model or reworking the original competency model.

Within application design the AHP method to create a new Sustainable Competency Model, it is necessary to create a hierarchical structure according to the following procedure:

- **Defining the objective:** "Creating a new Sustainable Competency Model".
- **Defining the criteria:** Criterion "Sustainable quality of work – SQW";
Criterion "Sustainable quality of life – SQL";
Criterion "Sustainable quality of production – SQP".
- **Defining the solution variants:** Sustainable competencies supporting the building of sustainable development in industrial enterprises.

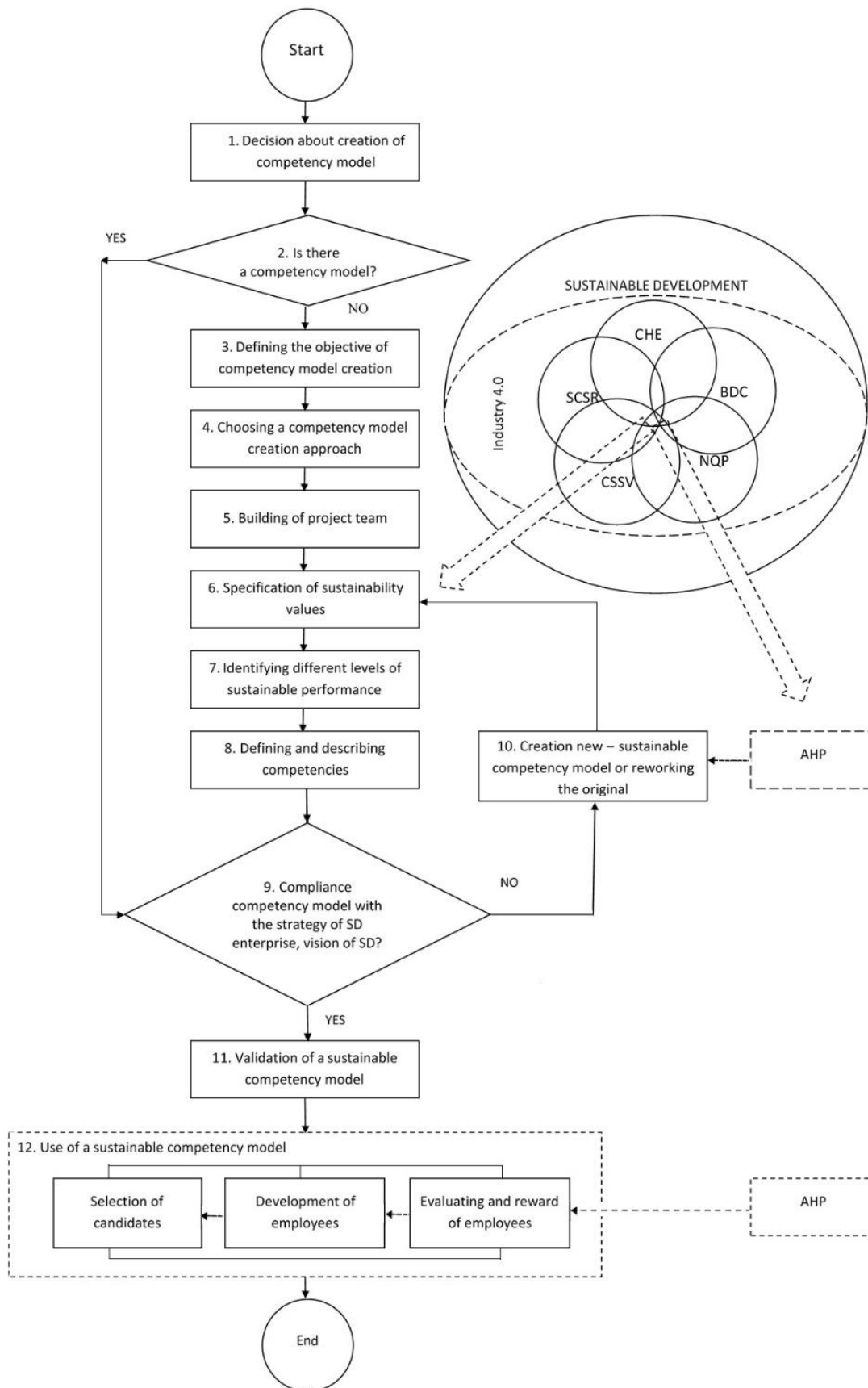


Fig. 4 Methodology proposal of the Slovak industrial enterprise managers' competency model utilising AHP method in the Sustainable Development context (Jurík, 2017)

CONCLUSION

In the context of the business environment changes and the need of applying the principles of sustainable development in industrial enterprises, it is necessary to re-evaluate the current profiles and requirements for managerial positions, and pay attention to the development of such models and criteria which would contribute to the sustainability of the enterprises. And therefore, it is necessary to deal with the methodology proposal of the Slovak industrial enterprise managers' competency model in the sustainable development context. Analytic Hierarchy Process method is a suitable tool for developing the competency model and its application in the selection, development, evaluation and remuneration of managers.

Acknowledgement

The contribution is based on the results of the APVV project No. LPP-0384-09: “Concept of HCS model 3E vs. concept of Corporate Social Responsibility (CSR)” and the KEGA project No. 037STU-4/2012: Implementation of the subject of “Corporate Social Responsibility Entrepreneurship” into the study programme of Industrial Management in the second degree of study at STU MTF Trnava”.

The contribution is also a part the VEGA project No. 1/0235/17: “System identification of complex assumptions to support industrial innovation and employment in the less developed regions of Slovakia”.

References:

1. Centre for Bhutan Studies & GNH Research, 2016. *2015 GNH SURVEY REPORT: A Compass towards a Just and Harmonious Society*. Thimpu. ISBN 978-99936-14-86-9.
2. Gross National Happiness, 2016. [online]. [cit. 2016-11-3]. Available at: <http://www.grossnationalhappiness.com/>
3. HALUŠKA, I. 2011. *Budúcnosť globálnej ekonomiky. Teória a prax humanistickej ekonomiky. (The future of the global economy. Theory and Practice of the Humanistic Economy.)* Bratislava: IRIS. 437 p. ISBN 978-80-89256-65-5.
4. HALUŠKA, I. 2015. *Manifest Humanistickej (ľuďom slúžiacej) ekonomiky. (Manifest of Humanistic (people serving) Economy)*. [online]. [cit. 2017-02-20]. Available at: http://www.noveslovo.sk/c/Manifest_Humanistickej_luďom_sluziacej_ekonomiky
5. HALUŠKA, I. 2010. *Teória humanistickej ekonomiky. (Theory of Humanistic Economy)*. [online]. [cit. 2017-02-20]. Available at: http://www.paneurouni.com/files/sk/eei/clanky/teoria_humanistickej_ekonomiky.pdf
6. HRDINOVÁ, G., 2013. *Koncept HCS modelu 3E vs. koncept Corporate Social Responsibility (CSR). (Concept of HCS model 3E vs. concept of Corporate Social Responsibility (CSR))*. Dissertation thesis. Trnava: MTF STU, 228 p.
7. JURÍK, L. 2017. *Návrh metodiky tvorby kompetenčného modelu zamestnancov priemyselných podnikov na Slovensku s využitím metódy AHP v kontexte s udržateľným rozvojom. (Methodology proposal of the Slovak industrial enterprise employees' competency model utilising AHP method within the Sustainable Development)*. Dissertation thesis. Trnava: MTF STU, 166 p.
8. Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky (Slovak Office of Standards, Metrology and Testing). 2016. *Národný program kvality: Stratégia zlepšovania kvality produktov a služieb zlepšovaním organizácií 2017 – 2021. (National Quality Programme of the Slovak Republic: Strategy to improve the quality of products and services by improving organizations 2017-2021.)*. Available at: http://www.unms.sk/swift_data/source/2017/kvalita/narodny_program_kvality/NPK_SR_2017_-_2021.pdf

9. STANĚK, P., IVANOVÁ, P. 2016. *Štvrtá priemyselná revolúcia a piaty civilizačný zlom. (Fourth industrial revolution and fifth civilization break)*. Bratislava: Elita. 216 p. ISBN 978-80-970135-8-5.
10. STEINGART, G. 2008. *Globální válka o blahobyt. (A global war for welfare)*. Prague: Knižní klub. 348 p. ISBN 978-80-242-2301-8.
11. STEAD, J.G., STEAD, W.E. 2012. *Manažment pre malú planétu. (Management for a Small Planet)*. Bratislava: Eastone Group. ISBN 978-80-8109-216-9.
12. ŠMIDA, L. 2015. *Návrh tvorby systému udržateľných zdieľaných hodnôt priemyselného podniku v kontexte s udržateľným spoločensky zodpovedným podnikaním. (Proposal for building the system of sustainable shared value of an industrial enterprise in the context of Sustainable Corporate Social Responsibility)*. Dissertation thesis. Trnava: Trnava STU.