

SZENT ISTVÁN UNIVERSITY

**THE REASSESSMENT OF PERSONAL COMPETENCIES
FROM THE POINT OF VIEW OF
HUMAN RESOURCE MANAGEMENT
AND ECONOMIC HIGHER EDUCATION**

THESES OF THE DOCTORAL (PhD) DISSERTATION

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1. INTRODUCTION

1.1. Timeliness of the topic, reasons for selection

I have selected one of the segments of Human Resource Management, i.e. the practice and methods of selection and within its domain, the role and reassessment of personal competencies.

The timeliness of my research topic is proved by the fact that nowadays human resources play an indispensable part in the resource system of economic organisations as the efficiency of other resources depend on human resources that run enterprises. The aspects of human psychology, motivation, performance, incentives, money and labour force are significant in economics. Lifelong learning, andragogy, further training and personality development training are stressed in retaining corporate competitiveness as well as in the paradigm of economics. The reason for the popularity of competencies can derive from the decline of classical scientific culture in parallel with the spread of mass higher education systems in the world of postmodernism. My topic is interdisciplinary, i.e. in addition to human resource management considerations it also includes the aspects of economics, sociology, psychology, marketing, PR, pedagogy, management and andragogy.

Due to the volume and content limitations as well as the high number of competencies I have selected one of the segments of personal competencies and the eight key competencies defined by one of the EU committees in 2006. My competency structure can be regarded of novel nature as such a mixture of competencies has never been examined in Hungary. Another novel feature in my examination is that the correlation between competencies and company size, profile and ownership as well as the characteristics of employees are not very frequently examined, either. Furthermore, the correlations explored concentrate on the application of the results and the development of competencies in higher education.

1.2. The main objectives of the research

Among others, in my dissertation I wish to highlight what key business competencies (can) enhance the success of employees and their competitiveness in the labour market and also what personality traits have a powerful impact on decision making mechanisms. An answer is also sought to the question of how competencies have been transformed, how their role was appreciated and re-evaluated and what skills and abilities are no longer necessary for success in the labour market vs. the ones that were not required previously but have become indispensable these days. One of my objectives was to create and test a competency structure tailored to the Hungarian labour market situation and specialities on the basis of the professional literature.

Based on my literature review I have supposed that it is not practical to talk about competencies in general, rather the adequate competency profile and portfolio has to be reviewed in a certain job or profession. The present analysis contains mainly the correlation between corporate size/ownership/profile and (personal) competencies.

Based on my hypotheses, I have formulated four research objectives, two of which are connected to literature review while the other two are linked to the empirical phase.

Objectives connected to literature review:

- C1 the exploration, introduction, grouping and synthesis of the definition for competency
- C2 the examination of the role of competencies with special regards to human resource management and education

Objectives connected to the empirical phase:

- C3 grouping of competencies based on an individually compiled competency structure
- C4 creating the model of the re-evaluating and updating personal competencies with special regards to selection and person-job fit as well as the problem of flexibility in education

1.3. The hypotheses of the research

- H1** The definition of competency differs from one branch of science to another similarly to the judgment of the significance of knowledge, skills and abilities.
- H2** On the basis of the theory of competing competencies different competency elements are stressed but the role and significance of personal competencies are reflected in corporate requirements.
- H3** Although competencies are always job-specific and related to professions, certain shifts in stress can be detected depending on company size (number of employees), ownership and profile within (personal) competencies.
- H4** The competency theories of students entering the labour market significantly differ from the background variables (gender, age, form of programme, type of course).
- H5** The supporting corporate environment and organisational culture together with effective HR processes can enhance the development of personal and key competencies.
- H6** Education does not always develop the most important competencies in the labour market although it is not exclusively the task of education. There is a need for harmonising HR/labour market needs with education not only in terms of trainings but also competency development. There are gaps between the competency theories of employers (HR specialists) and students whose harmonisation and correspondence is a must.
- H7** While certain competencies are appreciated and others are pushed in the background, by and large the role of competencies will be greater in the future in selection and person-job fit as well as in specialist training.

2. MATERIAL AND METHOD

2.1. Secondary research

The dissertation starts the examined research topic with literature review. I have collected the different interpretations and explanations of the term of competency from the Hungarian and the international specialist literature alike. After giving a short overview of the historical background I have examined the elements and types of competencies with special regards to personal competencies in the title. After reviewing the models I have highlighted the role that competencies play in human resource management and education, as well.

2.2. Primary research

I have chosen interviews as a method of primary research and standardised questionnaires were designed as an instrument. While processing questionnaires, a factor analysis as one of the bi- and multivariate methods was applied together with crosstab analysis, T- and F-trial and also variance analysis and Chi-square trial were used to explore the correlations statistically.

2.3. Data collection and sample taking

To gain a deeper insight into the topic, preliminary research was conducted that involved 300 people who were asked to fill in a questionnaire in May 2009. My target groups consisted of correspondent and full time students as well as employers. In another part of my preliminary research content analysis was carried out within the framework of which the competency portfolio offered by the programmes of the Faculty of Economics and Social Sciences of Szent István University was compared with the competency demands in job advertisement for the relevant qualification offered.

Before the quantitative phase in 2014, qualitative research was also conducted as one of my objectives was to compile and validate an independent competency structure tailored to the situation and the special features of the Hungarian labour market based on the opinion of the members in the sample. A focus group

examination was conducted on the basis of a semi structured interview guide where interviews took place in heterogeneous groups based on company size.

In the second phase while processing the quantitative data this pre-tested and finalised competency structure was analysed and their relations were explored by means of a factor analysis. When compiling the standardised questionnaire I strived to adjust questions to every level of measurement (nominal, ordinal, interval and ratio scale), which were open or closed questions.

The deadline of returning questionnaires was 30 June 2014. Altogether 1291 were returned of which 1264 could be assessed. Twenty seven had to be ignored. The number of elements in the sample was 1264 (of which 519 employers, 435 full time students and 310 correspondent students), 389 were sent back electronically and 875 were paper-based. Geographically, 321 came from Heves county, 613 from Pest county and 211 from Békés county. The remaining 119 derive from other counties of Hungary.

During data processing I experienced that certain competencies independently from their factor number were part of the same group, which suggests that these skills are somehow related and also make up a single unit. Such an interrelation of competencies could also be anticipated although it was only in the quantitative phase that this correlation was statistically justified.

The methodological correlations of hypotheses are presented by Table 1.

Table 1 The hypotheses of the quantitative research and their methodological correlations from the point of view of the research objectives

OB-JEC-TIVE	HYPOTHESIS	SHORT DESCRIPTION OF QUESTION GROUPS	QUESTION	LEVEL OF MEASUREMENT	METHOD OF ANALYSIS	NEW SCIENT. RESULT
C2	H1 The definition of competency differs from one area of science to another similarly to the judgment of the significance of knowledge, skills and abilities.	1: Relationship between knowledge and competencies	C 1,3,4,5; F 1,2,3,4; E 1.	metric, scale	descriptive statistics	T2
C2	H2 On the basis of the theory of competing competencies different competency elements are stressed but the role and significance of personal competencies are reflected in corporate requirements.	5:The role of personal competencies	qualitative interviews C2	qualitative, metric, scale	traditional content analysis	T3
C2 C3	H3 Although competencies are always job-specific and related to professions, certain shifts in stress can be detected depending on company size (number of employees), ownership and profile within (personal) competencies.	3/B: The relationship between socio-demographic (corporate) characteristics and competencies	qualitative interviews, E 12, 14, 15.	qualitative nominal	content analysis, descriptive statistics, variance analysis Chi-square trial	T2
C3	H4 The competency theories of students entering the labour market significantly differ from the background variables (gender, age, form of programme, type of course).	3/A: The relationship between socio-demographic (student) characteristics and competencies	L 18-22.; N 16-19.	scale, nominal	descriptive statistics, variance analysis	T2
C4	H5 The supporting corporate environment and organisational culture together with effective HR processes can enhance the development of personal and key competencies.	4: The relationship between supporting organisational culture and competencies	L 6, N 5.	scale, nominal	descriptive statistics, variance analysis	T4
C4	H6 Education does not always develop the most important competencies in the labour market although it is not exclusively the task of education. There is a need for harmonising HR/labour market needs with education not only in terms of trainings but also competency development. There are gaps between the competency theories of employers (HR specialists) and students whose harmonisation and correspondence is a must.	2: The relationship between human resource management and education	L8,10,13,16,17; N 9,11,14,15; M 3,9,10.	scale, nominal	descriptive statistics, variance analysis	T4
C3	H7 While certain competencies are appreciated and others are pushed in the background, by and large the role of competencies will be greater in the future in selection and person-job fit as well as in specialist training.	6: The reassessment of competencies	L7,8,9,14,15; N 6,7,8,12,13; M2, 3, 4,5,6,7, 8.	scale, nominal	descriptive statistics, variance analysis, Chi-square trial	T1

Source: own compilations, 2014. (Questionnaire of C= correspondent students, F= full time students, E= employers)

3. RESULTS

Due to volume limitations this chapter only presents the results of the 2014 research excluding the preliminary phases.

3.1. Introduction to the 2014 primary phase

3.1.1. Results of the focus group interviews

As a basis of the quantitative phase qualitative research was conducted with the participation of 15 experts. I was looking forward to conducting the semi-structured interviews with the specialists as they were designed to prove two hypotheses in addition to testing the competency structure used in the questionnaire.

According to Hypothesis 2 the competency requirements of companies (outlined in the questionnaire for employers) stress the role of personal competencies. It is clearly seen from the part entitled Evaluation by question groups that this hypothesis is accepted as both parties agreed about principal issues such as the development tasks of education, the appreciation of competencies, and the role of a supporting corporate culture in individual/personal development. Of course, there were differences in the competency lists and portfolios themselves but there were cases when the elements of the groups totally covered one another.

According to Hypothesis 3 requirements for (personal) competencies showed some shifts in stress depending on company size, ownership and activity (profile) in addition to job-relatedness. This hypothesis was partly rejected as there was no statistically proven correlation between size by employees, ownership and profile and competencies. However, certain shifts in stress were detected.

3.1.2. Evaluation of the questionnaire of full-time students

The socio-demographic characteristics of the sample

Based on the highest qualification students who graduated from secondary technical schools and grammar school or who finished a two-year specialist course in higher education dominate the sample.

Most respondents study agriculture followed by students of Arts and Sciences, commerce, marketing and economics.

According to gender 35% men and 65% women filled in the questionnaire.

Regarding age most respondents were aged between 18 and 24.

On the basis of the current location of trainings most of the members study in Pest (52%) county followed by the capital (29%) and Békés county (14%).

Most of the respondents live in Pest county permanently followed by the capital (21%) and Békés county (11%).

Most of them live in cities while the proportion of those living in the capital and in villages was similar.

According to the 435 full-time students *good communication skills, IT and foreign language skills are necessary in most cases for a successful career*. ICT is followed by negotiation techniques closely attached to it and concentrating on speaking as well as self-knowledge as the only one personal competency. Interestingly, this is the only personal competency that appears in the list of key competencies, and immediately it went to the top.

The labour force of the future sees *the collateral of a successful career in being able to make use of the knowledge gained*. At present there is a need for adequate knowledge tailored to labour market requirements which can be used in practice, too. The *improvement of basic skills and competencies was also marked as a very important objective and requirement in a message to (higher) education institutions* as developing personality traits and personal competencies were stressed in the ranking. This justifies the fact that higher education institutions have a key role in imparting the best and updated knowledge to their students tailored to market challenges, trends and requirements in addition to adapting to professional concepts and scientific standards.

Students thought that *gaining new knowledge is also essential for success*. This also highlights the viability of concepts such as lifelong learning and lifewide learning (LLL and LWL).

I also wanted to know what students thought about the characteristics of an *ideal workplace*. According to the results the most important factors for future employees are good colleagues, team work, good atmosphere and opportunities for self-improvement. All this reflects a change in attitudes, i.e. instead of material incentives satisfying

individual, personal needs and requirements are becoming more important.

I was also curious to know the students' opinion about *shifts in stress within the domain of competencies*. In their opinion technical, economic and entrepreneurial skills, learning from mistakes and discretion are the competencies that were appreciated to the greatest extent in the last 5 years. Table 2 presents the results.

Table 2 Evaluation of competencies (skills and abilities) in the last 5 years (*in percentage*)

competency	appreciated	no change	depreciated
cooperation	30	33	37
persistence	38	27	35
learning from mistakes	60	12	28
reliability	40	30	30
motivation	35	28	37
preciseness	48	20	32
problem solving	35	14	51
self-improvement	26	14	60
flexibility	32	14	54
coping with stress	22	20	58
initiative	49	16	35
persuasion	50	8	42
loyalty	45	26	29
independence	35	19	46
sense of responsibility	42	22	36
taking risks	35	21	44
self-discipline	53	25	22
accuracy	44	25	31
organisational skills	45	12	43
hard working	49	25	26
endurance	21	15	64
patience	32	45	24
decision making	44	19	37
discretion	55	22	23
ability to learn	47	12	41
communication in a foreign language	20	8	72
IT skills	16	1	83

entrepreneurial skills	50	10	40
communication skills	33	5	62
EU basics	49	9	42
technical skills	57	8	35
economic skills	60	6	34
social awareness, empathy	41	41	18

Source: research in 2014, N= 435

According to the results above students stated that the skills and abilities inevitable to become a successful entrepreneur (flexibility, decision making, discretion, taking risks and endurance) should be developed predominantly by higher education. Reliability can be regarded as a little bit distinct from the group above emphasising its special nature as trust and discretion are of vital importance for employers and employees alike.

During their current studies students mentioned that the development of *practical and theoretical competencies* still favoured the latter ones by 65% to 35%. In my opinion this should be changed as there is a need and call for implementing theoretical knowledge in the labour market.

The *three competencies that should urgently be developed* are communication (46%), foreign language (36%) and mathematics/IT (9%). At the same time, interestingly they state that they are *the best at* communication and social skills. Because language as one of the means of communication is always being transformed even lexically in my mind the seemingly paradox statement above can be solved. According to the respondents in some cases it is of vital importance if the necessary competencies are improved by the higher education institution. This result obviously stresses the fact that the majority of the students suggest that the formal, institutional 'classical' form of studying is not necessary at all times as competencies can also be improved informally and not by a higher education institution. In parallel, respondents also named *individual project tasks* as the best way of developing the necessary competencies.

3.1.3. Evaluation of the questionnaire of correspondent students

The socio-demographic characteristics of the sample

For most members of the sample the purpose of current studies is self-improvement (37), promotion (30%) and 20 percent said they study in this area with the prospect of getting a job.

Most respondents had a college degree or a certificate in a profession. According to the branches of science of their highest qualification most students were engaged in technical-IT (20%) followed by economics (15%) and social sciences (10%).

Twenty-five percent were male and 75% female.

Regarding age most respondents were aged between 30 and 39.

On the basis of the current position 37% work as an office worker and 24% are intellectual workers.

The members work full time for the following company types: state-owned/local government (42%), foreign company (multinational) (19%), Hungarian private company (38%) and companies owned by the Church (1.5%).

Most of them work in education and pedagogy (20%) as well as commerce and marketing (12%).

Their companies have been present on the Hungarian market for fewer than 5 years (14%), 5-10 years (13%), more than 10 years (19%) or more than 20 years (55%).

Based on the location of their current training, most respondents study in Pest county (52%) followed by the capital (29%) and Békés county (14%).

Regarding their permanent domicile, most sample members live in Pest county followed by the capital (21%) and Békés county (11%).

Forty-nine percent live in cities, 19% in villages and 32% in the capital.

I also asked the correspondent students which competencies of the structure compiled *have the most important role in making a successful career*. According to the results of the sample of 310 members, communication skills and IT skills are the most decisive and also foreign languages, negotiation skills and self-knowledge were placed at the top.

As a separate question I was also curious to know their opinion about *the role certain competencies played when they were selected for their present job*. The most important skills mentioned were reliability, sense of responsibility, self-discipline and marked them as a reason for hiring. The result also reflects the reassessment of personal

competencies which corresponds with the responses of full-time students and also with the ones of the employers later.

Table 3 presents the results.

Table 3 Opinion about the role of competencies in hiring for the present position (*mean, where 1=not important at all, 5=the most important*)

competency	definition	mean
cooperation	works together with others to achieve a common goal	4.1
persistence	loyal and able to concentrate on the task for long	4.2
learning from mistakes	makes efforts to correct the mistakes	3.7
reliability	acts as instructed	4.7
motivation	enthusiastic, positive attitude to tasks	4.0
preciseness	performs quality work by deadline	4.5
problem solving	points out problems and tackles them	4.3
self-development	aware of strengths and weaknesses, consciously improves skills	3.6
flexibility	able to adapt to changing conditions	4.1
coping with stress	able to work under pressure	4.1
initiative	projects thoughts and ideas without asking	3.5
persuasion	introduces ideas and thoughts with logical arguments	4.1
loyalty	inspired by work, relates to organisational objectives and values	4.2
independence	able to work on their own	3.7
sense of responsibility	puts up with the consequences	4.7
taking risks	able to act with uncertainty	4.0
self-discipline	able to control feelings under stress	4.5
accuracy	able to work almost without any faults	4.3

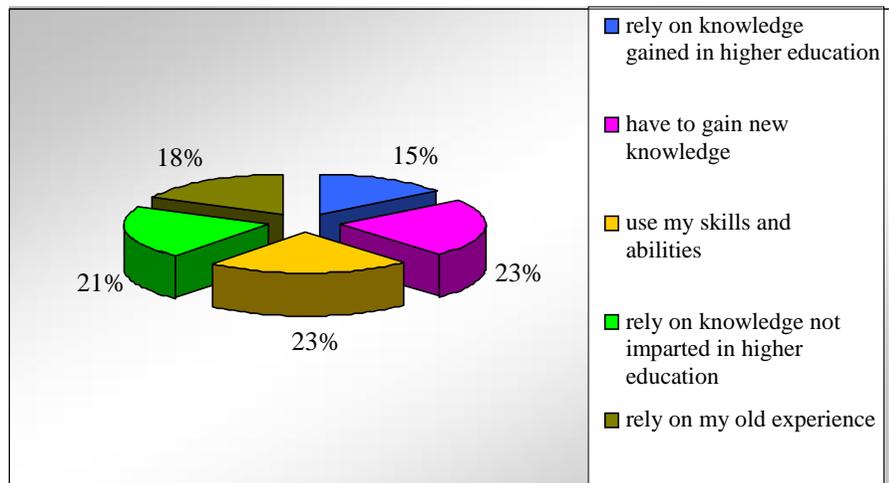
organisational skills	able to coordinate working tasks	3.6
hard working	looks for new and extra challenges	4.1
endurance	makes and keeps up the required efforts	4.1
patience	able to manage certain situations calmly	3.5
decision making	evaluates and assesses different points of view unbiased	3.9
discretion	cautious	3.8
ability to learn	able and willing to do self-improvement	4.0

Source: research in 2014, N=310 standard deviation: 0.8-1.0

According to the correspondent students the collateral of a successful career lies in *implementing the knowledge gained and using the basic competencies*.

Students said it was typical of their present job and position that *they are required to gain new knowledge*, which stresses the importance of keeping up with the new and novel technologies and innovations in almost all positions nowadays.

A similar result was gained when prioritising these competencies. Students were asked *which competencies they use predominantly at work*. The results are shown by Figure 1.



I also asked the respondents *how a good workplace can be characterised*. Results reflect that mostly good colleagues and encouraging personal improvement are the most important factors that make a workplace attractive.

In terms of the *competency structure* it turned out that IT skills, self-development, coping with stress and communication are the skills that have been appreciated lately according to the members of the sample. Results are presented by Table 4.

Table 4 Assessing the importance of competencies
(% relative frequency, more than one answer)

competency	appreciated	no change	depreciated
cooperation	43	36	21
persistence	49	35	16
learning from mistakes	35	57	9
reliability	36	48	16
motivation	38	36	26
preciseness	33	55	12
problem solving	56	39	5
self-improvement	60	32	8
flexibility	56	34	10
coping with stress	66	21	13
initiative	30	54	16
persuasion	31	57	12
loyalty	24	46	30
independence	47	42	11
sense of responsibility	34	50	16
taking risks	33	45	22
self-discipline	31	54	15
accuracy	30	57	13
organisational skills	43	50	7
hard working	26	54	20
endurance	76	19	5
patience	28	47	25
decision making	40	50	10
discretion	22	70	8
ability to learn	52	38	10
communication in a foreign language	67	28	5

IT skills	77	23	0
entrepreneurial skills	38	40	22
communication skills	60	34	6
EU basics	27	62	11
technical skills	26	62	18
economic skills	31	61	8
social awareness, empathy	24	33	43

Source: research in 2014. N=310

In addition to technical, economic and EU basics self-improvement and ability to study are the competencies developed by higher education. Labour market, however, requires coping with stress, cooperation and endurance.

A little gap between labour market requirement and competency development by higher education was also present here, which can be utilised in rethinking competency development at schools to show the shift in proportions and also the skills that have to be stressed in developing to meet the demands of the labour market.

In their present jobs the respondents mostly use communication and IT competencies. It is interesting to note that they were the strongest skills and the areas to be developed together with interpersonal, intercultural, social skills and foreign languages. Seemingly, it does not matter how strong these competencies are, they are in need of constant development.

The students make use of *31% of their theoretical knowledge* gained in their latest field of study in their present job.

Thirty-six percent of the respondents think it is an asset in all cases while 34% think it is an asset in some cases if competencies are developed with the help of the present higher education institution.

The most efficient way of competency development was project work and professional practice, too (Figure 2).

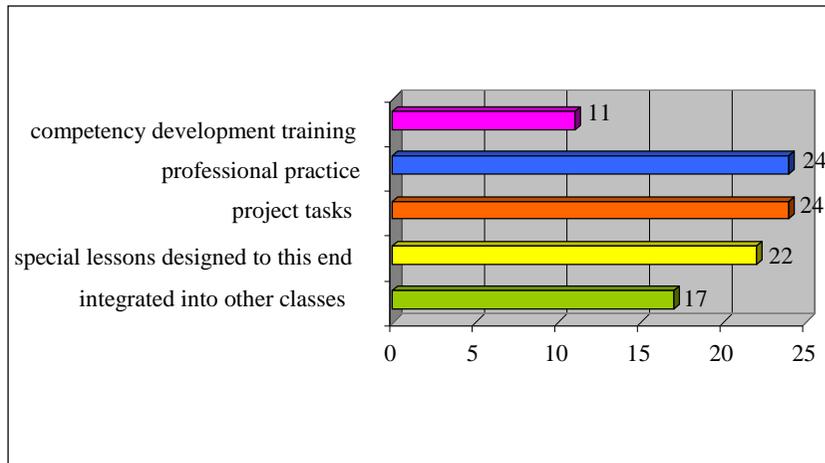


Figure 2 Ideas in connection with competency development
(% relative frequency, more than one answer)

Source: research in 2014. N=310

3.1.4. Evaluation of the questionnaire of employers

The socio-demographic characteristics of the sample

Most companies in the sample have been operating for 5-10 years and companies working for more than 20 years represented the smallest portion. On the basis of industries most respondents were engaged in commerce and marketing. Forty-one percent of the companies were headquartered in Budapest or Pest county and with respect to the number of employees they had fewer than 10 staff.

Based on ownership, Hungarian private companies made up the biggest portion as well as state-owned ones and those belonging to local governments. Companies in foreign hands had the smallest proportion (2%) and only one employer from the Church filled in the questionnaire.

One of the important objectives of my research was to examine the opinion of employers about *the role that single competencies play in a successful career*. The analysis was carried out on a 519-member sample. The results reflect that employers marked foreign language, good communication skills and IT skills are the most important. The significance of negotiation techniques and self-knowledge as the only one personal competency should not be neglected, either. They are followed by such key competencies as social and economic basics.

I was also interested to know how the significance of competencies has changed during the last 5 years. Responses are reflected by Table 5.

Table 5 Changes in the significance of competencies during the last 5 years (*percentage*)

competency	appreciated	no change	depreciated
cooperation	44	43	13
persistence	50	34	17
learning from mistakes	40	53	7
reliability	43	39	18
motivation	43	38	18
preciseness	38	46	15
problem solving	50	39	9
self-improvement	51	37	11
flexibility	51	40	9
coping with stress	48	28	23
initiative	32	49	19
persuasion	42	45	13
loyalty	30	47	23
independence	45	38	17
sense of responsibility	30	50	20
taking risks	30	44	26
self-discipline	22	57	21
accuracy	36	50	13
organisational skills	45	46	9
hard working	42	42	16
endurance	58	26	16
patience	22	51	26
decision making	30	47	22
discretion	34	53	13
ability to learn	52	32	16
communication in a foreign language	71	20	9
IT skills	69	28	3
entrepreneurial skills	42	48	10
communication skills	50	45	5
EU basics	33	56	11
technical skills	33	49	18
economic skills	36	53	11
social awareness, empathy	23	42	35

Source: research in 2014. N= 519

According to the members of the sample endurance, flexibility, problem solving and self-improvement are the competencies that have been most appreciated. I also examined *what competencies are mostly developed* by employers. Results reflect that they are the so-called standard requirements, i.e. self-improvement, reliability, sense of responsibility and loyalty. They all belong to the group of personal competencies.

I also examined *the most important skills and abilities*. They were cooperation, reliability and technical skills. It is also supported by labour market requirement where nowadays we experience a great demand for engineers and employees with a technical background. Employers stress the necessity of working in a group, co-operating and working in a reliable way.

In addition to the prioritized competencies I also wanted to know what competencies and skills are regarded *not so important* by employers. In a very close competition EU basics were nominated together with IT skills under which, in my opinion, they mean programming skills at a more advanced level as nowadays informatics is a must. Social awareness and empathy is the tail ender, which is surprising as in my opinion this social competency is also of vital importance in our current multicultural background based on team work. The same was also stated by employers.

I also analysed the experts' opinion about *the role of competencies at work* (Figure 3) and also if *this role appreciates, does not change or depreciates in the future* (Figure 4). The majority stated that this role would appreciate in the future.

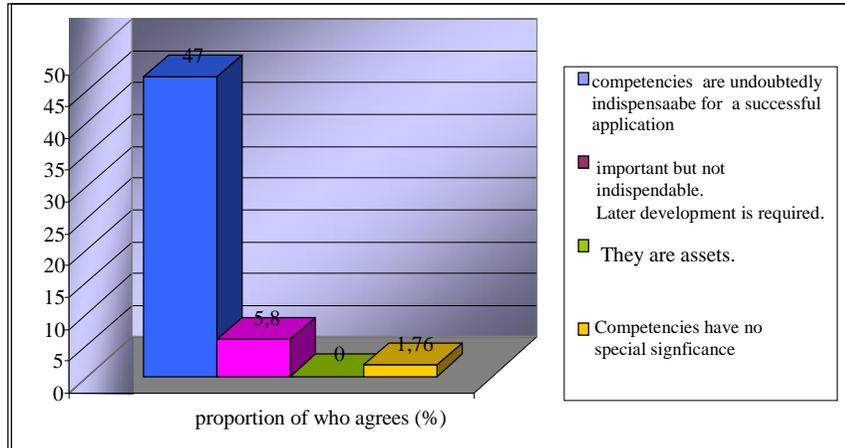


Figure 3 The importance of competencies for a successful application
Source: research in 2014. N= 519

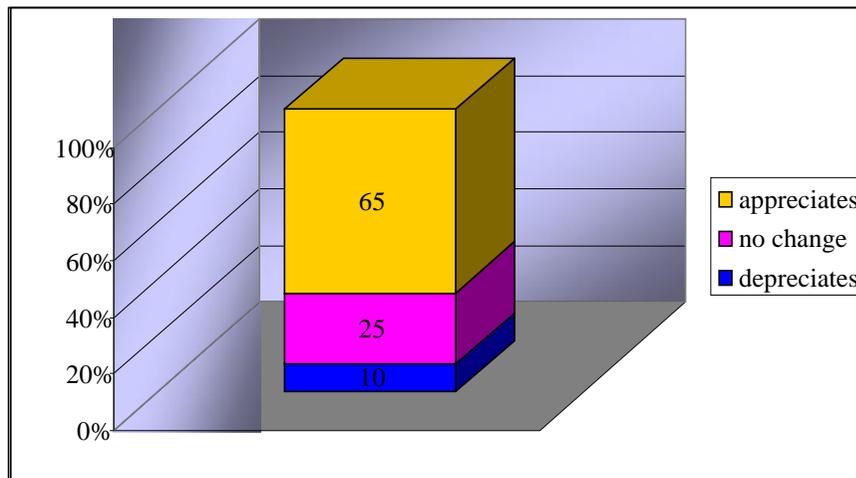


Figure 4 Evaluation of the future role of competencies (%)
Source: research in 2014. N= 519

I had another important objective, i.e. to get to know *which competencies employers think education should develop and what changes would be required*. Practical training and language competencies should be developed the most. A greater harmony between labour market requirements and knowledge imparted should also be considered. Figure 5 and 6 presents the results.

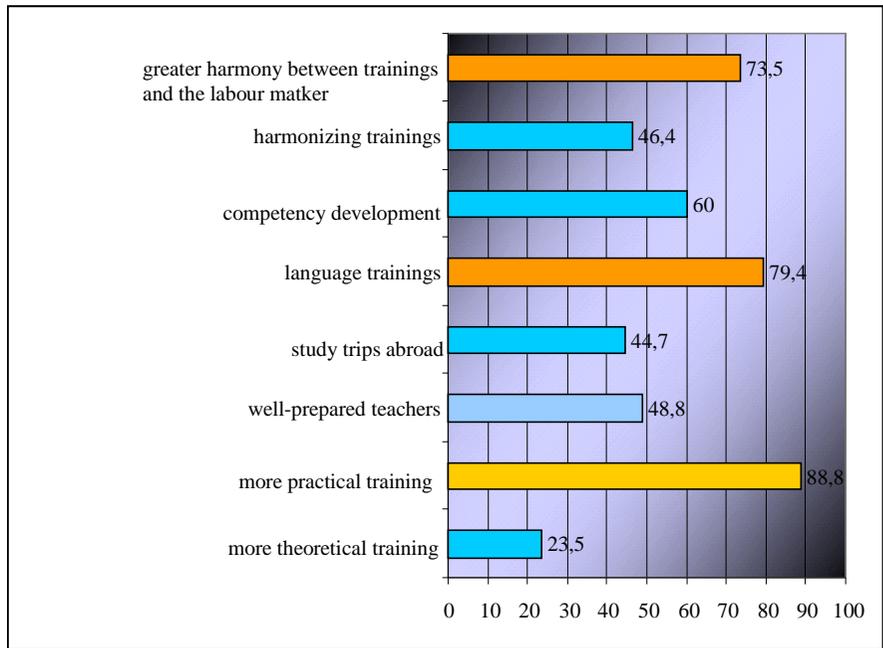


Figure 5 Changes suggested in education
(in percentage, relative frequency, more than one answer)
 Source: research in 2014. N= 519

Employers say these changes require more practical trainings, competency development trainings and special classes.

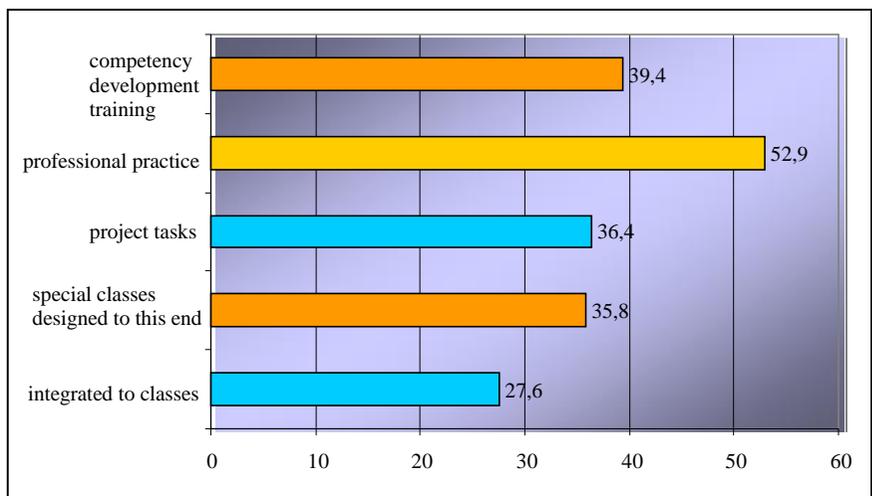


Figure 6 Evaluation of different forms of competency development
(in percentage, relative frequency, more than one answer)
 Source: research in 2014. N= 519

3.2. Correlation examinations

3.2.1. Correlation examinations with corporate characteristics

I also analysed how differently certain competencies are evaluated with regards to the *ownership structure of the company*. Statistically proven correlation was not detected between the two variables examined in variance analysis (the level of significance was above 0.005).

The results of the correlation examination between the evaluation of competencies in career and *the number of employees* did not support a statistical correlation, either. The same result was gained when analysing the correlation between the *profile (industry)* of companies and the role of competencies in a career.

However, I supposed it would be worth examining the differences from a professional point of view. Endurance, for example, is highly recommended by foreign companies while problem solving and flexibility were preferred by local governments. In contrast, we can see that foreign languages are not preferred by them.

It seems generalists are welcome who are able to perform several tasks as local governments are not able to employ a specialist by every area in contrast with multinationals. As typically domestic relationships dominate, not surprisingly, language knowledge is not preferred so much.

3.2.2. Correlation examination with the socio-demographic characteristics of students

The following examinations were carried out between competencies and the characteristics of students (gender, age, form of programme, type of training): crosstab analysis, T and F trial, correlation, significance and ANOVA examination.

ANOVA examination with Tukey trial was applied to assess the correlation between the 11 competencies necessary for a successful career and gender in the case of correspondent students where significance level is 0.05 as my sample was not representative. The highest significance level can be found between gender and self-knowledge. Technical skills and negotiation techniques are nearly on the same level. A correlation can also be seen between

communication and IT skills but it is of low intensity. In the case of full-time students EU basics correlates with gender. Of the 11 competencies five have low results so we can conclude that the correlation between gender and competencies in the case of full-time students cannot be regarded decisive.

The correlation between age and competencies brought different results by significance level in the case of correspondent students. We can conclude that it is only in the case of economic knowledge that correlation exists. In the case of full-time students the relationship between competencies and age shows a greater difference than in the case of gender. The weakest correlation was found in terms of IT skills. Cultural skills and foreign language had strong correlation and so did economic skills and social awareness.

An examination was also carried out to analyse the correlation between type of trainings and competencies. Correspondent students could select more than one area in the questionnaire so data was recorded in several steps. ANOVA analysis could no longer be applied so, instead, multivariate analysis was carried out to assess data. Strong significance was detected between social skills, technical skills, negotiation skills and current studies. The weakest correlation was found in the case of communication competency and social awareness. To sum up, expressed strong correlation exists between competencies and the type of trainings in the case of correspondent students. Regarding full-time students also the correlation was strong between competencies and studies in most cases. The strongest correlation existed in social awareness, which almost reached 1. Correlation was also significant between communication and social skills and the type of trainings.

3.2.3. Grouping competencies: a factor analysis

In order to know what competencies are arranged in a group by the respondents, a factor analysis was carried out. The results of the different factor trials are illustrated by Table 6, 7 and 8.

I experienced that certain factors (competencies) moved together regardless the factor weight. It means that there is a strong cohesion between them so they are tightly linked by the employers. However, there were also some competencies that were grouped differently in diverse cases. They are rather instable not belonging to any of the

groups tightly. Table 6 presents the rotated factor matrix of the three-factor trial.

Table 6 The rotated factor matrix of the three-factor trial

	Factor 1	Factor 2	Factor 3
negotiation techniques	0.798	-0.017	-0.085
communication skills	0.777	0.038	0.041
foreign language	0.569	0.253	0.207
self-knowledge	0.433	0.281	0.096
EU basics	0.413	0.280	0.315
technical skills	-0.213	0.858	-0.007
cultural skills	0.356	0.721	0.026
social basics	0.101	0.220	0.059
social awareness	-0.149	-0.026	0.842
IT skills	0.464	0.167	0.519
economic skills	0.463	0.125	0.479

Source: research in 2014. N=519. Varimax method KMO=0.737; total variance=49.9%

The table above shows that the first factor group, i.e. negotiation techniques, communication, foreign language and EU basics move together as multicultural attributes as all of them stress cultural curiosity and the importance of communication. Interestingly, self-knowledge is also part of this group. In my mind self-knowledge can be regarded as one of the cornerstones of communication and self-expression.

The second factor group consisted of technical, cultural and social skills as part of the eight key competencies of an EU committee stressing the important role of knowledge, skills and abilities.

The third factor group included social awareness, IT and economic skills of which the first two were not regarded so important by the employers. Similarly to IT skills, economic ones also have to be brushed up every day. At the same time, basic economic and IT skills are inevitable nowadays.

Table 7 provides information about the rotated factor matrix of the four-factor trial.

Table 7 The rotated factor matrix of the four-factor trial

	Factor 1	Factor 2	Factor 3	Factor 4
negotiation techniques	0.788	-0.081	-0.136	0.060
communication skills	0.769	-0.038	-0.011	0.122
foreign language	0.619	0.222	0.178	-0.012
IT skills	0.523	0.136	0.493	-0.003
EU basics	0.476	0.263	0.296	-0.031
economic skills	0.450	0.022	0.438	0.326
technical skills	-0.122	0.892	0.022	-0.008
cultural skills	0.400	0.671	0.008	0.196
social awareness	-0.098	-0.029	0.849	0.013
social basics	-0.051	0.021	0.013	0.897
self-knowledge	0.390	0.166	0.055	0.419

Source: research in 2014. N=519. Varimax method; KMO=0.737; total variance=59.0%

During the four-factor trial the previous result was gained, i.e. negotiation techniques, communication skills, foreign language and EU basics moved together. Surprisingly, technical skills were grouped to a factor with cultural skills although in my opinion cultural skills (sensitivity) can rather be part of social awareness, which was in a separate sector. Social skills and self-knowledge moved together partly because individuals are integrated into society and while socialising one 'melts' in society and also retains their identity.

Table 8 presents the results of the five-factor trial.

Table 8 Rotated factor matrix of the five-factor trial

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
negotiation techniques	0.719	0.312	-0.111	-0.170	-0.104
communication skills	0.706	0.345	-0.069	-0.047	-0.044
self-knowledge	0.633	-0.047	0.229	0.181	0.186
economic skills	0.511	0.234	0.032	0.459	0.159
foreign language	0.217	0.756	0.085	-0.078	0.049
IT skills	0.175	0.714	0.021	0.275	0.029
EU basics	0.098	0.705	0.137	0.056	0.042
technical skills	-0.162	0.122	0.877	-0.018	0.011
cultural skills	0.493	0.142	0.691	0.050	0.010
social awareness	-0.046	0.073	0.000	0.890	-0.060
social basics	0.042	0.087	0.011	-0.025	0.974

Source: research in 2014. N=519- Varimax method; KMO=0.737, total variance=67.8%

During the five-factor trial negotiation techniques and communication were grouped together with economic skills and self-knowledge, which serves as a way of communication and expressing oneself.

EU basics partly require foreign language knowledge while IT skills also help us orienteer in the world and become culturally open. The unique combination of technical and cultural skills was also present together with the separation of social awareness.

The fifth separated factor is that of social skills that correlated with technical and cultural skills as well as self-knowledge during the three-and four-factor trials, respectively.

In my opinion social skills would rather be treated with economic skills as an integrated unit and they can also have something to do with self-knowledge due to the indistinct individual and social roles in the process of socialisation.

3.2.4. Cluster analysis on the questionnaire for employers

I asked the employers what they thought the most important ones of 11 basic competencies were. Their opinions were compared and hierarchical cluster analysis was carried out with squared Euclidean distance to analyse the sample.

I also examined what competencies were regarded the most important *for a successful career*. These were foreign languages and communication skills as well as IT. Economic skills formed a close connection with negotiation techniques and self-knowledge while social skills were correlated with EU basics and technical skills with cultural skills coupled also by cultural awareness.

The cluster analysis shows that according to the employers *there is a special need for only certain groups of competencies*, i.e. employers think that a successful career requires good communication competencies.

I also analysed *how the role of competencies have been changed in the last 5 years* in the employers' opinion. The number of the examined competencies was 33 comprising the 8 key competencies by the EU and the 11 items analysed previously. We can conclude

that certain competencies would also move together such as foreign language, ability to learn, IT skills, as well as endurance, learning from mistakes, cooperation, reliability and coping with stress. The most isolated ones are problem solving, self-improvement, motivation, preciseness, accuracy, initiative and hard working.

On the whole, we can conclude that the role of the so-called traditional values has been changed as they do not meet the demands of the modern age any longer unlike technical and communication competencies.

I have also carried out the cluster analysis of competencies *by company forms*. In this case I examined if there were any competencies that could be grouped together based on ownership. Compared with the previous tables we can also conclude here that communication skills and foreign language are correlated while IT skills, economic skills, negotiation techniques and self-knowledge are also grouped together. The most isolated ones are social skills and social awareness.

In this way the previous result is stressed, i.e. *the role of the traditional competencies has been depreciated and they are not as important as the modern ones.*

3.3. NEW AND NOVEL SCIENTIFIC RESULTS

My dissertation contains the following new and novel scientific results on the basis of my primary and secondary research supported by literature review.

1. During my examination I have assigned a unique competency mix in the questionnaire of employees (correspondent students), would-be employees (full-time students) and employers (business sector and selection specialists) as well as in the interviews with professionals (T1). As far as I know such a portfolio of competencies have not been carried out yet. I have also examined the role that personal competencies play in selection and conformity to the key competencies of the EU. In this way my second objective has been fulfilled (C2).
2. Although competencies are always attached to a job, there can be certain shifts in stress depending on company size (employee number), ownership and profile (H3) as well as the socio-demographic characteristics of students and companies (H4) (T2). Although according to my third hypothesis (H3) I could not detect a clear statistical correlation between company size, ownership and profile, some shifts in stress were found out so this hypothesis was partly accepted. Hypothesis 4 (H4) was accepted in terms of type of trainings although gender and age strongly fluctuated depending on the form of training, so this hypothesis is partly accepted. By means of a factor analysis I separated competencies that move together, which are either generic or special. In several cases similar competencies were regarded to be essential by employers and the would-be employees, part of which is called entrepreneurial competencies. In this way the third objective (C3) has also been accomplished.
3. My examinations have highlighted the reassessment of personal competencies and the topicality of their changes, which can significantly be supported by backing organisational culture (T3). The (would-be) employees have also agreed with its importance as mostly they marked personal competencies as key competencies or the ones to be developed and their role was assessed to be as relevant as that of knowledge and special skills (H1). In this way the second

hypothesis (H2) has entirely been accepted. A unified definition for competency could greatly contribute to the flexibility of higher education as if it is clear what is meant by this term in business (especially selection and person-job fit in HR), it is easier to harmonise the content of trainings with labour market expectations, which would promote the dialogue between education and labour market. By means of the above-mentioned facts Hypotheses 5 and (H5, H7) have also been accepted.

4. The new integrative model created according to my fourth objective (C4) makes suggestions and recommendations about the necessity of competency development and also draws attention to the importance of updating personal competencies (T4), i.e. the continuous monitoring of labour market demands for competencies and also channelling back the experience and recommendations of the graduates and undergraduates in order to make up a more flexible training portfolio. The result helps to accept Hypothesis 6 (H6).

The system of correlations between the objectives and hypotheses of the research with the new and novel scientific results are presented by Table 9.

Table 9 The system of correlations between the objectives and hypotheses as well as the new and novel scientific results

OBJ-EC-TIVE	HYPOTHESIS	A C C E P T E D	R E F U S E D	NEW AND NOVEL SCIENTIFIC RESULTS
C2	H1 The definition of competency differs from one area of science to another similarly to the judgment of the significance of knowledge, skills and abilities.	✓		T2 Although competencies are always attached to a job, there can be certain shifts in stress depending on company size (employee number), ownership and profile (H3) as well as the socio-demographic characteristics of students and companies (H4).
C2	H2 On the basis of the theory of competing competencies different competency elements are stressed but the role and significance of personal competencies are reflected in corporate requirements.	✓		T3 My examinations have highlighted the reassessment of personal competencies and the topicality of their changes, which can significantly be supported by backing organisational culture.
C2 C3	H3 Although competencies are always job-specific and related to professions, certain shifts in stress can be detected depending on company size (number of employees), ownership and profile within (personal) competencies.	✓	✓	T2 Although competencies are always attached to a job, there can be certain shifts in stress depending on company size (employee number), ownership and profile (H3) as well as the socio-demographic characteristics of students and companies (H4).
C3	H4 The competency theories of students entering the labour market significantly differ from the background variables (gender, age, form of programme, type of course).	✓	✓	T2 Although competencies are always attached to a job, there can be certain shifts in stress depending on company size (employee number), ownership and profile (H3) as well as the socio-demographic characteristics of students and companies (H4).
C4	H5 The supporting corporate environment and organisational culture together with effective HR processes can enhance the development of personal and key competencies.	✓		T4 The new integrative model created according to my fourth objective (C4) makes suggestions and recommendations about the necessity of competency development and also draws attention to the importance of updating personal competencies
C4	H6 Education does not always develop the most important competencies in the labour market although it is not exclusively the task of education. There is a need for harmonising HR/labour market needs with education not only in terms of trainings but also competency development. There are gaps between the competency theories of employers (HR specialists) and students whose harmonisation and correspondence is a must.	✓		T4 The new integrative model created according to my fourth objective (C4) makes suggestions and recommendations about the necessity of competency development and also draws attention to the importance of updating personal competencies
C3	H7 While certain competencies are appreciated and others are pushed in the background, by and large the role of competencies will be greater in the future in selection and person-job fit as well as in specialist training.	✓		T1 During my examination I have assigned a unique competency mix in the questionnaire of employees (correspondent students), would-be employees (full-time students) and employers (business sector and selection specialists) as well as in the interviews with professionals

Source: research in 2014.

4. CONCLUSIONS AND RECOMMENDATIONS

After reviewing and analysing the literature on the topic I have managed to fulfil my first objective (C1). Although this term is so ‘fashionable’ nowadays, still there are a lot of different interpretations so the situation could be improved by creating a unified definition.

I have dealt with the role of competencies partly in human resource management (especially in selection, performance appraisal, wages and salaries, development, career management, integrated human resource information systems and other social applications) and in education and also by exploring their common points the second objective (C2) has also been accomplished, which is also connected to the secondary phase.

In the quantitative phase of my 2014 research a unique competency mix was assigned to my questions and groups of questions. This simplified (basic and special) competency structure can help a lot in making trainings more effective and can be relevant in education. In this way my third objective (C3) has also been met.

My fourth objective in my research (C4) was aimed at creating an integrated, personal competency-based model that stresses their reassessment and the necessity of updating them with regards to corporate requirements and economic higher education trainings. The analysis can also assist the business sector and education by suggesting possible future trends.

The four research objectives above serve as a basis for seven hypotheses and four new and novel scientific results.

In the following part I am going to summarise my hypotheses with their acceptance or rejection.

OBJECTIVE	HYPOTHESIS	ACCEPTED	REFUSED	NEW AND NOVEL SCIENTIFIC RESULTS
C2	H1 The definition of competency differs from one area of science to another similarly to the judgment of the significance of knowledge, skills and abilities.	✓		T2 Although competencies are always attached to a job, there can be certain shifts in stress depending on company size (employee number), ownership and profile (H3) as well as the socio-demographic characteristics of students and companies (H4).

The **first hypothesis is accepted** on the basis of the questionnaire for employers in the quantitative phase as well as the questions for full-time and correspondent students (C 1,3,4,5; F 1,2,3,4; E 1.). The facts above highlighted that in addition to knowledge and special skills competencies also play a significant part in everyday working life so that is why they should be used on purpose in the process of selection, too.

OBJECTIVE	HYPOTHESIS	ACCEPTED	REFUSED	NEW AND NOVEL SCIENTIFIC RESULTS
C2	H2 On the basis of the theory of competing competencies different competency elements are stressed but the role and significance of personal competencies are reflected in corporate requirements.	✓		T3 My examinations have highlighted the reassessment of personal competencies and the topicality of their changes, which can significantly be supported by backing organisational culture.

My second hypothesis is also accepted on the basis of semi-structured interviews, i.e. the results of the qualitative phase and Question 3 in the questionnaire for employers. The importance of personal competencies was even reflected in Question 1 where in addition to the key competencies of foreign language, communication and IT skills they were represented by an element called self-knowledge at the top of the list. On the basis of the questionnaire for employers we can also conclude that personal competencies

such as endurance, flexibility and self-improvement have been appreciated and companies strive to develop self-improvement, reliability, sense of responsibility and loyalty/dedication most.

OBJECTIVE	HYPOTHESIS	ACCEPTED	REJECTED	NEW AND NOVEL SCIENTIFIC RESULTS
C2 C3	H3			T2
	Although competencies are always job-specific and related to professions, certain shifts in stress can be detected depending on company size (number of employees), ownership and profile within (personal) competencies.	✓	✓	Although competencies are always attached to a job, there can be certain shifts in stress depending on company size (employee number), ownership and profile (H3) as well as the socio-demographic characteristics of students and companies (H4).

I was hoping to obtain a response from the semi structured interviews on the one hand, and Questions 12, 14 and 15 in the questionnaire for employers. Although I could not prove a correlation between competencies and corporate size/ownership/profile statistically, certain shifts in stress were noticed. On the basis of the abovementioned facts the **third hypothesis had to be rejected partly**.

OBJECTIVE	HYPOTHESIS	ACCEPTED	REFUSED	NEW AND NOVEL SCIENTIFIC RESULTS
C3	H4			T2
	The competency theories of students entering the labour market significantly differ from the background variables (gender, age, form of programme, type of course).	✓	✓	Although competencies are always attached to a job, there can be certain shifts in stress depending on company size (employee number), ownership and profile (H3) as well as the socio-demographic characteristics of students and companies (H4).

The fourth hypothesis was partly accepted based on Questions 18-22 in the questionnaire for correspondent students and Questions 16-19 in the questionnaire for full-time students. Correlation was entirely proved between competencies and type of course (programmes) although the connection between competencies and gender/age strongly fluctuated depending on the form of programme.

OBJECTIVE	HYPOTHESIS	ACCEPTED	REJECTED	NEW AND NOVEL SCIENTIFIC RESULTS
C4	H5			T4
	The supporting corporate environment and organisational culture together with effective HR processes can enhance the development of personal and key competencies.	✓		The new integrative model created according to my fourth objective (C4) makes suggestions and recommendations about the necessity of competency development and also draws attention to the importance of updating personal competencies.

Based on the answers for Question 6 in the questionnaire for correspondent students and Question 5 for full-time students the would-be and current employees appreciated self-improvement, trainings and self-realisation more than material incentives, which add to an ideal workplace. The also agreed on the vital role of improving competencies as they also use competencies together with knowledge in everyday life. In this way **Hypothesis 5 is accepted.**

OBJECTIVE	HYPOTHESIS	ACCEPTED	REJECTED	NEW AND NOVEL SCIENTIFIC RESULTS
C4	H6			T4
	Education does not always develop the most important competencies in the labour market although it is not exclusively the task of education. There is a need for harmonising HR /labour market	✓		The new integrative model created according to my fourth objective (C4) makes suggestions and recommendations about the necessity of competency development and also draws attention to the

needs with education not only in terms of trainings but also competency development. There are gaps between the competency theories of employers (HR specialists) and students whose harmonisation and correspondence is a must.

importance of updating personal competencies.

To test this complex hypothesis several replies were analysed and evaluated statistically both from the questionnaires for correspondent students (Questions 8,10,13,16,17) full-time students (Questions 9,11,14,15) and employers (Questions 9,10). Respondents agreed on the importance of competency development and although they assigned importance to different competency mix per areas of science, personal competencies were also stressed here. Education and training has a key role in better harmonisation and correspondence either in its institutionalised forms (adult trainings) or self-improvement (such as LLL, LWL). The latter part of the hypothesis was accepted on the basis of the semi-structured interviews according to which a greater harmonisation between the parties is necessary about the required and vital competencies on the labour market. Indeed, this task is not easy due to the constant changes on the market but it is not only the task of education and its institutions but also individuals in the form of self-improvement and trainings. Based on the facts above **Hypothesis 6 has been accepted.**

OBJECTIVE	HYPOTHESIS	ACCEPTED	REJECTED	NEW AND NOVEL SCIENTIFIC RESULTS
C3	H7			T1
	While certain competencies are appreciated and others are pushed in the background, by and large the role of competencies will be greater in the future in selection and person-job fit as	√		During my examination I have assigned a unique competency mix in the questionnaire of employees (correspondent students), would-be employees (full-time students) and



well as in specialist training.

employers (business sector and selection specialists) as well as in the interviews with professionals.

Hypothesis 7 has entirely been accepted on the basis of the questionnaire for correspondent students (Questions 7,8,9,14,15) full-time students (Questions 6,7,8,12,13) and employers (Questions 2,7,8). During the interviews 80% of the respondents suggested further appreciation of competencies in the future, 15% of them anticipated no change while 5% were sceptic about further appreciation expressing their doubts that after the current flourishing the stress on competencies will be diminishing.

In the following section I will summarise in short my most important **conclusions and recommendations** based on the primary and secondary research.

As there is no unified definition for competencies either in national or international literature I would recommend **working out a definition for each branch of science**.

The importance of the so-called **modern entrepreneurial competencies** (ICT: communication, foreign language, IT) has been revealed, which is in perfect harmony with the requirements of the business sector. I would suggest **developing these competencies more intensively either under institutionalised circumstances (at schools) or non-formal education**.

Of course, the explanation for the differences regarding the relevance or development of a competency lies in the fact that competencies are position and job-related but in my research I also made note of *certain shifts in stress* (and diverse special competencies) depending on company size and profile.

As competency development was regarded important both by (would-be) employees and employers **I would recommend** the contribution of a **supporting organisational culture** to certain personal competencies (such as self-improvement).

However, it must be noted when talking about the role of personal competencies that **updating them and putting a proper stress on them is of vital importance in the content of the training**, which could promote (better) harmonisation between the labour market and education. This is the essential aspect which I integrated in **my new model based on personal**

competencies and made some suggestions for the business sector and education regarding the process of selection and training, respectively.

As a result, I have proved the **further appreciation of competencies in the future** based on the opinion of the respondents.

In addition, I have also concluded that **it is necessary to improve the practical side of education and developing professional and general skills and abilities**. It is one of the points where the dialogue between the labour market and education could be improved.

Implementation of the main results of the research

In my opinion my dissertation helps highlight what key business competencies are that can increase and increase the competitiveness and success of employees. Among others, I was striving to find an answer how competencies are re-evaluated and what are the skills and abilities that are no longer necessary for success in the labour market and also the ones that were not necessary before but now they have become indispensable. As set by one of my research objectives, an integrated, personal competency based model was also created that draws attention to the reassessment and updating personal competencies with special regards to selection and person-job fit as well as the problem of flexibility in education and also makes relevant recommendations for the selection specialists of the future.

Further directions of the research in the future

As a further objective for the future I have set the analysis of competency and wages/salaries as well as to find an answer to the question of how corporate investment in trainings, education and competency development returns. A comparative, international analysis on general and specific competencies could also bring interesting results.

Another topic can be analysing the correlation between the organisational culture of multinational companies (corporations, transnational companies) and competencies.

5. LIST OF PUBLICATIONS ON THE RESEARCH TOPIC

I. Journals:

I/1. In Hungarian:

1. **Varga E.** (2008): A kompetenciák jelentősége az emberi erőforrás menedzsmentben és az oktatásban. *Perspective Tudományos és Kulturális folyóirat* XIII. évf. 14.szám. p.267-274. ISSN 1454-9921, Békéscsaba.
2. **Varga E.- Fodor M.- Csiszárik-Kocsir Á.- Szira Z.** (2009): A kompetenciák mérése az emberi erőforrás menedzsmentben és az oktatásban. *Humánpolitikai Szemle*, Budapest. 2009. 7.-8. szám, p.132-140., ISSN 0865-7009.
3. Bárdos I. K.- **Varga E.**-Vas I. - Szira Z. (2013): Kompetencia alapú humánerőforrás-menedzsment területek és a munkapiaci kompetencia-felsőoktatás kapcsolata egy primer vizsgálat tükrében. *Humánpolitikai Szemle*, Budapest. 2013. 7.-8. szám, p.132-140., ISSN 0865-7009.
4. Bárdos I. K.- Varga E. - Szira Z. (2014): Kompetenciák és jutalmazás/javalmazás az emberi erőforrás menedzsmentben. In: Nagy Imre Zoltán (szerk.): *Vállalkozásfejlesztés a XXI. században. IV. tanulmánykötet.* Budapest: Óbudai Egyetem Keleti Károly Gazdasági Kar, 2014. p. 327-335. ISBN: 978-615-5460-04-3.

I/2. In a foreign language:

1. Magda S.- Herneckzy A.- Marselek S.-**Varga E.** (2009): The situation of the Hungarian agricultural higher education. *Abstract: Applied Studies in Agribusiness and Commerce* Volume 3, No. 3-4, p.73-77. ISSN 1789-221.
2. Herneckzy A.- **Varga E.**- Marselek S. (2010): The role of skills and competencies in the national higher education and in the labour market. *Gazdálkodás English Special Edition* 54. évf., 24. különszám p. 16-25. ISSN 1586 4502.
3. Bárdos I. K. –**Varga E.** (2010): The reaction of corporate human resources management to the economic crisis *Periodica Oeconomica Eger* 2010/1. sz. p. 99-107. ISBN 2060-9078) <http://gti.ektf.hu/po.html>

I/3. Scientific conferences:

In Hungarian:

1. Tóth E.- Misinszki J. - **Varga E.** (2004): Heves megye munkaerő vizsgálata. KRF-IX. Tudományos Napok, Gyöngyös, 2004. március 25-26. Konferencia poszter, előadások összefoglaló kötete, CD p. 352. ISBN 963 2143132.
2. Tóth E.- Misinszki J.- Vanó P.- **Varga E.** (2006): A HEFOP tanfolyamok helye, szerepe a foglalkoztatás stabilitásának elősegítésében és a felnőttképzésben (Nagyító alatt a Károly Róbert Főiskolán megvalósuló HEFOP pályázat). X. Tudományos Napok, Károly Róbert Főiskola, Gyöngyös, 2006. március 30-31. Konferencia előadás, előadások összefoglaló kötete, CD p. 80. ISBN 963 2296230.
3. Hágén I.- Szabó F.- **Varga E.** (2006): Teljesítménymérés és teljesítménymenedzsment. X. Tudományos Napok, Károly Róbert Főiskola Gyöngyös, 2006. március 30-31. Konferencia előadás, előadások összefoglaló kötete, CD p. 134. ISBN 963 2296230.
4. Ficzeréné Nagymihály K.- Tóth E. – **Varga E.** (2007): A mezőgazdaság munkaerő helyzete, különös tekintettel Heves megye egyéni gazdaságaira. Konferencia előadás, Erdei Ferenc IV. Tudományos Konferencia. Kecskemét, 2007. augusztus 27-28. I. kötet p. 499 – 502. ISBN: 978-963-7294-63-10.
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