

THESES OF THE DOCTORAL (PhD) DISSERTATION

THE COMPETENCY-BASED APPROACH TO EMPLOYABILITY

AN EXAMINATION OF COMPETENCY EXPECTATIONS PLACED ON EMPLOYEES THROUGH JOB ADVERTISEMENT ANALYSES

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1. INTRODUCTION OF THE TOPICS AND OBJECTIVE

The selection of my research topic dates back to 2019 when I started to deal with the areas of employability and the labor market. Although the issue of successful employability had been investigated by numerous authors previously, the economic, social, and healthcare crises that have occurred in recent years, including the economic downturn, the emergence of the COVID-19 pandemic, and the Russo-Ukrainian conflict, have provided a new and intriguing foundation for research in this area. Until the summer of 2021, I conducted research in these aforementioned areas. Upon the recommendation of my supervisor, I commenced a content analysis study on the KarrierM online job portal. To facilitate comparison, I conducted job advertisement analyses on three occasions on the KarrierM job search platform and an additional case on Workline.hu. The data from these four samples formed the basis for the analysis in my doctoral dissertation. The primary objective of the dissertation was to survey the competencies and other expectations that employers placed on applicants in the job advertisements under examination. As a synthesis of both domestic and international competency definitions, I considered the following definition to be instructive in my work: competency is a combination of inherited and acquired knowledge/skills that renders an individual unique in the constantly evolving labor market (PIROHOV-TÓTH, 2022b). Minimal competency requirements explicitly stated in job advertisements and competencies identified under advantages were analyzed to examine the competencies demanded by employers. I regarded foreign language proficiency and computer skills as competencies included under advantages, while professional experience and possession of a driver's license were considered as other factors. My research commenced with an overview of employability and the labor market, extending from the field of human resource management (recruitment, selection) to the comprehensive mapping of competencies, taking into account the altered circumstances. Figure 1 illustrates the structure of the research.

The Key Objectives of the Research:

1. To uncover the competency requirements set by employers before and after the onset of the COVID-19 pandemic.
2. To gain insights into the competencies possessed by candidates aspiring to work in various sectors of the national economy and with varying educational backgrounds, and how these competencies contributed to their success in the labor market during the COVID-19 pandemic.
3. To provide a more precise understanding, through job advertisement analyses, of the competencies and other factors that gave candidates an advantage in the selection process, beyond the minimally expected competencies.
4. Lastly, to shed light on employer value propositions that encouraged job seekers to apply for specific positions.

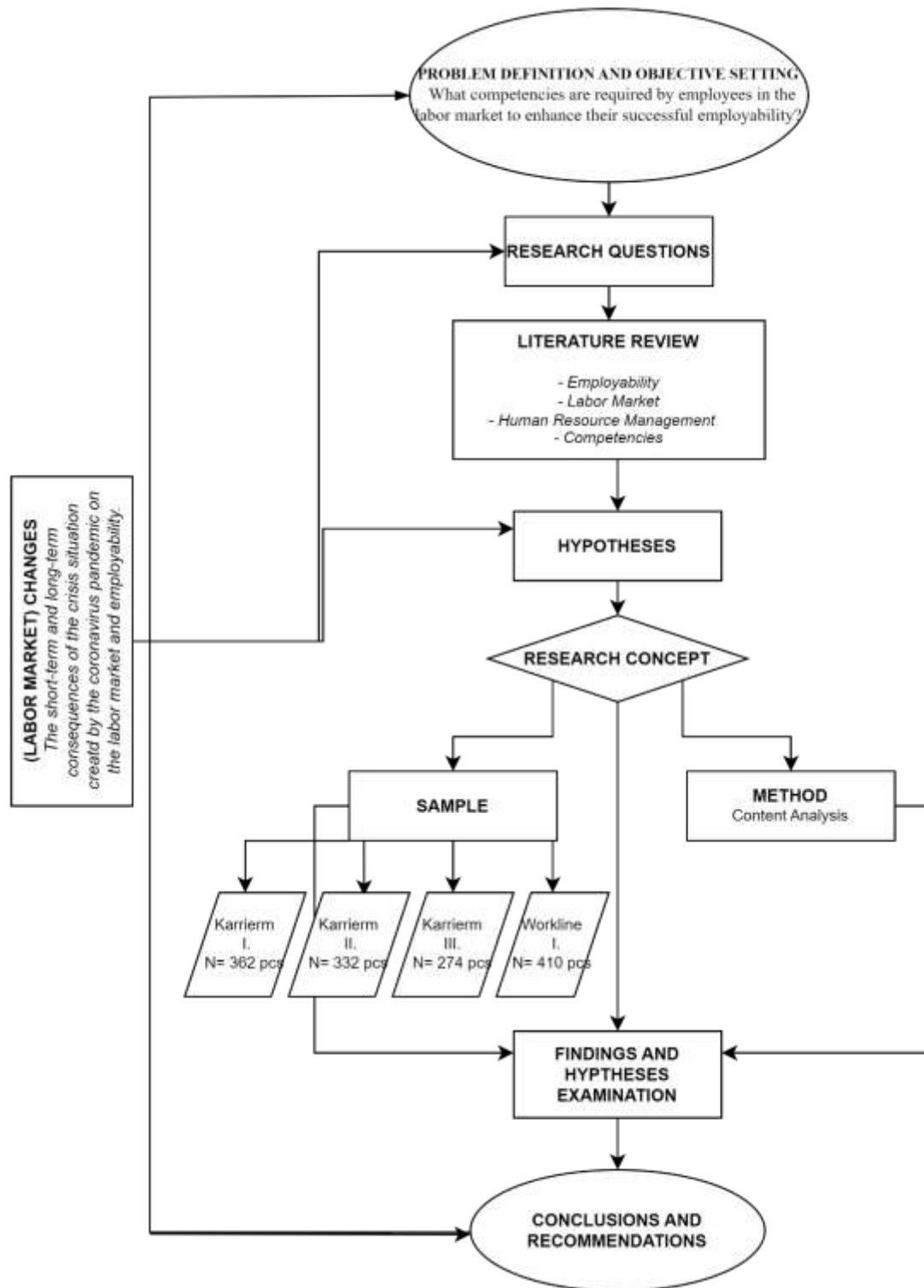


Figure 1: Flowchart of the Research Process

Source: own research

Questions of the Doctoral Dissertation:

- **Research_Question 1: Based on an analysis of relevant domestic and international literature, what competency requirements did employees need to meet prior to the COVID-19 pandemic?**
- **Research Question 2: During the periods of the COVID-19 pandemic, what competency requirements do candidates aspiring to work in different sectors of the national economy, as well as those with varying educational backgrounds, need to meet according to the online job advertisements included in the study?**
- **Research Question 3: What advantageous factors can be identified in the analyzed job advertisements beyond the minimally expected competency requirements?**
- **Research Question 4: What characteristics do employers aim to highlight in job advertisements to make them appealing to job seekers?**

In order to answer the research questions and formulate hypotheses, I conducted an analysis of domestic and international literature. Firstly, the dissertation provides an insight into different authors' varying definitions of employability (DEARING, 1997; HARVEY, 2006; KUN, 2008; HOGAN et al., 2013), models (FORRIER–SELS, 2003; KNIGHT–YORKE, 2006; THIJSSSEN et al., 2008), and international competency assessments related to employability (CHEERS, REFLEX, HEGESCO, TUNING PROJECT, AHELO). Within the section on the labor market, the main concepts and characteristics of the job market are also explored. Furthermore, the dissertation maps out the fundamentals of the relationship between higher education and the labor market, aiming to present the key aspects of human capital theory and changes in objective indicators of employability (employment, unemployment, economic activity, foreign employment) before and after the COVID-19 global pandemic. Following this, the paper delves into the demand side of the labor market, highlighting the main objectives and concepts of human resource management (HRM), job analysis, workforce recruitment and selection, as well as the characteristics of employer branding. Finally, we get to know various definitions (FALUS, 2005; DE LEENHER et al., 2010; VARGA-SZIRA, 2018), models (DeSeCo, Murray model, Sveiby model), and classification options of competency (e.g., hard/soft competencies, action/subjective competencies). Summarizing the acquired competency definitions, I defined competency as

follows: Competency is a combination of inherited and acquired knowledge/skills that make an individual unique in the continuously changing labor market (PIROHOV-TÓTH, 2022b).

The hypotheses of the doctoral dissertation:

- **Hypothesis 1: Significant changes in the most important competency expectations for employees can be observed between the period before and after the COVID-19 pandemic.** To test this hypothesis, a comparison was made between the competency requirements identified in the literature (including HÍVES, 2006; MILICZ-JENŐVÁRI, 2015; SUARTA et al., 2018; MANTAI-MARRONE, 2023) related to the period before the pandemic and the most important employer competency expectations observed during the analysis of job advertisements (after the pandemic).
- **Hypothesis 2: Significant differences in the expected competencies in job advertisements can be identified depending on the field of education, but no significant differences can be identified based on the level of education.** VASS (2020), PATÓNÉ et al. (2021), SZŰCS et al. (2021), and NÁRAI (2022) have pointed out the rearrangement of the most important competencies during various phases of the pandemic in their research. To test this hypothesis, during my own research, I examined changes in employer competency expectations based on education levels using data from KarrierM I, KarrierM II, KarrierM III, and Workline.hu job search platforms following the appearance of the COVID-19 pandemic.
- **Sub-Hypothesis 2.1: Employers have different competency requirements for employees in specific fields where the number of employed individuals increased or decreased compared to the previous quarter.** Several studies (e.g., NEMESKÉRI, 2014; SÓSKÚTI-HÉDER-RIMA, 2020) have previously shed light on the differing competency requirements of various fields. The novelty in testing this hypothesis lies in categorizing the participating fields in the sample into two groups (those with increasing or decreasing employment data in the respective period) based on data from the Central Statistical Office's employment statistics and subsequently analyzing the competencies expected by employers in each group.
- **Hypothesis 2.2: With an increase in educational qualifications, employers do not place greater or higher-level competency requirements on employees in the**

analyzed job advertisements. Although it may seem contradictory at first glance, PARK–KYEI (2011) pointed out in their study that the results of international PIAAC and PISA surveys did not reveal a strong correlation between the changes in educational qualifications and skills.

- **Hypothesis 3: In the analyzed job advertisements, there are advantageous factors (professional experience, foreign language proficiency, computer skills, driver's license) that reach the frequency of occurrence of the six most important competencies expected.** To support or refute this hypothesis, I examined the data from KarrierM II, KarrierM III, and Workline.hu job search platforms during various periods of the COVID-19 pandemic. The analysis of the literature highlighted that the importance of language skills appears to be increasing (ÁDÁM et al., 2017) due to the rise in EU labor migration by workers and the rapid expansion of multinational companies in Hungary (MAKAINÉ–MOMMERTZ, 2020). Consequently, the demand for language skills could be dominant in the analyzed job advertisements. Furthermore, it is likely that applicants with professional experience (KISS, 2014; KISS–MÁTÉ, 2016) and computer skills (PARK et al., 2009; NÁRAI, 2022) may be more successful in the selection process for the respective positions.
- **Hypothesis 4: The level of education and different field categories result in differences in employer value propositions presented in job advertisements.** In today's world, it is becoming increasingly important for companies to be attractive employers in the labor market, as this can significantly contribute to attracting talented employees. The role of motivating tools in work has already been researched in several previous studies (FERNANDEZ–LORES et al., 2016; JUHÁSZ, 2016; BODA, 2016; SÜLE-PÓKÁSZ, 2022). The aim of the investigation is to shed light on how employers try to capture the attention of job applicants through employer value propositions that can be classified as part of external branding in job advertisements, beyond financial benefits (KÖMÜVES et al., 2021; BADINSZKY, 2022).
- **Hypothesis 4.1: In the case of positions requiring different levels of education, different employer value propositions (employee value proposition) can be encountered in job advertisements.** I assume that with the increase in educational

qualifications, employers aim to attract applicants with differentiated employer value propositions (KHAN–NASEEM, 2015). Therefore, employers may use different factors to motivate candidates with lower educational qualifications than their graduate employees.

- **Hypothesis 4.2: Employers attempt to attract new and skilled labor with different methods in occupational categories where the number of employed individuals has increased or decreased compared to the previous quarter.** The novelty of the research is shown by the fact that in the domestic and international literature I examined, there was no research result of the relationship between the fields of expertise and the employer's value proposition. Moreover, the grouping of the specialized areas based on the Central Statistical Office may also appear as a new scientific result. Given the lack of previous findings, I formulated this hypothesis based on my own perspective.

2. DATA AND METHODOLOGY

In this chapter, the research methodology, the sampling method, and the characteristics of the samples are presented.

2.1 Methodology of the Research

Secondary Research

The dissertation introduces the research topic by analyzing domestic and international scientific articles, textbooks, and other online available works, documents, and statistical data. During the literature review, I first examined the conceptual differences and models of employability. Subsequently, I provided an overview of the domestic labor market both before and after the COVID-19 pandemic. Finally, the chapter on literature review was completed with a comprehensive exploration of competencies within the field of human resource science.

Content Analysis (Job Advertisement Analysis)

Content analysis, although it gained prominence with the advent of printed media in the 1950s, is attributed to HOLSTI (1969) as its first scientific approach. With the rise of the internet, its popularity has continued to grow over the last two decades within various academic disciplines (e.g., sociology, psychology, political science, economics). The basic definition of content analysis is a research method aimed at objectively, systematically, and quantitatively describing the manifested content of communication (BERELSON, 1952:18). The goal of content analysis is to systematically review and evaluate documents to discover meaning, enhance understanding, and develop empirical knowledge through a systematic procedure (CORBIN-STRAUSS, 2008). In the words of ANTAL (1976:15), content analysis refers to any procedure in which conclusions are drawn based on recurring characteristics in messages and communications. These conclusions are not explicitly stated in the communication but can be inferred from the manner in which the message is constructed, i.e., how it is encoded. Furthermore, they can be confirmed with other data obtained through different means. Another definition characterizes content analysis as a research technique that derives repeatable and valid inferences from texts (and other materials with meaning) to the contexts of their use (KRIPPENDORFF, 2004:18). HOLSTI

(1969) distinguished three fundamental applications: drawing conclusions regarding the antecedents of communication, describing the characteristics of communication, and making conclusions about the effects of communication. Through content analysis, the researcher explores the meanings of words, the messages conveyed by concepts, and the complex relationships among the concepts within focus group discussions, interviews, advertisements, or any other content. It derives insights from the occurrence of words and phrases and the relationships among definitions, essentially raising hypotheses about the source of communication (LEHOTA, 2001:53). Job advertisement analysis belongs to the research method of content analysis, which is a method of analysis whereby recorded communication facilitates the exploration of the studied area (MERSZ.HU, 2020). The main expectations and competencies mapped out based on job offers can be crucial not only for higher education institutions but also for corporate leaders, HR professionals, and recruiters. Collecting job advertisements can result in a measurable and comparable dataset for research, shedding light on changes in job roles (HARPER, 2012). Similarly, CZIBIK and colleagues (2012:11) articulated the advantages of job advertisement analysis, suggesting that "the method can be optimal for indicating short-term differentiations in labor demand, as well as between supply and demand, even with a low budget. However, a downside may be that it often overrepresents the requirements of larger companies and employers.

Interviews

Within the framework of primary research, qualitative interviews were conducted with labor market experts and individuals holding managerial positions involved in recruitment and selection processes. The purpose of the four interviews presented in the dissertation was to illustrate the results obtained through content analysis. There are several methods known for conducting interviews, among which I chose semi-structured interviews. The advantage of this method is that, in addition to answering predefined questions, the respondent has the opportunity, through open-ended questions, to elaborate on their opinions and insights (MCLNTOSH – MORSE, 2015). Individual data collection was conducted in terms of the number of participants. The data collection took place online at pre-arranged times with the interviewees. After introductory questions (e.g., company size/industry, individual job role), the main questions (e.g., changes in competency expectations) were pursued, and the interview concluded with closing thoughts on the topic.

Statistical Data Analysis

In my doctoral dissertation, to prepare the results and substantiate the hypotheses, I employed cross-tabulation analysis, Pearson's Chi-squared test, Cramer's V association coefficient, and binomial analysis. Hypothesis testing aims to verify whether our assumption holds in reality and is formulated in the form of a null hypothesis (H_0). We seek an answer to the question of how likely our observation is, assuming that the null hypothesis is true. During my hypothesis testing, I established a 10% level of significance for type I errors ($\alpha=10$). Cross-tabulation analysis is a widely used analytical method that examines the relationship between two or more variables and displays their combined frequency distribution (GYULAVÁRI et al., 2015). In cross-tabulation analyses, I employed the standardized adjusted residual, which, beyond indicating the existence of a relationship, identifies the categories (categorical variables) that contribute to these relationships (ÁCS, 2014) to ensure comparability of the data. Pearson's Chi-squared test examines the presence of a significant association between two qualitative variables (nominal or ordinal measurement level). The test investigates significant discrepancies between a theoretical/conditional frequency table and an empirical frequency table. Of these, the former represents the independence of the two variables, meaning that if we identify a significant difference, we can conclude that there is a statistically significant association between the two variables (UGONI-WALKER, 1995). In the case of hypotheses, I determined the strength of the relationship using the Cramer's V coefficient. The coefficient always ranges between 0 and 1. To determine the intensity of the relationship, I applied CREWSON's (2016) classification:

- 0.0 $\rightarrow$ absence of a relationship
- 0.1 – 0.29 $\rightarrow$ weak relationship
- 0.3 – 0.49 $\rightarrow$ moderately strong relationship
- > 0.5 $\rightarrow$ strong relationship

It is generally accepted in cross-tabulation analyses that the expected frequency in each cell should be at least 5. In other words, the expected frequency can be less than 5 in a maximum of 20% of all cells. To support or refute the third hypothesis, I used binomial testing, comparing the observed relative frequencies of two variables based on the binomial distribution (HUZSVAI, 2004).

2.2. Sampling and Data Collection

In my analysis, I aimed to uncover employer expectations towards employees using data from online job search platforms. This exploratory research focused on processing the content and information of advertised job positions. The two-step data collection process began by selecting online job search platforms that are easily accessible to anyone, have a manageable size of data, and allow for the indication of competency requirements in job advertisements. The Workline.hu and KarrierM.hu job portals met these criteria. In the second step, the samples comprising job offers were collected. It's worth noting that only job advertisements that specified at least one competency requirement towards applicants were included in the sample. Therefore, advertisements without competency requirements were not analyzed. Consequently, the number of jobs examined during four different periods and the number of jobs available on the two job search platforms during each period did not match. The data of the sample were recorded in a Microsoft Excel document, including the following variables: field of expertise, job position, county, required level of education, nature of employment, competencies, benefits, required experience, knowledge of foreign languages, and "what we offer." This was followed by coding the various contents, which became essential for conducting statistical analyses. I also want to highlight the limitations of the research; data were collected from two different job portals during four different periods, with data collected three times from KarrierM.hu and once from the Workline.hu website. For this reason, the results cannot be directly compared, since different positions were examined in the different phases. Additionally, employers may have had different opinions regarding the importance of various competencies during different periods of the COVID-19 pandemic.

2.3. Characteristics of the Sample Data

The collection took place on two different online job search platforms during various time periods as follows:

- Karrierm I Data Collection – July 18, 2021, to August 13, 2021.
- Karrierm II Data Collection – December 1, 2021, to December 28, 2021.
- Karrierm III Data Collection – February 1, 2022, to February 28, 2022.
- Workline.hu I Data Collection – April 4, 2022, to April 29, 2022.

The changes in the samples regarding regions, fields of expertise, and educational qualifications are summarized in Table 1.

Table 1: The main characteristics of job advertisements

Area/ County	KarrierM (%)			Work- line (%)	Field of Expertise	KarrierM (%)			Work- line (%)	Educational Qualification		KarrierM (%)			Wor kline (%)
	I.	II.	III.			I.	I.	II.				III.	I.	II.	
Budapest	15	17	4	0	State administration/ public administration	1	0	1	0	Eleme ntary Schoo l Educa tion	No Elementary School Education,	0	3	3	22
Pest	17	9	4	8	Assistance/ Administration/ Customer Relations	1	8	9	8		Elementary School Education	14	17	16	
Hajdu- Bihar	8	8	9	9	Banking/ Insurance/ Financial Institutions	9	3	2	0	Seco ndary Schoo l Educa tion	Vocational School	33	30	34	46
Borsod- Abauj- Zemplen	8	8	8	0	Procurement/ Logistics	0	0	0	5		Vocational School with Craft Training	14	17	13	
Zala	9	3	3	13	Security/ National Defense	0	1	1	0		Grammar School	8	6	11	
Szabolcs- Szatmar- Bereg	6	6	9	0	Healthcare/ Social Services	3	4	1	0		Specialized training	4	3	3	
Heves	5	5	5	4	Other Occupations	3	5	6	3		OKJ professiona l qualificatio n	3	3	5	
Somogy	4	2	2	8	Energy/ Electrics	2	1	3	1	Highe r Educa tion	Bachelor's Degree	20	18	14	32
Vas	3	2	1	7	Construction/ Real Estate	9	13	15	0		Master's Degree	4	3	1	
Veszprem	3	3	3	5	Human Resources	1	2	0	3		Doctoral Degree	0	0	0	
Fejer	3	3	2	7	Tourism/Hotel/ Hospitality	9	8	6	1	Total		362 pcs =100	332 pcs =100%	274 pcs =100%	410 pcs=100%
Bacs-Kiskun	3	3	10	8	IT/Computer Science/ Telecommunicati ons	4	6	0	3						
Nograd	2	3	3	0	Industry	0	0	0	6						
Csongrád- Csanad	2	9	7	6	Commerce/Sales/ Service	9	11	20	8						
Baranya	2	5	6	7	Technical/ Engineering	6	8	5	14						
Bekes	2	7	7	2	Education	8	3	2	—						
Gyor- Moson- Sopron	2	2	1	8	Finance/ Accounting	4	5	5	5						
Komarom- Esztergom	1	2	4	4	Skilled Labor/ Manual Labor	19	10	16	25						
Tolna	0	0	9	1	, Production/ Manufacturing/ Transportation	13	8	8	18						
Jász- Nagykun- Szolnok	5	3	3	3	Total	362 pcs =100	332 pcs =100%	274 pcs =100%	410 pcs=100%						
Total	362 pcs=100%	332 pcs=100%	274 pcs=100%	410 pcs=100%											

Source: own research, based on the results of the analysis

3. MAIN FINDINGS OF THE DISSERTATION

The main findings of the doctoral dissertation are presented in relation to the conditional answers (hypotheses) given to the research questions.

Hypothesis 1 (H1): *Significant changes can be observed in the most important competence requirements affecting employees in the period before and after the coronavirus pandemic.* To test the first hypothesis, a comparison was made between the competence requirements identified in the literature (pre-pandemic period) and the most important employer competence expectations observed during the pandemic periods in the analysis of my own job advertisements. Previous authors (including HÍVES, 2006; MILICZ–JENŐVÁRI, 2015; SUARTA et al., 2018; MANTAI–MARRONE, 2023) have pointed out that prior to the emergence of the COVID-19 virus, communication skills, teamwork, and the ability to work independently were the competencies most expected from employees. The occurrence frequency of competencies identified during the job advertisement analysis conducted on KarrierM I, KarrierM II, KarrierM III, and Workline.hu data was illustrated using Pareto diagrams. Subsequently, the most important competencies were summarized in tabular form (Table 2) for comparison with previous literature results.

Table 2: Summary of the most important competencies

Serial Number	<i>KarrierM Job Search Site</i>			<i>KarrierM Job Search Site</i>
	I. Examination	II. Examination	III. Examination	I. Examination
	2021, July 18 – 2021, August 13	2021, December 1 – 2021, December 28	2022, February 1 – 2022, February 28	2022, April 4 – 2022, April 29
1.	Independent Work	Independent Work	Reliability	Precision
2.	Reliability	Reliability	Independent Work	Independent Work
3.	Teamwork	Teamwork	Teamwork	Communication Skills
4.	Resilience	Accuracy	Resilience	Accuracy
5.	Adherence to Rules	Resilience	Accuracy	Reliability
6.	Customer Orientation	Communication Skills	Collaboration Skills	Problem-Solving Skills

Source: own research, based on the results of the analysis

Based on the results, it can be observed that with the onset of the pandemic period, employers uniformly expected only independence, reliability, and teamwork skills from employees in all four examined periods. This indicates differences in the competency requirements presented in job advertisements, both in terms of their occurrence and their ranking. However, several competencies appeared in two or three databases as essential.

Only three competencies (adherence to rules, customer orientation, and problem-solving skills) were identified in just one case each among the most critical competencies. The results from the examined periods show that among the most important competency expectations identified in the literature analysis, independence and teamwork capabilities seem to be confirmed in all four of the researcher's own databases, while communication skills were confirmed in two instances: KarrierM II and the Workline.hu database. Based on this, Hypothesis 1 (H1) was rejected, indicating that significant competency differences between the pre-COVID-19 and pandemic periods could not be identified. The professionals involved in the qualitative examination of the dissertation agreed with the results of H1 but emphasized the need to expand the competencies and knowledge of employees after their selection. Larger companies are willing to invest more time and resources in employee development to gain a competitive advantage over other companies by nurturing employees who best fit the organizational culture. My assumption that the lack of job advertisement updates could be behind the obtained results was not substantiated by the interviews.

Hypothesis 2 (H2): Significant differences in the expected competencies in job advertisements can be identified based on the field of expertise but not based on the level of education. VASS (2020), PATÓNÉ et al. (2021), SZŰCS et al. (2021), and NÁRAI (2022) have pointed out the reordering of the most critical competencies during various waves of the pandemic in their research. To test this hypothesis, I examined changes in employer competency expectations based on education in the KarrierM I, KarrierM II, KarrierM III, and Workline.hu job search site data following the onset of the coronavirus pandemic.

2.1 Sub-hypothesis: Employers have different competency requirements for employees in occupational groups where the number of employees increased or decreased. First, I separately examined the competency requirements for different occupational groups in each of the four samples, based on whether, according to the data from the Hungarian Central Statistical Office (KSH), the number of employees in the respective industry increased (upward-trending sector) or decreased (downward-trending sector) during the study period. In addition to cross-tabulation analysis, I also verified the relationships between competencies and occupational groups using Pearson's Chi-squared test (Table 3).

Table 3: Examination of the Relationship Between Fields of Expertise and Competencies

Competencies	KarrierM Job Search Site I. 2021, July 18 – 2021, August 13			KarrierM Job Search Site II. 2021, December 1 – 2021, December 28			KarrierM Job Search Site III. 2022, February 1 – 2022, February 28			Workline.hu Job Search Site I. 2022, April 4 – 2022, April 29		
	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value
<i>Teamwork</i>	28,74 -0,28	2	0	1,9 -0,08	2	0,39	6,22 -0,12	2	0,05	0,36 -0,03	2	0,83
<i>Accuracy</i>	13,66 -0,19	2	0	0,56 -0,04	2	0,75	0,29 -0,03	2	0,87	0,11 -0,02	2	0,94
<i>Communication Skills</i>	9,15 -0,16	2	0,01	3,65 -0,11	2	0,16	5,68 -0,12	2	0,06	8,49 -0,14	2	0,01
<i>Time Management Skills</i>	1,68 -0,07	2 –	0,43									
<i>Reliability</i>	5,13 -0,12	2	0,08	13,87 -0,2	2	0	12,68 -0,18	2	0	5,54 -0,12	2	0,06
<i>Independence</i>	21,13 -0,24	2	0	1,34 -0,06	2	0,51	6,21 -0,12	2	0,05	4,07 -0,1	2 –	0,13
<i>Collaboration</i>				0,78 -0,05	2	0,68	1,09 -0,06	2	0,58			
<i>Resilience</i>	13,51 -0,19	2	0	11,35 -0,19	2 –	0	5,34 -0,11	2	0,07	1,47 -0,06	2	0,48
<i>Flexibility</i>	0,36 -0,03	2	0,84	0,19 -0,02	2 –	0,91	6,46 -0,15	2	0,04			
<i>Precision</i>				5,14 -0,12	2 –	0,08	3,64 -0,09	2	0,16	1,61 -0,06	2	0,45
<i>Problem-Solving Skills</i>	12,7 -0,19	2	0	8,05 -0,16	2	0,02	0,11 -0,02	2	0,95	0,11 -0,02	2	0,95
<i>Critical and Analytical Thinking</i>	34,51 -0,31	2	0	4,75 -0,12	2	0,09	3,29 -0,11	2	0,19			
<i>Adherence to Rules</i>	0,14 -0,02	2	0,93	4,45 -0,12	2	0,11	12,6 -0,22	2	0			
<i>Attention Concentration Skills</i>	2,22 -0,08	2	0,33	2,04 -0,08	2	0,36	2,84 -0,1	2	0,24			
<i>Customer Orientation</i>	12,15 -0,18	2	0	1,29 -0,06	2	0,53	6,66 -0,13	2	0,04	12,43 -0,17	2	0
<i>Learning and Self-Development Skills</i>	2,13 -0,08	2	0,35	2,69 -0,09	2	0,26	2,25 -0,09	2	0,32			
<i>Technical and Mechanical Skills</i>				3,44 -0,1	2	0,18						
<i>Planning and Organization</i>	5,69 -0,13	2	0,06									
<i>Tolerance for Monotony</i>										2,82 -0,08	2	0,25
<i>Proactivity</i>										2,49 -0,08	2	0,29

Source: own research, based on the results of the analysis

Note: Significant relationships are indicated in bold in the table.

Based on the results from the four databases, I was able to reject the null hypothesis and assume the presence of a significant relationship for the following competency expectations: teamwork, customer orientation, critical and analytical thinking, communication skills,

problem-solving ability, reliability, and workload capacity. Fewer competencies were identified that were expected in only one category. In the case of declining fields of expertise, the job postings expected independent work, planning and organizational skills, and precision. While job postings from the growing fields of expertise focused on the ability to work flexibly. In light of these results, I did not reject sub-hypothesis H2.1. After examining this sub-hypothesis, the competencies identified in various sectors of the national economy were compared with the results of the Competency Model Clearinghouse (Table 4).

Table 4: Comparison of industry competencies

Competencies	Construction/Real Estate		Finance		Healthcare/Social Services		Retail/Sales/Services Manufacturing		Production/Logistics	
	CMC	Own Database	CMC	Own Database	CMC	Own Database	CMC	Own Database	CMC	Own Database
<i>Teamwork</i>	X	X	X		X	X	X	X	X	X
<i>Collaboration Skills</i>		X		X		X				X
<i>Attention Concentration Skills</i>		X		X						X
<i>Time Management Skills</i>				X						
<i>Communication Skills</i>	X		X	X	X		X	X	X	X
<i>Creativity</i>					X				X	
<i>Critical and Analytical Thinking</i>		X	X	X					X	
<i>Reliability</i>		X		X		X		X		X
<i>Independent Work</i>		X		X		X		X		X
<i>Accuracy</i>		X		X		X		X		X
<i>Precision Work</i>				X				X		X
<i>Proactivity</i>				X						
<i>Problem-Solving Ability</i>	X	X	X	X	X		X	X	X	X
<i>Flexibility</i>			X	X		X				
<i>Adherence to Rules</i>	X			X						
<i>Learning and Self-Development Skills</i>	X			X	X				X	X
	X				X		X		X	X
<i>Resilience</i>		X		X				X		X
<i>Planning and Organization</i>			X		X		X		X	
<i>Customer Orientation</i>			X		X		X	X	X	

Source: own research, based on the results of the analysis

Among the examined sectors, the highest similarity (66%) with the data based on the Hungarian Central Statistical Office (KSH) was found in the field of production/manufacturing/logistics, which is considered an upward-trending area. The most important competencies for individuals working in this area were teamwork, communication, problem-solving ability, learning and self-development skills, as well as technical and engineering skills, according to the results of the Competency Model Clearinghouse (CMC). Furthermore, in the finance (57%) and retail/sales/services (56%) sectors, we also observe a high degree of similarity between competencies in both the own and international data samples. In contrast, in the downward-trending sectors such as construction/real estate (33%) and healthcare (13%), equivalent competencies were found to a lesser extent. In the former, teamwork and problem-solving ability were common competencies, while in the latter, only teamwork skills were identified as a shared point. Finally, as a summary of the most important competencies observed across the four databases, a competency map for the five industries included in the study was created. The consolidated competency map for the sectors is illustrated in Figure 2.

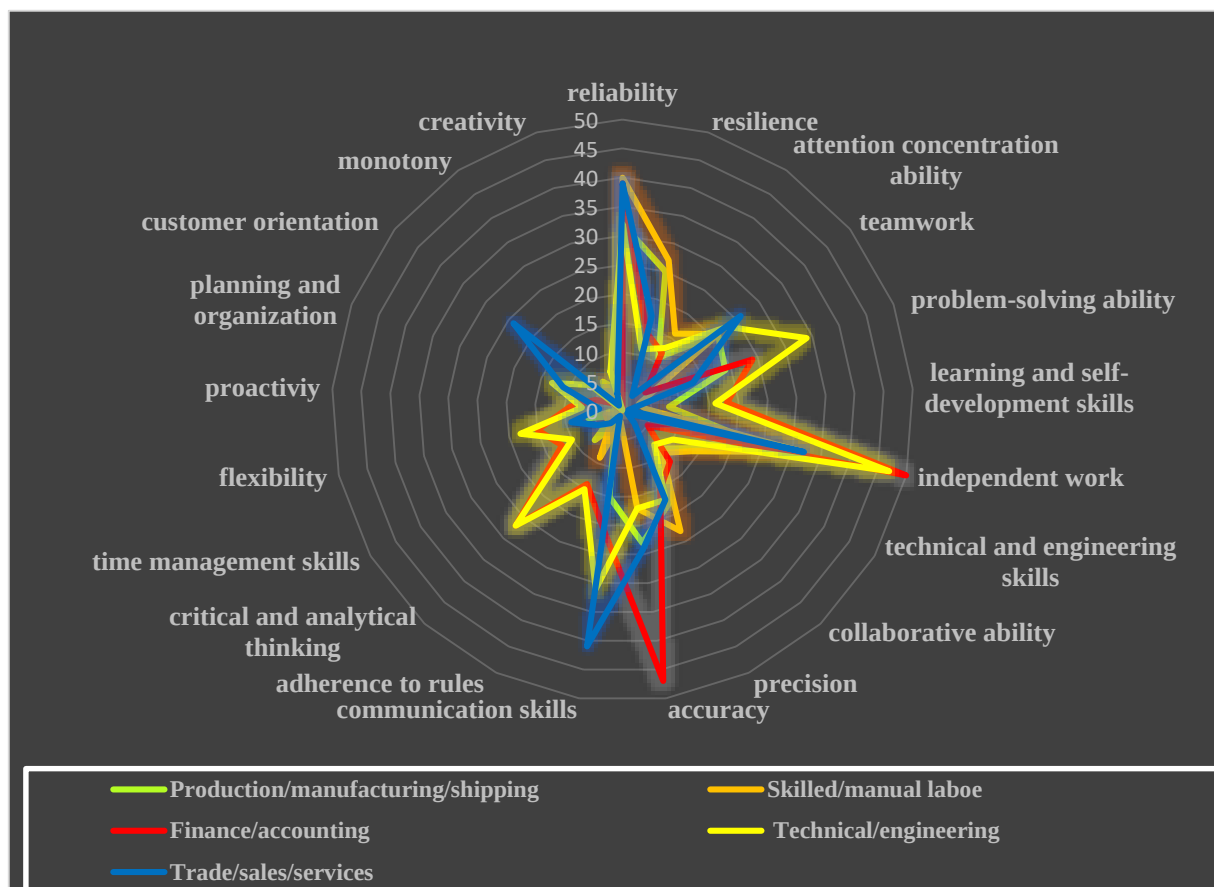


Figure 2: Aggregated Competency Map of Specializations

Source: own research, based on the results of the analysis

In comparison to other specializations, significantly fewer expectations were identified for the following competencies: ability to concentrate, learning and self-improvement skills, technical and engineering skills (commerce, sales, and services), teamwork (finance and accounting), problem-solving ability, and communication skills (skilled and physical labor). In contrast, the following competencies were significantly more frequently mentioned as employer requirements compared to other specializations: learning and self-improvement skills, precision, critical and analytical thinking, and flexibility (finance and accounting); learning and self-improvement skills, critical and analytical thinking, and flexibility (technical and engineering); communication and customer orientation (commerce, sales, and services).

H2.2 Sub-hypothesis: With an increase in educational qualifications, employers do not impose greater or higher-level competency requirements on employees in the analyzed job advertisements. The results of the Program for the International Assessment of Adult Competencies (PIAAC) and the Programme for International Student Assessment (PISA) support the idea that there is no strong correlation between educational qualifications and skills, but the skills of individuals with the same educational qualifications vary significantly across Europe (PARK–KYEI, 2011). Therefore, the question arose as to whether a certain correlation between educational qualifications and competencies could be identified in my own research sample, or whether the results would align with international research findings. To substantiate or refute my hypothesis, I grouped the cumulated results of the most important competencies identified in the four databases into a Venn diagram (Figure 3) based on the frequency of the highest educational qualifications expected in job advertisements.

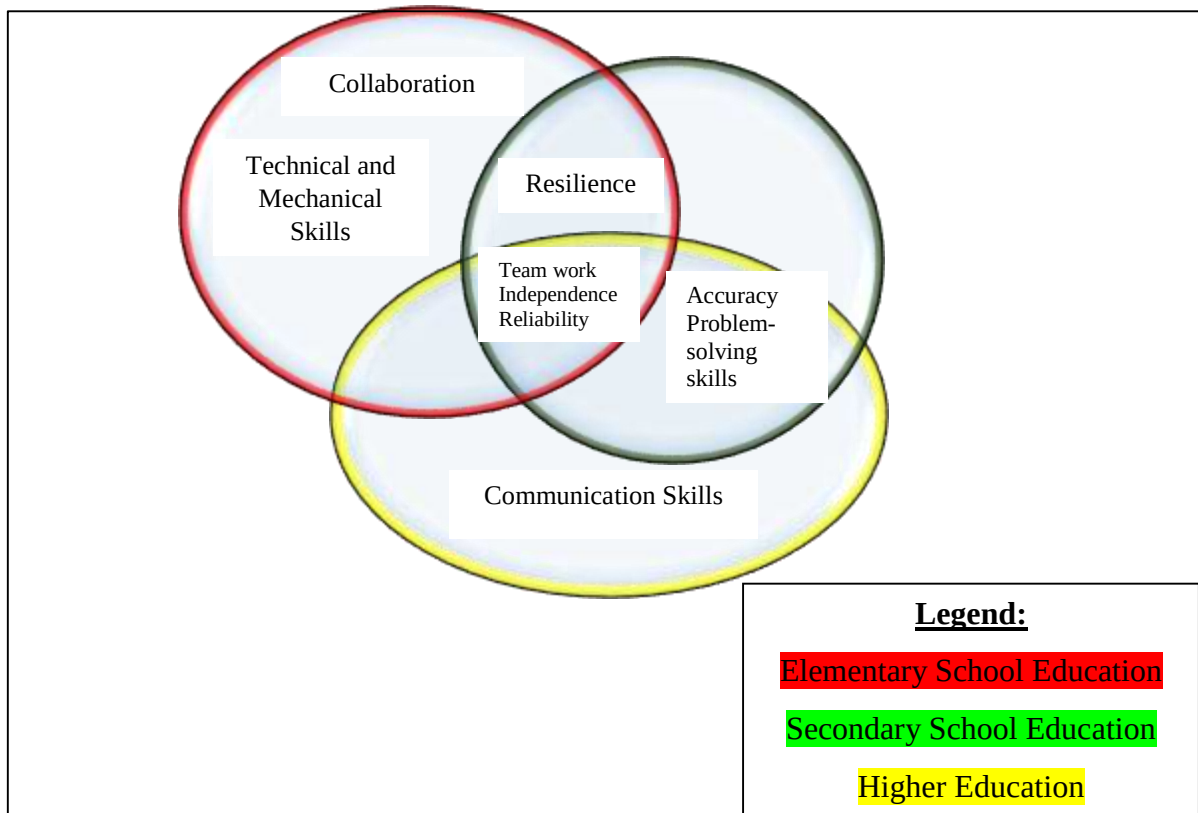


Figure 4: Evolution of the most important competencies based on the highest educational qualifications

Source: own research, based on the results of the analysis

It was observed that teamwork, reliability, and the ability to work independently had outstanding importance across all levels of educational qualifications. As the level of educational qualifications increased, significant differences were noted in the expected core competencies. These differences are likely attributed to the specific characteristics of individual job roles, as technical and engineering skills are more required in physical labor positions, while the demand for excellent communication skills becomes apparent in intellectual job roles. Among individuals with middle-level qualifications (328 pcs) and those with higher education (131 pcs), independent work emerged as the most important competency. In contrast, for individuals with a basic level of education, working in teams (126 pcs) was the most frequently expected competency. To statistically validate the results of the study, I also employed Pearson's Chi-squared test (Table 5).

Table 5: Examination of the relationship between educational qualifications and competencies

Competencies	KarrierM Job Search Site I. <i>2021, July 18 – 2021, August 13</i>			KarrierM Job Search Site II. <i>2021, December 1 – 2021, December 28</i>			KarrierM Job Search Site III. <i>2022, February 1 – 2022, February 28</i>			Workline.hu Job Search Site I. <i>2022, April 4 – 2022, April 29</i>		
	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value
<i>Teamwork</i>	13,58 -0,19	2	0	2,45 -0,09	2	0,29	0,79 -0,05	2	0,67	1,18 -0,05	2	0,55
<i>Accuracy</i>	6,82 -0,14	2	0,03	28,6 -0,29	2	0	3,44 -0,1	2	0,18	1,2 -0,05	2	0,55
<i>Communication Skills</i>	10,65 -0,17	2	0	32,58 -0,31	2	0	2,26 -0,08	2	0,32	27,19 -0,26	2	0
<i>Time Management Skills</i>	0,52 -0,04	2	0,77									
<i>Reliability</i>	4,32 -0,11	2	0,12	19,07 -0,24	2	0	1,36 -0,06	2	0,51	11,06 -0,16	2	0
<i>Independence</i>	4,41 -0,11	2	0,11	0,61 -0,04	2	0,74	0,63 -0,04	2	0,73	9,49 -0,15	2	0,01
<i>Collaboration</i>				4,72 -0,12	2	0,09	0,85 -0,05	2	0,65			
<i>Resilience</i>	13,36 -0,19	2	0	17,89 -0,23	2	0	0,76 -0,05	2	0,68	18,77 -0,21	2	0
<i>Flexibility</i>	2,6 -0,09	2	0,27	1,59 -0,07	2	0,45	3,69 -0,1	2	0,16			
<i>Precision</i>				6,96 -0,15	2	0,03				18,26 -0,21	2	0
<i>Problem-Solving Skills</i>	8,89 -0,16	2	0,01	7,79 -0,15	2	0,02	2,55 -0,08	2	0,28	18,37 -0,21	2	0
<i>Critical and Analytical Thinking</i>	16,86 -0,22	2	0	10,88 -0,18	2	0	2,24 -0,08	2	0,33			
<i>Adherence to Rules</i>	4,74 -0,11	2	0,09	3,57 -0,1	2	0,17	6,01 -0,13	2	0,05			
<i>Attention Concentration Skills</i>	0,49 -0,04	2	0,78	9,07 -0,17	2	0,01	1,3 -0,06	0	0,52			
<i>Customer Orientation</i>	21,95 -0,25	2	0	1,06 -0,06	2	0,59	0,36 -0,03	2	0,84	5,45 -0,12	2	0,06
<i>Learning and Self-Development Skills</i>	2,4 -0,08	2	0,3	5,45 -0,13	2	0,07	1,94 -0,07	2	0,38			
<i>Technical and Mechanical Skills</i>				12,15 -0,19	2	0						
<i>Planning and Organization</i>	1,17 -0,56	2	0,56									
<i>Tolerance for Monotony</i>										53,48 -0,28	2	0
<i>Proactivity</i>										31,03 -0,08	2	0

Source: own research, based on the results of the analysis

Note: Significant relationships are indicated in bold in the table.

In none of the four samples based on job advertisement analyses could a significant correlation be identified simultaneously for any of the competencies. However, several competencies showed significant associations with educational qualifications in two

(accuracy, reliability, precision, critical and analytical thinking, adherence to rules, customer orientation) or three (communication skills, problem-solving skills) databases. With the help of adjusted residual indicators, the competencies responsible for the significant associations were identified. Accordingly, it can be seen that the results of the most important competencies outlined in the Venn diagram, broken down by educational qualifications, were not always statistically confirmed. In the case of individuals with basic qualifications, only endurance and reliability, for those with intermediate qualifications, accuracy, problem-solving, and independent work were found to have a significant correlation. For those with higher education, teamwork, communication, problem-solving skills, and accuracy of competence exhibited a significant correlation. Nevertheless, the H2.2 hypothesis was rejected, which suggested that as educational qualifications increase, employers do not demand more and higher-level competencies from job seekers in the analyzed job advertisements, as the results highlighted the necessity of more specific competencies (e.g., critical and analytical thinking, proactivity) for those with higher education.

Hypothesis 3: In the analyzed job advertisements, there are certain advantageous factors (professional experience, foreign language proficiency, computer skills, driver's license) that reach the minimum expected occurrence frequency of the six most important competencies. Prior to testing the hypothesis, frequency analyses were conducted on the data from the KarrierM II, KarrierM III, and Workline.hu job search portals. In approximately half of the analyzed job advertisements, employers specified additional requirements. Contrary to the expected results, the demand for foreign language proficiency was only identifiable in a smaller portion of the samples (<38%). However, it was observed that the demand for foreign language proficiency increased proportionally with the expected highest level of education. The dominance of the English language was noticeable in this regard. Job seekers with prior professional experience had a significant advantage in the selection process. In terms of educational qualifications, there were significantly more job advertisements where prior professional experience was expected for positions requiring secondary and higher education than in the case of basic education. In general, employers required 1-3 years of experience. And although the experience gained during previous jobs can be an advantage during selection, in almost half of the cases even this was not indicated

as another expectation in the job advertisements. Furthermore, the results also highlighted that computer skills and a B category driver's license could be important for successful applications for specific positions. To validate or refute the third hypothesis, a binomial test was applied (Table 6).

Table 6: Significantly more frequently appearing aspects providing an advantage

Sample	Competencies	Test (%)	Advantages	Frequency	Sig.
<i>KarrierM II.</i>	Resilience	23%	Foreign language skills	28%	0,01
	Communication Skills	19%			0
<i>KarrierM III.</i>	Accuracy	22%	Professional experience	27%	0,03
	Resilience				
<i>Workline.hu</i>	Communication Skills	21%	Foreign language skills	33%	0
			Professional experience	32%	0
			Computer skills	29%	0
	Precision	19%	Foreign language skills	33%	0
			Professional experience	32%	0
			Computer skills	29%	0
	Independent Work	29%	Foreign language skills	33%	0,03
			Professional experience	32%	0,07
			Computer skills	29%	0
	Accuracy	22%	Foreign language skills	33%	0
			Professional experience	32%	0
			Computer skills	29%	0
	Problem-Solving Ability	16%	Foreign language skills	33%	0
			Professional experience	32%	0
			Computer skills	29%	0
	Reliability	19%	Foreign language skills	33%	0
			Professional experience	32%	0
			Computer skills	29%	0

Source: own research, based on the results of the analysis

In light of the results from the table, it is observable that there were certain advantageous factors that achieved the same level of competency occurrence as the minimum required competencies. Therefore, I cannot reject hypothesis H3. Hence, these competencies and other factors were demanded at least as much by employers, even if they were labeled as advantageous expectations rather than minimum requirements. It can be assumed that these are the minimal expectations in the labor market, or they may already be considered as such but are not explicitly treated as such in job advertisements for some reason.

Hypothesis 4: The level of educational attainment and the different occupational groups lead to differences in employer value propositions in job advertisements. Nowadays, it is increasingly important for companies to be attractive employers in the labor market, as this can greatly contribute to attracting talented employees. The role of work incentives has already been examined in several previous studies (FERNANDEZ – LORES et al., 2016; JUHÁSZ, 2016; BODA, 2016; SÜLE-PÓKÁSZ, 2022). The aim of this study is to shed light on how employers try to attract the attention of job applicants beyond financial benefits through job advertisements, which can be classified as external branding tools (KÓMÚVES et al., 2021; BADINSZKY, 2022). First, frequency analyses were conducted to summarize the data found in the "what we offer" section of the online job advertisements included in the study (KarrierM II, KarrierM III, Workline I). The results confirmed the dominance of financial benefits in the advertised positions. However, it can also be observed that factors related to job performance and working conditions seem to be increasingly emphasized in the study periods. Job advertisements that highlighted factors such as "long-term, stable employment," "cooperative team," or "modern working environment" were significantly common in trying to attract skilled labor. This suggests that employers are paying increasing attention to other factors that motivate work in job advertisements, in addition to financial considerations.

Hypothesis 4.1: Different employer value propositions (employee value proposition) can be encountered in job advertisements for positions requiring different levels of education. My assumption is that with increasing levels of education, employers intend to attract applicants with different employer value propositions (KHAN-NASEEM, 2015). Therefore, factors important for lower-educated individuals may differ from those for their university-educated colleagues in their approach to work. In the analysis, I examined Pearson's Chi-squared test, Cramer's V, and Adjusted Residual indicators (Table 7).

Table 7: Evolution of employer value propositions appearing in job advertisements based on the highest expected educational qualification

Employer Value Propositions	KarrierM Job Search Site II. 2021, December 1 – 2021, December 28			KarrierM Job Search Site III. 2022, February 1 – 2022, February 28			Workline.hu Job Search Site I. 2022, April 4 – 2022, April 29		
	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value	χ^2 (Cramer's V)	df	p-value
<i>Long-term, stable employment</i>	0,92 -0,05	2	0,63	0,66 -0,05	2	0,72	2,22 -0,07	2	0,33
<i>Permanent contract</i>							6,24 -0,12	2	0,04
<i>Immediate job commencement</i>									
<i>Flexible work</i>									
<i>Home office</i>									
<i>Competitive income</i>	9,88 -0,17	2	0,01	3,75 -0,12	2	0,15	5,8 -0,12	2	0,06
<i>Non-salary benefit system</i>	2,06 -0,08	2	0,36	2,31 -0,09	2	0,32	9,15 -0,15	2	0,01
<i>Travel support</i>	3,39 -0,1	2	0,18				4,83 -0,11	2	0,09
<i>Professional development opportunities</i>	16,87 -0,23	2	0	1,02 -0,06	2	0,6	2,17 -0,07	2	0,34
<i>Professional training</i>	6,84 -0,14	2	0,03						
<i>Professional challenges</i>	6,54 -0,14	2	0,04				15,43 -0,19	2	0
<i>Advancement opportunities</i>							0,14 -0,02	2	0,93
<i>Company bus trip</i>							25,17 -0,25	2	0
<i>Workwear/tools</i>	0,31 -0,03	2	0,86				2,13 -0,07	2	0,35
<i>Collaborative team</i>	19,58 -0,24	2	0	0,71 -0,05	2	0,7	7,27 -0,13	2	0,03
<i>Modern working environment</i>	8,59 -0,16	2	0,01	0,61 ^a 0,05	2	0,74	4,57 -0,11	2	0,1
<i>Supportive leadership</i>									
<i>Employee discounts</i>	1,55 -0,07	2	0,46				3,31 -0,09	2	0,19
<i>Sports facilities</i>									
<i>Onboarding system</i>									

Source: own research, based on the results of the analysis

Note: Significant relationships are indicated in bold in the table.

In the analysis of the KarrierM II. dataset, it was observed that the expected highest levels of education were significantly correlated with various job-incentivizing factors: home

office ($p < 0.01$), competitive income ($p < 0.01$), professional development opportunities ($p < 0.01$), cooperative team ($p < 0.01$), modern working environment ($p < 0.01$), professional challenges ($p < 0.05$), and professional training ($p < 0.05$). In the Workline.hu dataset, it was noted that the Pearson's chi-squared test yielded values less than 0.01 for non-salary benefit system, professional challenges, and company shuttle service. Consequently, the null hypothesis of independence between the variables (employer value propositions and levels of education) was rejected, and it can be stated with 99% confidence that there is a significant relationship between the criteria included in the study. Furthermore, 5% (indefinite contract, cooperative team) and 10% (competitive income, travel support, modern working environment) significance-level differences were identified in the analyzed database. For positions requiring basic-level education, the dominant employer value propositions were the non-salary benefit system and travel support. In contrast, employers attempted to attract candidates with competitive salaries in job advertisements targeting individuals with intermediate-level education. Therefore, for individuals with basic and intermediate levels of education, financial benefits appeared most frequently as employer value propositions. In the case of candidates with higher education, the focus shifted to the professional and substantive aspects of work, with job advertisements emphasizing professional development and challenges in the respective positions. In summary, the findings do not reject Hypothesis 4.1, which posited that different employer value propositions can be observed in job advertisements for positions requiring different levels of education.

Hypothesis 4.2: Employers use different means to attract new and skilled workers in occupational groups where the number of employees has increased or decreased compared to the previous quarter. The novelty of this research lies in the fact that no literature, both domestic and international, was available that examined the relationship between occupational groups and employer value propositions. Additionally, the classification of occupational groups based on data from the Central Statistical Office represents a new scientific contribution. In the absence of previous results, I formulated my hypotheses based on my own perspective. In the cross-table analysis, I attempted to demonstrate whether there is a relationship between the variables examined (employer value propositions and occupational groups) and, if so, the strength of the relationship (Table 8).

Table 8: Evolution of employer value propositions appearing in job advertisements based on the employment of specialist areas

Employer Value Propositions	KarrierM II. 2021, December 1 - 2021, December 28			KarrierM III. 2022, February 1 – 2022, February 28			Workline I. 2022, April 4 – 2022, April 29		
	χ^2	df	p-value	χ^2	df	p-value	χ^2	df	p-value
	(Cramer's V)			(Cramer's V)			(Cramer's V)		
<i>Long-term, stable employment</i>				7,11 -0,13	2	0,03	0,12 -0,02	2	0,94
<i>Permanent contract</i>				1,93 -0,07	2	0,38			
<i>Immediate job commencement</i>				3,45 -0,09	2	0,18	0,33 -0,03	2	0,85
<i>Flexible work</i>	4,11 -0,11	2	0,13	6,91 -0,13	2	0,03			
<i>Home office</i>	0,07 -0,01	2	0,97	0,98 -0,05	2	0,61	1,53 -0,06	2	0,47
<i>Competitive income</i>	3,47 -0,1	2	0,18	4,43 -0,1	2	0,1	3,49 -0,09	2	0,18
<i>Non-salary benefit system</i>	2,21 -0,08	2	0,33	1,46 -0,06	2	0,48	0,53 -0,04	2	0,77
<i>Travel support</i>	4,55 -0,12	2	0,1	7,88 -0,14	2	0,02	0,28 -0,03	2	0,87
<i>Professional development opportunities</i>	0,98 -0,05	2	0,61	6,43 -0,15	2	0,04			
<i>Professional training</i>	1,16 0,06	2	0,56	0,65 0,05	2	0,72	0,38 0,03	2	0,83
<i>Professional challenges</i>							2,41 -0,08	2	0,3
<i>Advancement opportunities</i>				3,54 -0,11	2	0,17	10,51 -0,16	2	0,01
<i>Company bus trip</i>	5,57 -0,13	2	0,06	2,45 -0,1	2	0,29	2,8 -0,08	2	0,25
<i>Workwear/tools</i>	10,98 -0,18	2	0	1,41 -0,07	2	0,49	14,44 -0,19	2	0
<i>Collaborative team</i>	5,48 -0,13	2	0,07	2,03 -0,09	2 –	0,36	4,33	2	0,12
<i>Modern working environment</i>									
<i>Supportive leadership</i>	0,22 -0,03	2	0,9				1,7 -0,06	2	0,43
<i>Employee discounts</i>	36,03 -0,32	2	0						
<i>Sports facilities</i>									
<i>Onboarding system</i>									

Source: own research, based on the results of the analysis

Note: Significant relationships are indicated in bold in the table.

The conducted Pearson's chi-squared test on the KarrierM II. job advertisement dataset identified significant correlations between fields of expertise and the appearance of "long-term, stable employment" ($p < 0.10$), "professional development opportunities" ($p < 0.10$), "workwear/tools provision" ($p < 0.10$), "collaborative team" ($p < 0.01$), and "sports facilities"

($p < 0.01$). When analyzing the KarrierM III. database, I was able to reject the null hypothesis of independence between motivational factors and fields of expertise in the following cases: "indefinite contracts" ($p < 0.05$), "home office" ($p < 0.05$), "non-salary benefits system" ($p < 0.10$), "professional development opportunities" ($p < 0.05$), "professional training" ($p < 0.05$), "promotion opportunities" ($p < 0.10$), and "sports facilities" ($p < 0.01$). Meanwhile, when examining the data from Workline.hu, 1% level significant connections were found between "collaborative team," "company bus services," and fields of expertise. Based on the obtained results, the hypothesis assumption was supported (not rejected). The results indicated that job offers from companies with more favorable employment statistics can provide job seekers with more significant, long-term, and rewarding employer value propositions (including indefinite contracts, development, and advancement opportunities). In contrast, job advertisements in fields with declining employment data during the study periods only offered job seekers essential tools and equipment necessary for the job.

4. NEW AND NOVEL RESULTS OF THE DISSERTATION

In my dissertation, based on both secondary and primary research, I shed light on the following novel and innovative scientific findings:

- There was no confirmation of differing competency expectations between the periods before and after the COVID-19 pandemic (Hypothesis 1).
- Employers pose varying competency requirements to employees in occupational groups where the number of employees has increased or decreased (Hypothesis 2.1). With the increase in educational qualifications, employers have distinct competency demands (Hypothesis 2.2).
- Examined job advertisements included factors granting advantages (professional experience, language skills, computer literacy, driver's license) that reached the occurrence frequency of the six most essential competencies minimally expected (Hypothesis 3).
- There was demonstrable divergence in the employer value propositions outlined in job advertisements for individuals with higher education qualifications (Hypothesis 4.1).
- Different employer value propositions emerged for occupational sectors displaying increasing and decreasing employability data (Hypothesis 4.2).

5. PRACTICAL APPLICABILITY OF THE RESULTS

The results of the dissertation based on job advertisement analysis can be beneficial in the following cases for individuals, education, human resource management, and companies:

- The findings provide a more accurate understanding of changes in competency requirements during the studied periods for employees, the unemployed, students, and those newly entering the labor market.
- Knowledge of competency expectations towards employees based on the advertised job position (competency maps) and required educational qualifications, as revealed in my research, can further facilitate the orientation of applicants regarding the requirements they need to meet to increase their chances of successful employment.
- As the results of the dissertation have pointed out, the role of competencies is continuously growing in comparison to formal qualifications. Therefore, equipped with up-to-date information, career offices can benefit from building competencies more consciously.
- The identified employer competency requirements revealed during the job advertisement analysis can also prove useful in career choice processes. They can shed light on new competency demands emerging after the COVID-19 pandemic for professionals, making it easier for them to assist individuals in choosing their career paths and professions.
- These findings can serve as a starting point for further research related to employment, human resource management, and competency assessment, allowing for comparisons with existing results.

6. LIST OF PUBLICATIONS RELATED TO THE DISSERTATION



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PhD Publication List

Candidate: Barbara Pirohov-Tóth

Doctoral School: Károly Ihrig Doctoral School of Management and Business

MTMT ID: 10073582

List of publications related to the dissertation

Articles, studies (8)

1. **Pirohov-Tóth, B.:** What kinds of competences do we require at the Employment market? Job advertisements review based On collected data from workline.hu job-seeking site.
Apstract. "Accepted by Publisher" (-), 1-11, 2023. ISSN: 1789-221X.
2. **Pirohov-Tóth, B., Kiss, Z.:** A COVID-19 vírus munkavállalói kompetenciákra gyakorolt hatása.
Új Munkaügyi Szemle. 3 (2), 13-24, 2022. ISSN: 2677-1306.
3. Kiss, Z., **Pirohov-Tóth, B.:** A Dunning-Kruger-hatás felsőoktatási szakképzéses hallgatók körében: feleletválasztós, igaz-hamis és fogalomfelismerési feladattípusok esetében.
In: *Mesteri erőforrások : Tanulmányok Polónyi István tiszteletére. Szerk.: Kun András István, Csók Cintia, Debreceni Egyetem Felsőoktatási Kutató és Fejlesztő Központ (CHERD), Debrecen, 117-127, 2022, (Oktatókutatók könyvtára, ISSN 2732-1800 ; 16) ISBN: 9789634904830*
4. **Pirohov-Tóth, B.:** A felsőoktatás átalakulása és dilemmái az elmúlt években.
Polgári Szemle. 18 (4-6), 338-348, 2022. ISSN: 1786-6553.
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6. **Pirohov-Tóth, B.:** Munkapiaci trendek a koronavírus-járvány idején.
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DOI: <http://dx.doi.org/10.14267/VEZTUD.2022.01.03>
7. **Pirohov-Tóth, B.:** COVID-19 vírus második hullámában tapasztalható foglalkoztatási kihívások a vállalatok szemszögéből.
International Journal of Engineering and Management Sciences. 6 (2), 152-163, 2021.
EISSN: 2498-700X.
DOI: [http://dx.doi.org/10.21791/IJEMS.2021.2.13.](http://dx.doi.org/10.21791/IJEMS.2021.2.13)





8. Kiss, Z., **Pirohov-Tóth, B.**: A családi háttér és a munkaerő-piaci sikeresség összefüggései.
International Journal of Engineering and Management Sciences. 5 (3), 131-141, 2020.
EISSN: 2498-700X.
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Conference presentations (1)

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