

Cluster Analysis of Professional Focus of Future HR Managers

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Abstract: Europe is facing an unprecedented increase in unemployment in the segment of young workers to 34 years. Partly it can be attributed to the phase of business cycle, but we can also observe changes in orientation of young people in specific groups of professions who are increasingly different from the structure of the economy and the requirements of companies in the Czech Republic - in the occupational group No 4 - Technology we can see an excess of demand of companies over supply of employees; and in the occupational group No 8 - Arts and Entertainment there is a large oversupply of students. This paper presents the results of research of students' professional preferences with a special focus on students' interest about work in HR department. Roe's classification was used for this research - profession of HR Manager belongs to the group of professions No 3 – Organization according to Roe. Research showed that students are very indefinite when choosing their profession and many of them choose 5 or more different professions to their portfolio. It could be problem because companies need HR Manager, who is straight focused on working with people. The research team used cluster analysis and the results showed that students with lower number of job preferences (1-4) choose suitable professions more often than students with a higher number of profession preferences. The result of this research is that HRM for HR department has to search students with low number of profession preferences who are focused for HR Manager Position.

Key-Words: HR Manager, Professional Focus, Cluster Analysis, the Czech Republic.

1 Introduction

Europe and the European Union are going through difficult periods. Signals can be seen as problems in economic stagnation, as measured by GDP, the debt burden countries of southern Europe, but also growing youth unemployment. These problems do not avoid even the Czech Republic, as we can read in analysis from Tvrdon [20] and Hanclova [8].

Vlahovic, Milanovic and Skrinjar propose that companies should develop Business Process Orientation (BPO) in order to improve their overall performance [23]. One of the important processes that determine the performance and success of companies is HRM. This paper addresses the specific issue of collecting suitable HR Managers from among graduates.

If we want the visions of economy transformation to a knowledge economy come true, importance of HRM for the companies is increasing. Moreover,

meaning of HRM is changing. The role of the personnel professional has altered in a number of significant respects, and has become more multifaceted and complex, Caldwell says [4].

The definition of HR professional is still valid. They should search the best people for positions in company and provide their loyalty to the organization, Sequensová says [19]. However, behind this simple definition, hides a number of difficult issues and demands on personnel professional.

HR professionals have to take care of the employees working on people development, provide consultancy services, giving the same opportunities. They must be polite, punctual, trustworthy and proactive. They must respect the ethical standards. Chartered institute of personnel and development (CIPD) declared that HR

professional needs personnel development and lifelong education [5].

Although the companies implement new practices in human resources in recent years, still, as Guest and King researches show, have failed to overcome many of the problems identified 25 years ago [7]. One of these problems is defined clearly the role of HR managers and HR department.

Strouhal shows that SMEs cannot yet show quality of HR work in their financial accounting reports [17], [18].

Another problem is finding the way how to ensure effective management and development of people in the organization that nobody will feel hurt. In recent years, especially in the U.S., Bergen et al see increasing number of litigations as a result of employees' conviction that their workplace is not opportunity equal [3].

Same opportunity does not only means the same approach in hiring staff but it is also means same extends to promotions, staff training, remuneration and motivation. In short it is whole HRM. The risk, that the employee will feel hurt in any of mentioned processes is very high.

It would be wrong to think that this risk does not relate to the Czech Republic. To provide opportunity equality is not only manners of the legislation. It depends on each companies and their HRM.

Many organizations have implemented significant changes in their personnel practices and procedures due to ensure equal chance for employees; Kellough and Comeman write [10]. Bell et al suggest, that each person working as HR specialist has influence not only on the organization but by his choice of staff he affects social environment also [2].

Because HR specialist has to operate in all areas of HR – strategic management, corporate infrastructure management, employee benefits management and training and education system – according to Ulrich [20] - is necessary to ensure that HR specialist has authority across whole organization as suggested by Weihrich and Koontz [24].

Research in labor market confirms changes in work of personnel specialist. The nature and tasks of their work is completely different. It is also due to the necessity of implementing organizational changes. Personnel professionals have to deal with classic contradiction - the company needs organizational change, while workers resistance to any changes, as illustrated by Choi and Ruona [6].

According to increasing demand of human resources and its effective using in the organization,

increase demands on HR department employees too. If we want to achieve effective using of HR in organization, we have to start with personnel specialist themselves. Qualified and experienced HR staff can provide the selection, recruitment and management of quality human resources in the organization. Moreover, HR department must work correctly to be able to manage and developed people in the organization, Armstrong and Koubek write [1]. Very important is the knowledge transfer inside organization, Tučková, and J. Strouhal write [21].

Personnel specialist will have to deal with new challenges and unsolved tasks in the future. The question is, if the graduates of Czech schools are qualified enough to solve those problems. And it will be enough graduates interested in positions connected to HR work.

This paper focuses on graduates of high schools from the whole Czech Republic and graduates from Tomas Bata University in Zlín and research of their expectation about future labor market. Specifically, it examines a group of students who would like to work in HR department in the future.

This paper is based on primary research, professional aspirations of high school students from the Czech Republic (1628 respondents, of which 99 would like to work in the HR department after graduation). The second primary research was realized at the same time with university students (338 students, bachelor degree, Faculty of Management and Economics, of which 85 would like to work in the HR profession after graduation). Students could choose more than 1 job, which many of them also did. Research is focus on professional portfolio of students to show their interest in working as a personal specialist or similar job. We used Roe's classification for this research [12], [15]. HR specialist is in this classification type 3 - Organization and is highly focused on working with people.

Research has shown that students are really undecided and choose their preferred professions from completely different profession type group. It follows that their study is not focused on particular job and they are not keen on job as HR specialist. This can cause problems. It may be hard to find a good personnel specialist, who should provide quality employees for company in the future.

It seems that recruitment agencies and companies will need to co-work more closely with universities and motivate students of high quality and knowledge for job in HR profession during their studying already.

2 Research Problems

The research in this paper focused on the target group of young people aged 16 to 21 years and their professional aspirations. In the Czech Republic was necessary to examine the views of high school students (16 - 19 years) and views of university students - bachelor degree (19 - 21 years).

Research questions

We expect that research will bring answers to 2 questions.

1. What is the profile of the professional aspirations of students who chose one job as HR professionals?
2. Is this profile good enough for the increasing demands and difficulty in the HR job area?

To obtain the necessary information from the respondents - students of high schools – we used internet survey. We offered professions type representatives from each group according to Roe's model [12] [15]. Students could choose from 62 professions type. They could express their interest by 1 to 5 points. For this article was monitored only the highest level of interest (5 points - "I am definitely interested"). Students could choose more than 1 job which they would like to do for a living in the future. The research was organized in cooperation with high schools. 820 high school teachers (almost 70 % from all the schools in the country) received instruction and motivation letter. By this letter they were asked to help the students fill the questionnaire. Research was anonymous and all students were motivated to fill it by the feedback offer. In the feedback report they can find information about jobs which they preferred and find out how many students are interested in the same working area. The research was realized in three periods of 2011.

Research team intended to use International Standard Classification of Occupations [9] for the research but high school students preferred classification according to Roe. Two-dimensional classification system of Roe [12], [15] deals with skills and education level on first dimension and second dimension divides into eight profession type (job groups) which cover whole spectrum of jobs in the country.

Structure of typical professions in groups:

1. Services – 7 professions
2. Trade – 5 professions
3. Organization – 9 professions
4. Technique and Technology – 14 professions

5. Outdoor Activities – 5 professions
6. Science – 9 professions
7. General Culture – 6 professions
8. Arts and Entertainment – 7 professions

Typical feature of the Czech economy is the high proportion of workers in the industry, so we offered the greatest number of typical professions in the occupational group No 4 Technology.

Students had description of all offered job including required education and average salary in job according to national statistics.

From the total data file obtained from 1628 students were separated a sample of all students who chose job in HR area as one of their preferences. This sample was analyzed due to number of preferences and jobs character. Roe's methodology divided profession into groups according to criteria, if is job focused on work with people or work with object. Roe's studies [12] [13] [14] [15] and [16] from the middle of last century lead to the conclusion that most people choose their profession within the same group of professions. This thesis was also tested in terms of Czech Republic. Research among university students carried on research between high school students which was nationwide.

Research among university students was organized in the form of anonymous questionnaire and was filled by students of bachelor studies Faculty of Management and Economic in first year of study. The research was realized in autumn 2011.

The questionnaire included a range of 48 professions which corresponded to bachelor degree education. Even these professions were divided into 8 groups according to the classification of Roe [15]. Considering faculty profile research team offered 20 professions in company management.

From 338 filled questionnaires there were 85 university students, who chose job in HR area as one of their preferences. This sample was analyzed due to number of preferences and jobs character.

3 Problem Solution

The research realized in 2011 obtained two files: one set of data with high school students (1628 respondents) and it was analyzed a sample of 99 students who chose as one of their preferred job HR professionals work. The second set of data with university students (338 respondents) and it was analyzed a set of 85 students who were interested in the HR profession.

Statistical characteristics of 99 high school students, who choose HR Manager as one of their preferred professions, are in table below.

Table 1 Statistical characteristic of high school respondents (own source)

| | |
|---|--------|
| Average number of professions per student | 11.21 |
| Selected jobs - total | 1110 |
| The variance | 92.026 |
| SEM – standard deviation | 9.593 |

We can see from the result that students are very ambiguous (in addition to job as HR specialist chose a further 10 jobs in average that would like to do). High numbers of preferences were recorded at positions secretary, assistant, accountant. Interesting is the finding that students often preferred position as a clerk and work in public or state administration. Besides job as HR specialist they chose jobs from completely different profession type group. Which can mean their ambivalence and so their lack of knowledge about job description.

If we keep classification according to Roe students preferred other professions from the group No 3 - Organization. But these students choose also professions from other groups of professions No 2 - Trade or No 8 - Arts and Entertainment. They did not prefer profession from group No 6 - Science or No 5 - Outdoor Activities.

Figure 1 presents preferences of high school students (sample of students who choose profession HR Manager to their portfolio) – they prefer professions from group No 3 – Organization.

High school students and their job preferences

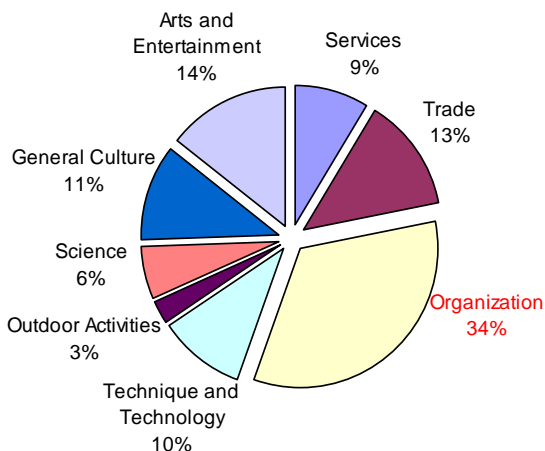


Fig 1 High school students and their profession preferences

Figure 1 shows that students prefer professions from group No 3 – Organization but they are also interested in the positions of other groups of professions.

On the above sample of students we performed cluster analysis and we tried to detect similarities in the preferences of the students. To simplify the analysis, preferences were sorted according to individual groups according to Roe. The method used was simple distance, nearest neighbor method. The results of cluster analysis are shown in the graph below. Based on these results, we then divided the students for detailed analysis.

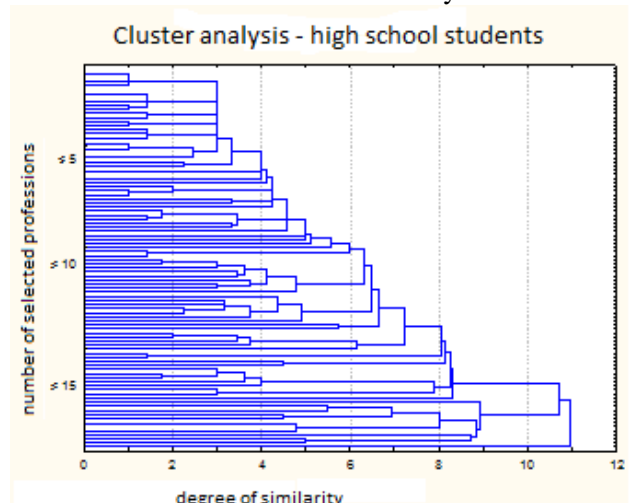


Fig 2 Cluster analysis – high school students

As can be seen from Figure 2, students can be divided by the number of preferences. Similarities were found in these groups: we chose four groups with a similar number of respondents. Students who choose less than 5 professions, students who chose between 6 and 10 work positions, students who would like to put forward to 11 - 15 professions and those who are thinking about more than 16 work positions.

Distribution of students according to the number of preferred professions, we will also use the detailed analysis of student interest. We focused on the work professions in individual groups according to Roe. Future HR Manager must be very motivated to perform this position and it is therefore necessary that his preferences were relatively clear-cut.

The future HR Manager must be highly motivated to work on this position. Therefore their preferences must be focus on working with people. Due to this, students were sorted according to the number of preferred positions. We will focus on their other chosen position and whether students with the same

amount of preferences selected similar jobs as job in HR area.

The chart below shows the interest of students in jobs selected by professional type and number of preferences. From this Figure 3 we can clearly recognize that students with lower number of preferences confirm the Roe's theory, while students with a higher number of preferences chose jobs from other professional groups almost equally.

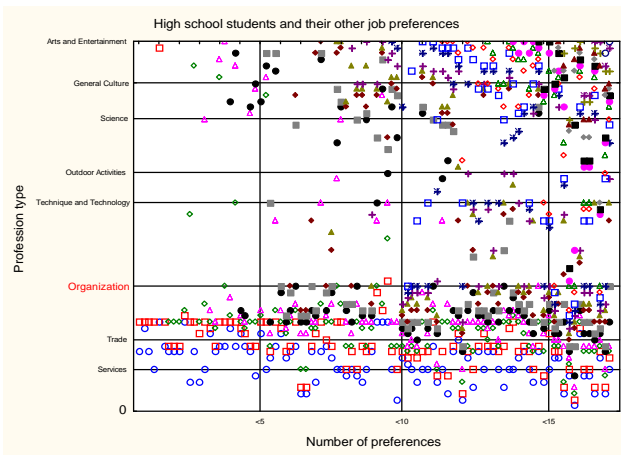


Fig 3 High school students and their profession preferences according to a number of preferences

Students with more than 10 preferred jobs chose position from all professional type. Compared to students who chose less than 5 professions, they focused on jobs from type Organization.

To determine the degree of similarity in each group standard deviation was used. As can be seen from the mod values in the Table 2, the group of professions No 3 - Organizing was mostly chosen. The standard deviation has a minimum value for the first group of student; those who choose less than 5 professions. The more professions selected the higher standard deviation respectively dispersion is.

Table 2 Statistical characteristics of high school students - Modus, standard deviation and variance

| Number of preferences | Number of selected professions (n) | Modus (Mod X) | Frequency of mod | Standard deviation (σ) | Variance (σ^2) |
|-----------------------|------------------------------------|---------------|------------------|---------------------------------|-------------------------|
| ≤ 5 | 88 | 3 | 48 | 3.53 | 1.88 |
| ≤ 10 | 216 | 3 | 92 | 5.07 | 2.25 |
| ≤ 15 | 365 | 3 | 133 | 5.43 | 2.33 |
| > 15 | 221 | 3 | 62 | 5.59 | 2.36 |

Summary of the results of the overall interest of the students are shown graphically in Figure 4

together with the percentage of students expressing interest about each group of professions. Students had greatest interest in the professions from group No 3 - Organizing when their number of selected professions was under number 5. Work in this area would like to get 55% of them. They were also interested in employment in group No 2 - Trade (22%).

The second group of respondents with preferences 6-10 professions has had an interest in employment from the group No 3 - Organizing lower - 43%. They are also interested in the profession from the group No 2 - Trade and from the group No 8 - Arts and Entertainment.

The third group of respondents with up to 15 selected preferences is interested in professions from the group No 3 at 36%. Respondents also had a great interest in the professions of the Arts.

Last watched group of students with preferences from 16 above is interested in professions from group No 3 at 28%. Respondents showed nearly uniform interest in other groups of professions of the Services, Trade, Techniques and Technology, Science, and Culture (around 10%). The work in group No 8 - Art expressed interest 16%. This focus is very different from the reference group No 3 - Organizing.

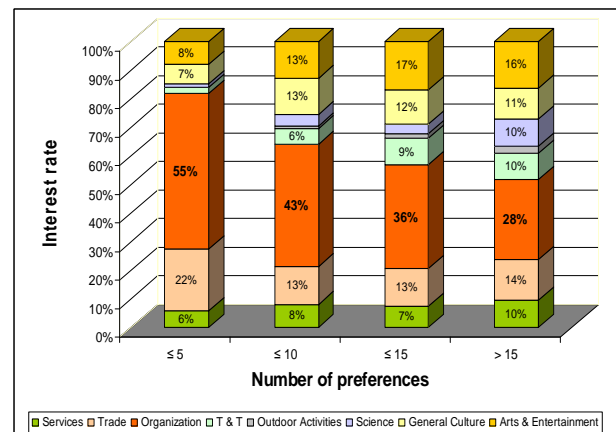


Fig 4 Summary of preferences of high school students according to number of preferences

Statistical characteristics of 85 university students, who choose profession HR Manager as one of their preferred professions, are presented in Table 3.

Table 3 Statistical characteristic of university respondents (own source)

| | |
|---|-------|
| Average number of professions per student | 7.51 |
| Selected jobs - total | 638 |
| The variance | 21.94 |
| SEM – standard deviation | 4.68 |

Even these numbers do not justify strong interest of the respondent's future career. Students whom preferred job in HR department are interested in other jobs too. Especially job like a company manager, stockbroker or bank employee.

This result does not correspond with Roe's thesis, that people choose the profession of one or a few close professional type. The chart below shows preferences of students who chose on of their preferred profession HR Manager.

Students preferred other jobs from group of professions No 3 - Organization, but despite the thesis of Roe, most students prefer also professions from group No 8 - Arts or group No 2 - Services. These are completely different by its description and function than HR profession. Interesting thing is that students preferred highly job as a clerk. This interest may be caused by premise of stability job in state administration.

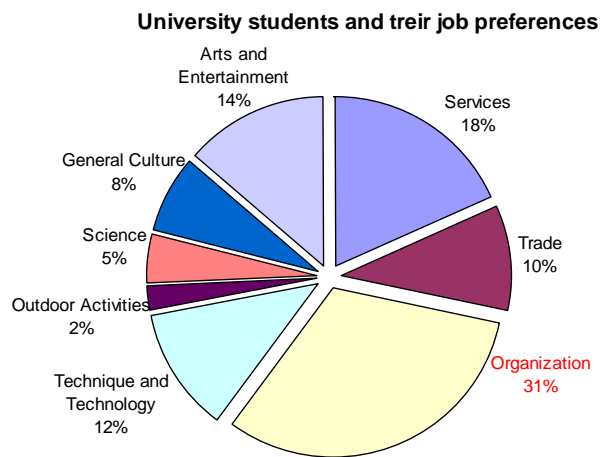


Fig 5 University students and their job preferences

To perform a detailed analysis of the respondents, it is necessary to divide the group of students. For this reason, we apply cluster analysis on the group of students and we see if we can find similarities in the responses of students. Cluster analysis revealed that respondents can be divided according to the number of preferences.

Analysis results are processed graphically in Figure 6.

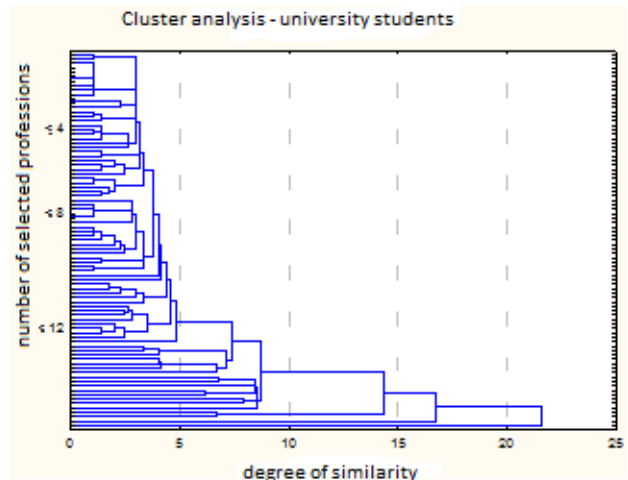


Fig 6 Cluster analysis – university students

According to the findings, we can divide the students into four groups. In the first group we examine responses of students who chose up to 4 professions. In the second group will focus on students who chose 5-8 professions. The third group consists of students who chose 9-12 professions.

The last group consists of respondents who chose 13 professions and more. Subsequently, we will focus on a detailed analysis of university students according to specific professions. We find if students who are interested in working HR Manager, choose professions with a similar focus.

The largest numbers of students choose 5-8 professions. Preferences of students are presented in Figure 7 in the division according to the results of cluster analysis. Professions are divided into 8 groups according to Roe.

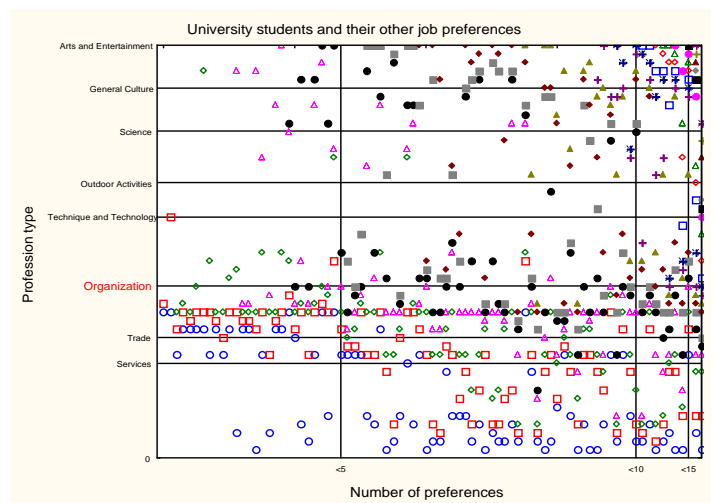


Fig 7 University students and their job preferences according to a number of preferences

The Figure 7 showed that students with less than 5 job preferences choose positions from profession group No 3 - Organization more often than students with a higher number of profession preference. Students with more than 10 job preferences showed almost same interest in each group of professions.

Discovered fact is proven by the results shown in Table 4. In all investigated groups, students often chosen professions from the group No 3 - Organization, as is evident from the values of Mode. However, if students chose more professions, variability increased, as can be seen from the values of standard deviation. These values are the highest in the third group of students with the number preferences between 9 and 12.

Table 4 Statistical characteristics of university students - Modus, standard deviation and variance

| Number of preferences | Number of selected professions (n) | Modus (Mod X) | Frequency of Mod | Standard deviation (σ) | Variance (σ^2) |
|-----------------------|------------------------------------|---------------|------------------|---------------------------------|-------------------------|
| ≤ 4 | 63 | 3 | 42 | 1,51 | 2,29 |
| ≤ 8 | 311 | 3 | 104 | 2,30 | 5,30 |
| ≤ 12 | 101 | 3 | 26 | 2,52 | 6,37 |
| > 12 | 163 | 3 | 30 | 2,42 | 5,87 |

Figure 8 shows the responses of students classified according to the number of professions and preferences. Professions of the group No 3 - Organization were selected most often by students who chose to 4 professions. Students choose a profession in the group No 3 in 67%. These students are interested in the profession from other professional groups to 10%.

The second group had the largest number of respondents. Respondents having preference to 8 professions chose from the group No. 3 in only 33%. These students were interested in the positions from the group No 1 - Service 20%, and they were interested in other groups of professions in 10%.

In the third group, with a number of preferred professions to 12, students chose group No 3 - Organization of 26%. They also were interested in the profession of the groups No 1 – Services and No 8 - Arts and Entertainment.

The last group is formed by answers of students who chose more than 12 professions. In this group students are interested in professions from the group No 3 - Organizing in 18%; it is the lowest number.

Students are interested in the profession from the group No 1 - Services, No 4 - Technique and technology, and No 8 – Art as well. These groups are in a completely different focus compared to the professions of the monitored group No 3 - Organizing.

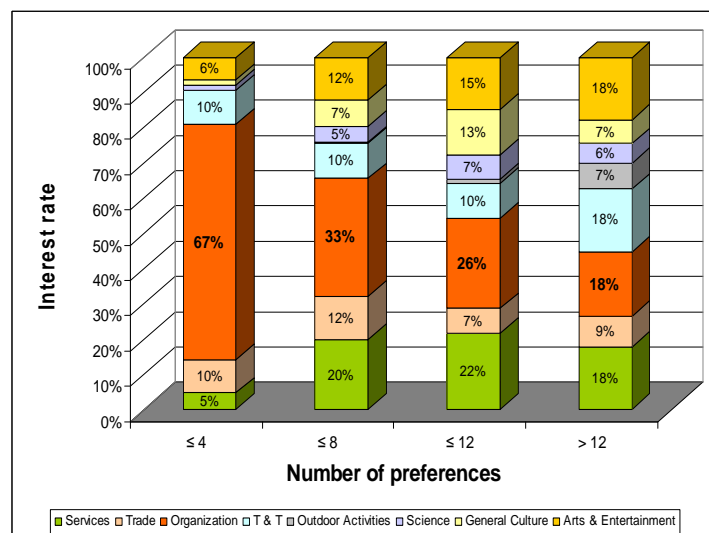


Fig 8 Summary of preferences of university students according to number of preferences

Research has shown that high school students and university students choose quite a lot of professions from the group No 8 - Arts and Entertainment. If a student chooses at least one profession from the group No 8, we name the student as “creative student” for the purposes of this paper. It is interesting to follow the proportion of creative students in all monitored files.

Table 5 Percentage of creative students

| | University | High school |
|--------------|------------|-------------|
| All students | 49% | 39% |
| HR Managers | 63% | 52% |

The results show that high school students in the whole group of respondents (1628 students) have 39% of creative students, while in the sample HR Managers there are 52% of creative students.

The results show that university students in the whole group 338 respondents have 49% of creative students, while in the sample HR Managers there are even 63% creative students.

Both of these results indicate that students, who choose the profession HR Manager, are willing to be creative and work in the creative industries with a higher probability than other students.

If we evaluate all research, we have to say, that research confirmed that even high school students or university students are not clearly oriented in any group of professions according to Roe. They often choose completely different professions. Therefore they are flexible. On the other hand, it may be a problem, because as future graduates they will tend to try many professions from different profession groups.

4 Conclusion

Research has shown that students' interest in the HR profession is quite large. However, further analysis showed that these students are highly ambivalent. HR Manager is not their major interest and they are not clearly oriented in working with people too. It could also mean they are flexible and able to change a job according to conditions on labor market. On the other hand, wide range of interests cause problem with further aspiration and insufficient preparation for HR profession during their studies. Students react to the labor market, which is very variable, both due to the transformation of the Czech economy from a centrally planned to a market economy, also due to strong economic crisis between 2008 and 2009. Students are very flexible and ready to react quickly to new opportunities. On the other hand, it may be a problem, because as future graduates will tend to try multiple jobs in different areas. This statement also proved the conclusion of KMPG research. KMPG is a network of carrier consulting companies. They studied expectations of graduates. The unexpected outcome of the study was that 87 % of graduates expected shorter than 5 years stay in first job. In the Czech Republic there were even 97 % graduates that expected shorter than 5 years stay in first job. This was the highest number of all researched countries [10].

The research answered the question about professional aspirations of students. Students do not have clear preferences for futures job. Only a small amount of students choose from 1 to 5 professions.

The more chosen positions, the more diversity of chosen profession groups. The less chosen positions, the more focus on group of professions No 3 - Organization.

So it is necessary find students with preference 1 to 5 professions and hired them as HR Managers. These students are mainly interested in working with people. This group of students must be motivated during their studies, so that they will be able to work on HRM effectively in the future.

The research area on the labor market is very specific. Especially importance of problem school graduates entering on the labor market is growing. In many European countries students are unsuccessful when they enter the labor market (for example the situation in Spain in 2011, the unemployment rate of graduates reached more than 40 %). These are alarming signals that should be solved.

We can see increasing demands for human resources and its effective using through the organization nowadays. Therefore HRM is more important for the companies. The role of HR department employees is changing, too. Their work has become more complex and difficult. Personnel manager has to be qualified and well experienced, because he is the one who can provide effective human resources management and its development in the organization. HR department employees affect by the personnel selection not only the organization but also the social environment. This article focused on the students' interest in the work of personnel in terms of significant changes in local and global conditions. Current research has shown that those interested in HR profession largely choose other professions. This may jeopardize the specialization and depth of study in the field. Follow-up research should show the parameters of the choice of profession by students. Targeted analysis based on the search of factors enhancing their professional specialization can answer the question, what will be the future of human resources.

The research presented in this paper showed, among other things, also increased interest in creative work among future HR Managers. Authors perceive it as very important because trends indicate that the current economy is moving towards a knowledge-based and creative economy. Future HR Managers will need to learn in advance a number of new procedures and approaches when working with the staff of new industries and professions. Students who have a positive relationship with the creative professions will have a competitive advantage.

One of the tasks of the research presented here was to test the suitability classification of professions according to Roe in modern conditions. This classification is very useful when working with students who do not have real experience in the working environment; it is very intuitive and user-friendly for students. Research has shown that the original thesis Roe, which followed the respondents choose professions in one occupational group or a few groups of professions standing position side by side, research has confirmed only partially and only

under conditions when students chose less than 5 professions in their portfolio. Further research will need to investigate further the conditions under which it is advantageous to use the classification according to Roe.

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