

The Macrotheme Review

A multidisciplinary journal of global macro trends

INCREASING LABOR SHORTAGE IN THE 21ST CENTURY: ARE WE PREPARED FOR IT?¹

Anita Kozák

Eszterházy Károly University of Applied Sciences, Faculty of Economics and Social Sciences, Department of Economics

Abstract

The biggest labour market issue during the economic crisis in Hungary was the high rate of unemployment. This rate has gradually dropped to a minimum level by now. In the past few years the difficulties arising from the lack of skilled workforce have appeared and become stronger and stronger. The goal of the present article is to show how organizations based in Hungary react to the problems arising from the lack of workforce, what measures they introduce and carry out in order to fill in the increasing number of vacant positions. Altogether, 54 structured interviews with managers and 1,731 employee questionnaires have been processed at 56 companies. The results revealed that the organizations involved in our survey (mainly the small and medium companies) do not utilize their potentials entirely regarding recruitment and retaining their workforce either. In relation to the latter one, our detailed analysis also reveal the employees' commitment is affected by the increasing incomes and as well as the measures aiming to retain the workforce, like flexible working hours, providing extra days-off, more diversified tasks and creating good workplace atmosphere.

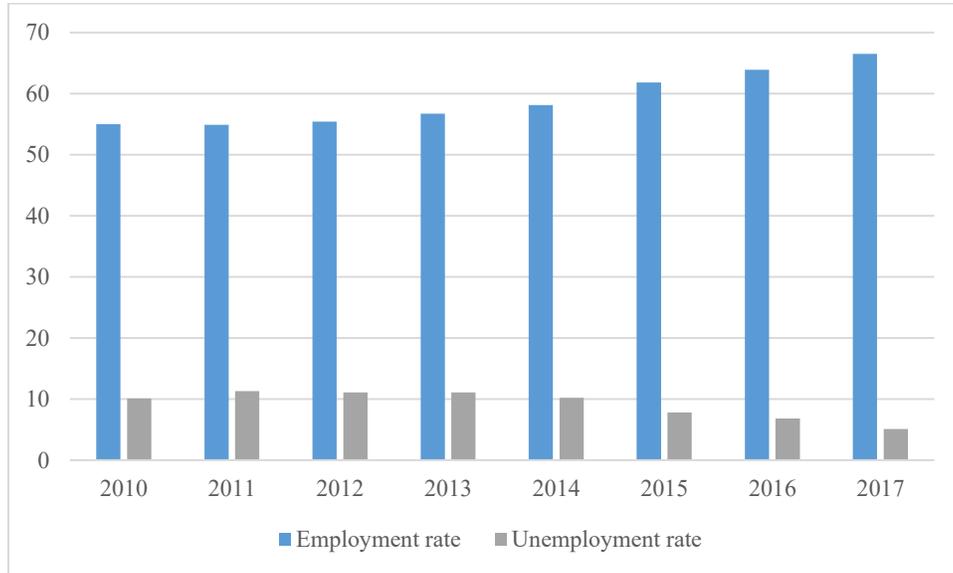
Keywords: labor shortage

1. Introduction

In Hungary, the major labour market indicators were favourable after the period of the economic crisis (Figure 1), the rate of employment was continuously increasing, while the rate of unemployment was showing a decreasing tendency.

¹ The research was supported by the ÚNKP-17-14 New National Excellence Program of the Ministry of Human Capacities, Hungary.

Figure 1: The development of employment and unemployment rates in Hungary between 2010 and 2017

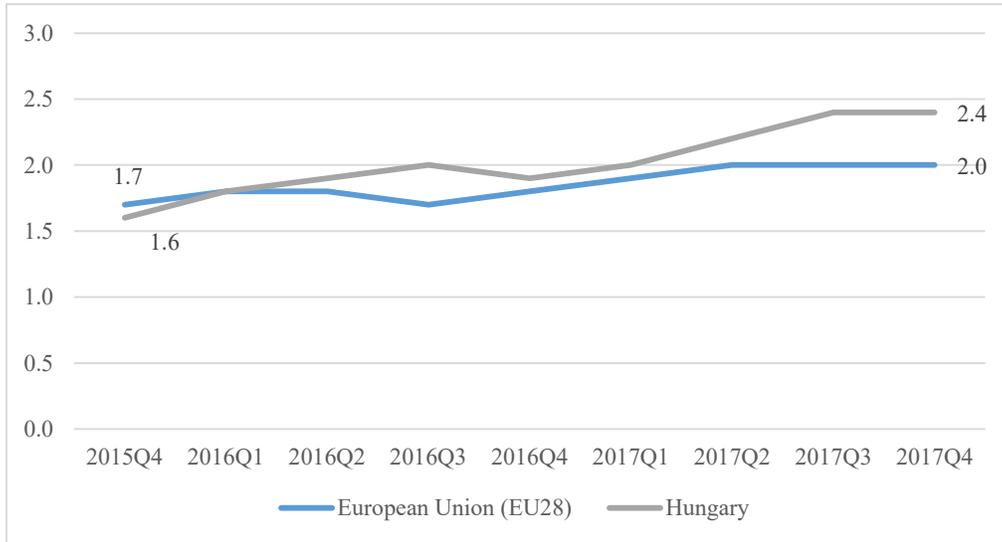


Source: Central Statistical Office, 2018

In the past year, nearly 7,000 more people have had income due to their jobs in Hungary than in 2010. In the third quarter of 2017, the employment rate of the people between the age of 15 and 64 in Hungary was 68.7%, which was 0.5% higher than the EU average rate. The expansion of the employment involved all the age groups, the change was the most intense in case of the people at both ends of the age scale. While in 2010, 18.3% of the people between 15 and 24 were employed, in 2017 29.0% of them were employed. The employment rate of people between 60 and 64 increased from 12.6% to 35.2% during the same period. The favorable employment indicator was accompanied by a low rate of unemployment. In the third quarter of 2017 only 3 EU member states (the Czech Republic, Germany and Malta) had lower unemployment rates than the 4.1% rate in Hungary (Central Statistical Office, 2018a).

However, beside the favorable employment rate, the problem of the increasing lack of the skilled workforce appeared. In this regard, Hungary has been under the average level of the EU28 (Figure 2).

Figure 2: The rate of vacant positions in the EU and in Hungary between the fourth quarter of 2015 and the fourth quarter of 2017



Source: EUROSTAT, 2018

The rate of the skilled workforce is a problem in the whole EU. The EUROSTAT data (2018) show that the number of vacant positions has been growing since 2013. The rate of vacant positions grew from 1.4% in the first quarter of 2013 to 2% in the fourth quarter of 2017. The situation is the worst in the Czech Republic and Belarus (4.4% and 3.6% of the positions could not be filled in).

In Hungary, between the fourth quarter of 2015 and the first quarter of 2018, the number of vacant jobs was nearly doubled at the level of the national economy (from 44,847 to 79,428). Based on the data of the Central Statistical Office (2018b), the increasing lack of workforce can be observed in the fields of industrial production from 12,692 to 25,473, the construction industry (from 1,535 to 4,202), in transport and storage (from 1,792 to 4,336) and in activities providing services and administration (from 3,753 to 9,104).

The lack of skilled workforce mean new challenges for the management and HR experts. They need to revise the recruitment techniques, introduce new measures in relation to retaining the workforce so that the businesses can ensure the workforce supply and increase their employees' commitment to retain them. In the following section of the article we are presenting the activities and basic concepts concerning the organizations in relation to the lack of workforce. This is followed by the presentation of the primary research results.

2. The organizational measures and basic concepts related to the lack of workforce

The lack of skilled workforce is directly related to human resources management functions:

- filling up vacant positions and
- helping to retain the existing workforce.

In order to fill in the vacant positions, the companies can improve their recruitment methods (updating their databases), can introduce internship and/or scholarship programs, they can cooperate with educational institutions (in the form of dual training), can expand their recruitment activities to the neighboring countries, can run recommendation-based systems and they can consciously build their own employer brands in order to attract the applicants. According to Krajcsák (2018), if the organizations can have trouble hiring new workers, they also have the chance to prolong the employment of their retired employees. In this case, however, the employers should expect that there might be conflicts between the generations. Also, it is worth mentioning that the replacement of living workforce, since the new industrial revolution projects the possibility to automate jobs or even a wide range of tasks or even entire jobs which have been assumed not to be subject to mechanization or programming. (Autor-Handel, 2013). In Hungary, a survey was carried out in relation to this in 2016. According to the results, by taking the existing tendencies into account, 12% of the positions in Hungary could be filled in with automation (Nábelek et al., 2016). At the same time, one should also consider that the human resources is a crucial factor in technological development both in creating new technologies and in adapting these technologies to the local circumstances (Csugány-Tánczos, 2018). Beside the micro- and macro-level transformation of workforce needs, the organizations should also consider the costs of trainings, further trainings and retraining programs necessary to robotize the tasks

The measures aiming to retain the existing workforce is determined and introduced by the retention management. Retention management carries out the series of measures that are devised and implemented to ensure the longest possible employment of the current staff or a group of employees. Retention management might be connected to several fields. This is usually defined by the specific circumstances of the companies and the needs of the staff (Krajcsák-Kozák, 2018). The retention management measures we mention and analyze have been determined according to three previously conducted studies (Csedő et al., 2016; Nábelek et al., 2017; Nyíró-Tóth, 2017).

Table 1: The classification of the examined workforce retention measures.

Factors related to work and working conditions	Factors related to feeling safe	Financial factors	Non-typical forms of employment	Other factors boosting satisfaction
Making the job tasks more diversified Measures to improve the workplace atmosphere Chances of missions abroad Improving the working conditions Ensuring chances of promotion	Company health insurance Life insurance Company retirement insurance program	Bonus system Providing a company car Financial and moral reward for the loyalty to the company	Flexible working hours working from home	Child supervision within the workplace Extra days-off Awards and acknowledgements

Source: Kozák – Csugány (2018)

The retention management measures contribute to the increase of the employees' commitment. According to the Mayer-Allen theory (1984), the employees' commitment has three components:

1. Affective commitment: the employee is emotionally attached to the colleagues, identifies himself/herself with the goals and the values of the organization. The employee is attached because he/she wants to be attached.
2. Continuity commitment: one is attached to the organization because, for some reason, this is the best for them. Continuity commitment means that if there was a better-paid alternative for the employee, they would leave the organization. One is attached to their workplace because it is worth.
3. Norm-based commitment: One feels morally obliged to be a member of the organization. The reason for this might be that the organization invested in the employee or the employee's previous work experience and culture might also be an influencing factor here. One is attached to the organization because they feel obliged. (Meyer-Allen, 1984).

It is important to note that these are not the various types of commitment but its components. The three components appear simultaneously. All three components have one thing in common: as a consequence one might decide to maintain or end their membership in the organization (Kiss, 2013). The loyalty to the profession might also be crucial apart from the commitment to the organization. The commitment to one's profession may include a kind of calling and it expresses one's attitude to their profession, one makes efforts to promote it Aranya et al., 1981; cited in Krajcsák, 2018). Thus, one accepts the goals and ethical norms set by the profession (Mueller et al., 1992). As we see it, the retention management measures can directly affect the continuity and norm-based components, the emotional and professional components are affected only indirectly (Krajcsák-Kozák, 2018).

3. Methodology

The goal of our primary studies was to find out to what extent the companies operating in Hungary are affected by the above mentioned labor market situation (primarily the lack of skilled workforce) and what methods they use to handle the difficulties. To achieve our goal, we performed structured interviews with the owners and managers of companies (with the HR manager, where this position formally existed). Furthermore, we performed questionnaire-based surveys with the employees of these companies. These surveys were carried out between September and December in 2017. We involved 56 businesses in our research. Two companies agreed to take part only in the questionnaire-based surveys. Among the organizations which agreed to take part in the interview-based surveys there were 23 small businesses, 16 medium companies and 15 large companies, according to the number of employees and the annual income. The companies were involved in the sample on an accessibility basis, they did not want a representative survey, we only wanted to have a general picture of the answers these companies gave to the labor market trends.

The interviews performed with the managers/HR experts of the companies included the tools used to ensure the supply of workforce and the implemented workforce retention measures. The latter subject was included in the employees' surveys too, since we wanted to know the extent the employees are involved in such programs and whether this participation can be related to their commitment to their companies. The respondents rated each commitment component-related item on a scale of 1 to 7 (1 = not at all, 7 = totally). The questions on the affective, continuity and

norm-based commitment components were based on Meyer – Allen (1984), while the statements on professional commitment were based on Aranya et al (1981) and the questionnaires of Rothwell – Arnold (2007). The five commitment components were examined with the help of 5 items for each component. The replies given to each group of questions were averaged and we created new variables (affective, continuity, norm-based and professional). The new components are suitable to describe the various commitment factors (by merging the average ratings given to the 5 questions for each component). In our analysis, we used the methods of descriptive statistics, while we used the Mann-Whitney test to find correlations between the extent to which the employees were involved in workforce retention-related programs and the extent of commitment. We processed 1,731 employee questionnaires, the results of the statistical tests were considered significant at $p < 0.5$.

4. The results

Nearly 80% of the companies (43 organizations) reported that the lack of workforce is a general problem for them causing difficulties in their day-to-day operation. The range of companies having workforce problems include organizations of various sizes, which means the workforce problem is independent of the size of the companies. The examined businesses use various methods to fill in the vacant positions and to ensure the required number of employees. We present the frequency of the tools they used based on the size of the companies (Table 2).

Table 2: The methods to ensure the required number of employees according to the size of the organization

The methods to ensure the required number of employees	Small businesses (total: 23)	Medium-sized businesses (total: 16)	Large companies (total: 15)
Improving the recruitment methods (building databases)	11 (48%)	10 (62.5%)	12(80%)
Internship programs	3 (13%)	7 (44%)	9 (60%)
Scholarship programs	1 (4%)	1 (6%)	4 (27%)
Dual training	0	2 (12%)	8 (53%)
Cooperation with educational institutions	9 (39%)	9 (56%)	12 (80%)
Expanding recruitment to neighboring countries	2 (9%)	2 (12%)	4 (27%)
Consciously building an employer's brand	4 (17%)	4 (25%)	7 (47%)
Operating a recommendation-based system	15 (65%)	12 (75%)	11 (73%)

Source: the author's own research data, 2018

The vast majority of companies included in our sample try to recruit the required number and quality of workforce by improving their recruitment methods and using a recommendation-based system. Based on the interviews, we found that these companies the recommendation-based system the best method. However, the recommendation system is not used formally, in an organized manner by any of the companies, the recommending person is not rewarded in any way if the new colleague proves to be suitable. The cooperation with educational institutions is also frequent but the companies do not introduce scholarship or internship programs. Regarding the internship programs, two interviewees noted that the school system in Hungary does not prepare the students appropriately, few competencies are developed by the schools. Thus, most of the interns are not capable of working alone even by the end of the internship period. The conscious building of the employer's brand and the expansion of recruitment to the neighboring countries were scarcely used methods for most of the examined companies. Only one company reported that they cooperated with the government office and the employment office to find applicants. The executive of a bakery included in our sample complained that it is very difficult to find workforce in this trade and they got to the point that they try to get people from other bakeries.

The methods used by the medium-sized companies show a more differentiated picture. Among them, even the internship programs are quite popular. Four companies reported that they had introduced internship programs to teach the interns. Thus, those young people hired by these companies become integrated in the organization quite quickly. Most of the interns are employed further after the end of the internship period. Most medium-sized companies in our sample also consider the recommendation system the most efficient. Based on what the interviewees told us 7 of the 12 companies using the recommendation system reward their employees who recommend people.

The examined large companies use a wide range of methods to ensure the required number of employees and unlike the small and medium-sized businesses, they use scholarship systems, they participate in dual training programs and they also consciously build employer' brands. The interviewees emphasized that they employ 80% to 90% of the students participating in dual training programs. Two companies have completely transformed their recruitment and selection systems, one company made the building of their internal brand a top priority in order to boost their employees' satisfaction.

It is quite clear from the interviews that there is a correlation between the methods the companies use to fill in the vacant positions and the size of the company: the larger the organization, the wider range of methods are used to ensure the required number of employees.

The workforce retention measures introduced by the companies in our sample are presented based on the size of the organization (Table 3).

Table 3: The methods used to retain workforce according to the size of the organization

The methods used to retain workforce	Small businesses (total: 23)	Medium-sized companies (total: 06)	Large companies (total: 15)
Company health insurance	4 (17%)	2 (12%)	4 (27%)
Life insurance	0	0	3 (20%)
Company retirement plan program	0	0	2 (13%)
Bonus system	9 (39%)	8 (50%)	11(73%)
Company car	9 (39%)	5 (31%)	10 (67%)
Financial and moral reward for loyalty	5 (22%)	6 (37%)	12 (80%)
Flexible working hours	13 (57%)	10 (62%)	10 (67%)
Working from home	3 (13%)	2 (12%)	4 (27%)
Child care within the workplace (kindergarten, nursery)	0	0	2 (13%)
Extra days-off	10 (43%)	1 (6%)	2 (13%)
Improving working conditions	14 (61%)	14 (87%)	12 (80%)
Promotion opportunities	4 (17%)	9 (56%)	9 (60%)
Awards, acknowledgements	6 (26%)	5 (31%)	10 (67%)
Training and further training programs	10 (43%)	12 (75%)	14 (93%)
Foreign missions	5 (22%)	4 (25%)	7 (47%)
More diversified tasks	5 (22%)	7 (44%)	7 (47%)
Measures to improve workplace atmosphere (team-building and company events)	12 (52%)	11 (69%)	14 (93%)

Source: the author's own research data, 2018

The majority of small businesses included in our study seek to remain attractive to their employees by providing flexible working hours, extra days-off, training and further training programs and also by improving the workplace atmosphere. The medium-sized companies use the workforce retention methods at a greater extent and make these more diversified. In our case, the improvement of working conditions and the participation in training and further training programs are outstanding. The programs introduced by the large companies show an even more diversified picture. Although at a small rate, we can see life and health insurance plans provided by the companies. We can state that there is a correlation between the work retention measures and the size of the organizations. The tendency is the same as in the case of the measures ensuring the required number of new workforce: the bigger the size of a company, the more methods they use.

Based on what the interviewees told us, the measures the companies introduce are mostly successful. However, some companies noted that some programs involve only a narrow range of employees. Thus, we picked from the data set to what extent the employees benefit from these measures (Table 4).

Table 4: The rate of employees benefiting from workforce retention measures (%)

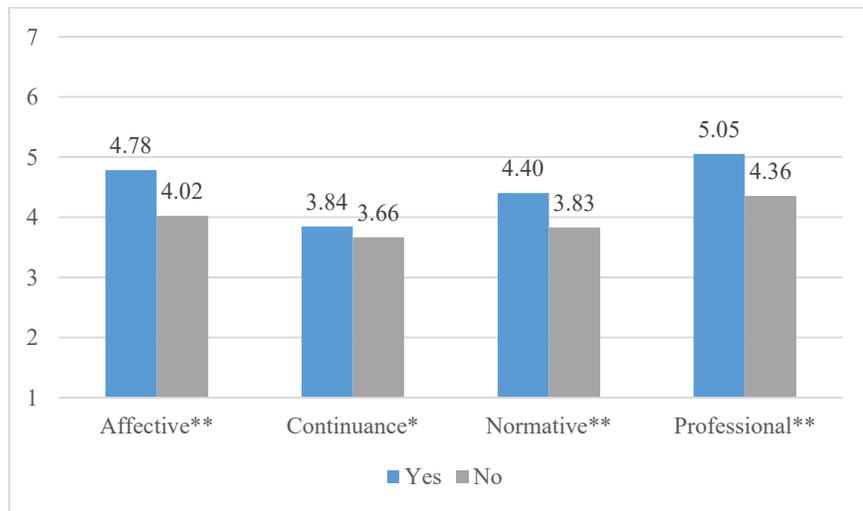
Methods used to retain workforce	
Company health insurance	28%
Life insurance	10.9%
Company retirement plan program	10.6%
Bonus system	40.2%
Company car	7.8%
Financial and moral reward for loyalty	41.8%
Flexible working hours	45.8%
Working from home	10.3%
Child care within the workplace	0.7%
Extra days-off	18.8%
Improving working conditions	59.3%
Promotion opportunities	30.7%
Awards and acknowledgements	30%
Training and further training	42.3%
Foreign missions	15.5%
More diversified tasks	47.4%
Measures to improve workplace atmosphere (team-building and company events)	71.7%

Source: the author's own research data, 2018

Based on our results, most of our interviewees (nearly three quarters of the, 71.7%) benefited from the measures aimed to improve the workplace atmosphere. More than half of the interviewees (59.3%) experienced the improvement of their working conditions, nearly 50% of them (47.9%) can now do more diversified tasks and nearly the same number of people (45.8%) can work in flexible working hours. The rate of employees benefiting from bonus systems (40.2%) or the rate of those benefiting from the company loyalty programs (41.8%) is relatively high. Furthermore, relatively many employees (42.3%) were given the chance to take part in training or further training programs. Only 1 of the interviewed businesses provided child care within the workplace. Since only a narrow range of employees were involved in this, less than

1% of the interviewees marked this answer. Based on what the interviewees told us, company cars are only available for top managers or for those working in special jobs. This might explain the low rate (7.8%). Only 3 of the examined organizations have life insurance programs and 2 of them have retirement plan programs. Thus, it seems to be real that about a quarter of the interviewees benefit from such programs (10.9% take part in life insurance programs and 10.6% benefit from retirement plan programs). Several interviewees, mainly from small and medium-sized businesses, noted that according to their judgement and experience that the workforce can be retained only by introducing financial incentives and that the businesses do not have the sufficient amount of money to cover the higher payments and the employees' support. Therefore, in the next section we present the correlation between four non-financial workforce-retaining measures and the employees' commitment these measures are the flexible working hours, the extra days-off, the diversified tasks and the measures to improve the workplace atmosphere. It is clear for us that the extra days-off might eventually result in reduced income for the businesses, however, they are not explicit expenses (probably that is why nearly half of the interviewed small businesses, that is 43%, use this measure).

Figure 3: Whether or not the interviewee works in flexible working hours according to the commitment components

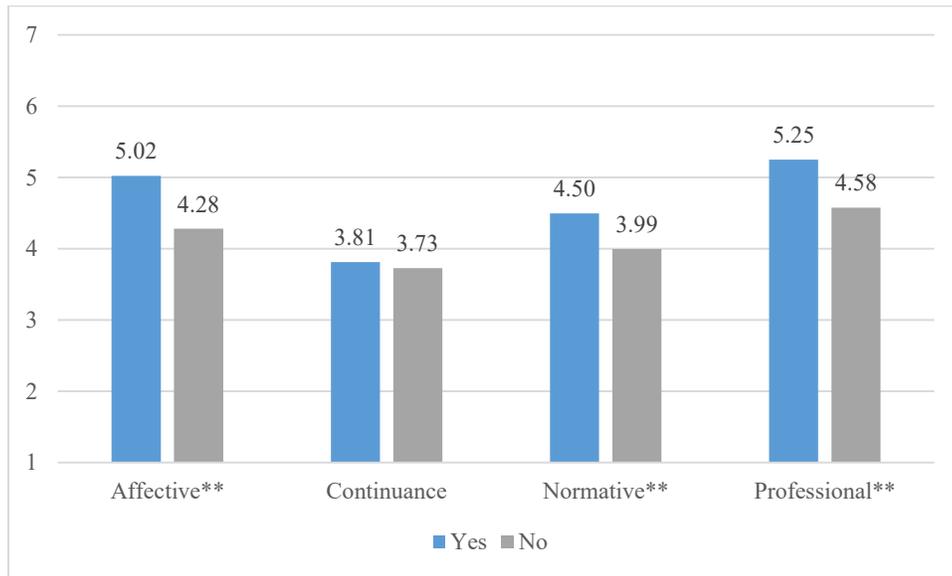


*p<0.05 **p<0.01

Source: the author's own research data, 2018

The average values of the answers given by the employees included in the sample with flexible working hours are higher in case of all four components than those of the employees working in normal working hours. Of course, the flexible working hours cannot be ensured in all positions, possibly that is why this flexibility is allowed mostly for those having higher education degrees and those who work in top positions. However, by using various work analysis methods, we could find out employees of which positions might be allowed to work in flexible working hours where the flexible hours could be implemented under adequate circumstances. Flexible working hours have several advantages. Among others, it is easier to maintain a balance between work and private life, which might result in more satisfied employees and higher levels of commitment.

Figure 4: Whether the interviewees receive extra days-off according to the commitment components



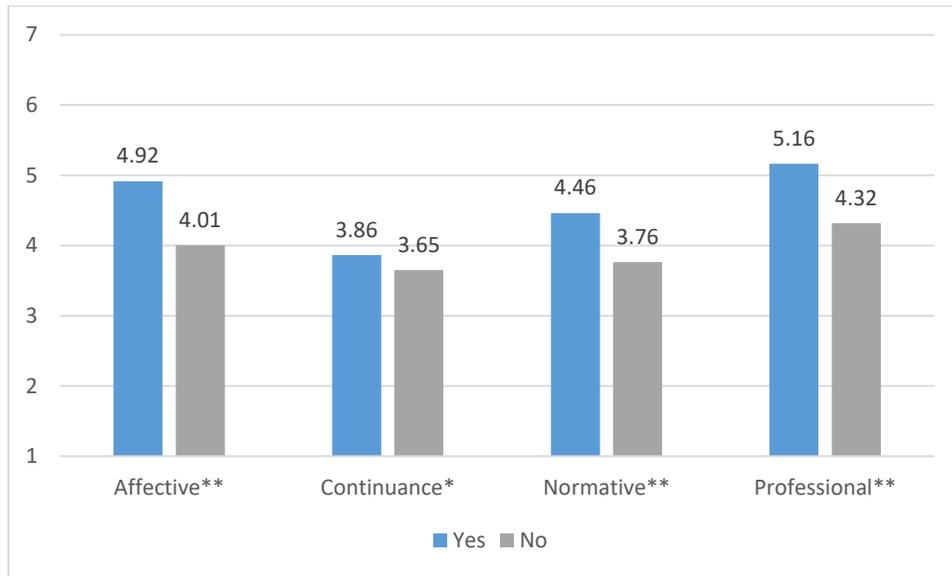
**p<0.01

Source: the author’s own research data, 2018

The employees receiving extra days-off from their employers, rate rated their emotional, norm-based and professional commitment higher. It is interesting that in case of the continuity component we did not get a significant regarding the group-creating factors. In case of the flexible working hours, the correlation between the two variables can be said to be weak. All this might mean that the longer spare time and the more balanced family life affect the employees’ attitude emotionally and morally.

The experience regarding the flexible working hours and the extra days-off confirms the assumption that the non-typical forms of employment will become widespread in the coming decades. Self-realization, the project-based work and keeping the work-life balance will become more and more important for the employees.

Figure 5: Whether the interviewees are given diversified tasks according to the commitment components



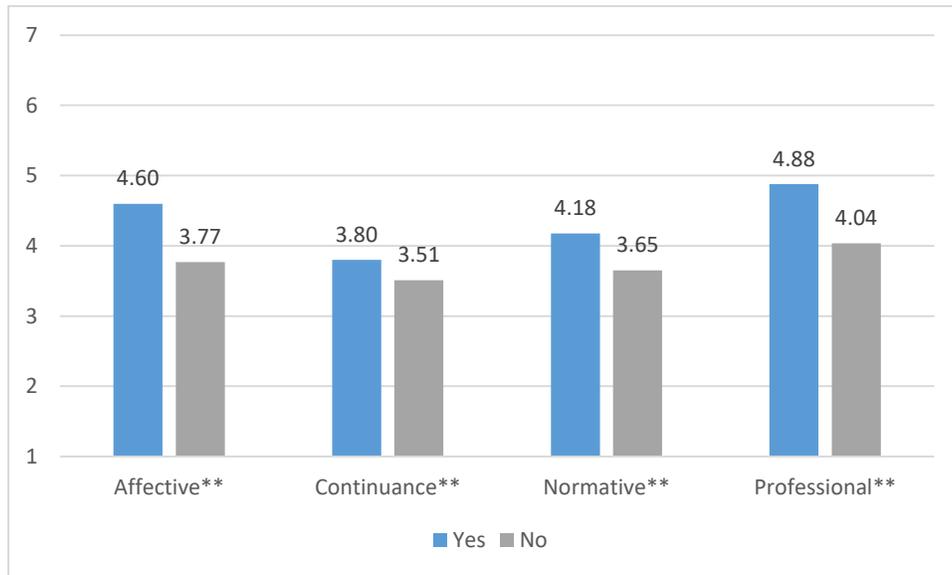
*p<0.05 **p<0.01

Source: the author’s own research data, 2018

The diversified job tasks showed significant results in case of all commitment components. The difference is especially outstanding in case of the emotional component. This result confirmed the experience of earlier studies (Argyris 1964; Thornton 1970; Hall – Schneider 1972).

We performed cross-table tests to find out whether there is a correlation between the flexible job tasks and the interviewee’s job, position and individual socio-demographical characteristics. The statistical tests did not show any significant values in case of the correlation between the variables. All this shows that the diversified job tasks can occur in case of any position. However, less than half of the interviewees (47.4%) experienced it. To make job tasks more diversified, the companies could expand or enrich the job tasks, rotate the tasks or introduce other on the job training forms (creating a mentoring system that would enhance organizational knowledge management, project work action learning etc.).

Figure 6: Whether the interviewees experience any measures aimed to boost the workplace atmosphere, according to the commitment components



**p<0.01

Source: own research data, 2018

The employees claim to be more committed at those workplaces and in those workgroups where the workplace atmosphere is being improved. This confirmed other researchers' findings (Buchanan 1974; Dubin et al., 1976). Our results show that large companies pay more attention to improving the atmosphere (93%). Then come the medium-sized businesses (73%) and then the small businesses (52%). The latter result might occur because the employees thought of formal events when answering our questions. In case of small businesses, these measures are implemented rather informally. The wrong interpretation can also be seen from the fact that nearly three quarters (71.7%) of the interviewees told that the measures to improve the workplace atmosphere were frequent in the workgroups.

We examined whether this variable could be correlated to the interviewees' job, position or any socio-demographical characteristics. However, we did not receive any significant result. This means that such measures could be introduced independently of the type of organization, workgroup or job, since the good workplace atmosphere greatly contributes to the increase of the employees' commitment.

Acknowledgment

The research was supported by the ÚNKP-17-14 New National Excellence Program of the Ministry of Human Capacities, Hungary.

References

1. Aranya, N., Pollock, J., Amernic, J. (1981): An examination of professional commitment in public accounting. *Accounting, Organizations and Society*, 6:4, pp. 271-280.
2. Argyris, C. (1964), *Integrating the Individual and the Organization*. New York: John Wiley
3. Autor, D. – Handel, M. (2013): Putting Tasks to the Test: Human Capital, Job Tasks, and Wage. *Journal of Labor Economics*, 31(2), pp. 59-96.

4. Buchanan, B. (1974): Building organizational commitment: the socialization of managers in work organizations. *Administrative Science Quarterly*, 19:4, pp. 533-546.
5. Csedő Cs. - Frajna P. A. - Horváth A. - Kolbe T. - Kovács T. Poór J. (2016): Szakemberhiány és munkaerő-megtartás a kulcsmunkakörökben. PIVOT Tanácsadók, Budapest
6. Csupány J. – Tánzos T. (2018): A humán erőforrás technológiai fejlődésben betöltött szerepének mérési sajátosságai. *Észak-Magyarországi Stratégiai Füzetek XV.:(1)* pp. 30-42.
7. Central Statistical Office (2018a)
<http://www.ksh.hu/docs/hun/xftp/idoszaki/mpf/mpf1712.pdf>
8. Central Statistical Office (2018b)
http://www.ksh.hu/docs/hun/xstadat/xstadat_evkozi/e_qli027a.html
9. Dubin, R., Hedley R. and Taveggia T. (1976): Attachment to work. In: R. Dubin (eds.) *Handbook of Work, Organization, and Sociology*, Skokie: Rand McNally, pp. 281-341.
10. EUROSTAT (2018) - job vacancy statistics
http://ec.europa.eu/eurostat/statistics-explained/index.php/Job_vacancy_statistics
11. Hall, D. T., - B. Schneider (1972): Correlates of organizational identification as a function of career pattern and organizational type. *Administrative Science Quarterly*, 17:3, pp. 340-350.
12. Kiss Cs. (2013): A szervezeti elkötelezettség és a munka-család konfliktus összefüggései az ügyfélszolgálati munkában. PhD értekezés, Budapesti Corvinus Egyetem
13. Kozák A. – Csupány J. (2018): A munkaerő-megtartást célzó szervezeti intézkedések hatékonyságának vizsgálata. *Acta Carolus Robertus* (lektorálás alatt)
14. Krajcsák Z. (2018): Az alkalmazotti elkötelezettség relatív fontossága a munka megváltozó világában. *Vezetéstudomány*, XLIX. évf. 2018/2. szám. pp. 38-44.
15. Krajcsák Z. – Kozák A. (2018): Az alkalmazottak erősödő alkupozíciója: Szervezeti alkalmazkodás az új munkaerőpiaci trendekhez. *Marketing & Menedzsment* (lektorálás alatt)
16. Meyer, J. P. – Allen, N. J. (1984): Testing the "side-bet theory" of organizational commitment: Some methodological considerations. *Journal of Applied Psychology*, 69:3, pp. 372-378.
17. Mueller, C. W., Wallace, J. E., - Price, J. L. (1992): Employee commitment: resolving some issues. *Work and Occupations*. 19:3, pp. 211-236.
18. Nábelek F. – Sturcz A. – Tóth I. (2016): Az automatizáció munkaerő-piaci hatásai. Magyar Kereskedelmi és Iparkamara, Gazdaság- és Vállalkozáskutató Intézet, Budapest
19. Nábelek F. – Hajdú M. – Nyíró Zs. – Tóth I. (2017): A munkaerőhiány vállalati percepciója. Magyar Kereskedelmi és Iparkamara, Gazdaság- és Vállalkozáskutató Intézet, Budapest
20. Nyíró Zs. – Tóth J. (2017): A munkaerő-hiányra adott vállalati reakciók. Magyar Kereskedelmi és Iparkamara Gazdaság- és Vállalkozáskutató Intézet, Budapest
21. Rothwell, A. – Arnold, J. (2007): Self-perceived employability: development and validation of a scale. *Personnel Review*, 36:1, pp. 23-41.
22. Thornton, R. (1970): Organizational involvement and commitment to organization and profession. *Administrative Science Quarterly*, 15:4, pp. 417-427.