Wage Trends in Czech Education and Healthcare Sectors

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Abstract: The rate of pay in education and health service is a permanently discussed topic in the Czech Republic. The present paper addresses the development of wages in the two sectors from the onset of the global financial crisis onwards. The research data are drawn from the website of the Czech Statistical Office and the variable investigated is an employee's gross nominal monthly wage. The main objective of the study is to examine wage developments and compare them with the best- and worst-paying industries, the sectors being clustered together according to the average wage and selected variables. Another aim is the description of the trends in wage differentiation and diversification. Forecasts of wage levels and entire distributions in the two sectors by 2020 are also part of the research project.

Key-Words: - Education sector, healthcare sector, wage development, gross monthly wage, average wage, median wage, Gini coefficient, wage diversification, wage level prediction, wage distribution prediction

1 Introduction

In general, employees performing mentally challenging labour achieve the highest wage levels, while those doing manual work receive lower wages. The highest monthly pay fluctuations are reported for managers, whereas the smallest differences in monthly wages are detected equally for office and teaching staff throughout the Czech Republic.

It is a generally accepted view that the education of emerging generations is a priority, deserving an adequate remuneration package.

For many years, governments in the Czech Republic have relied on the graduates from medical faculties and schools to be so dedicated to their profession that they are satisfied with relatively low salaries and wages, just fulfilling the ethical mission of helping the sick. However, those who choose to pursue a career in such a demanding working field as healthcare expect decent pay and working conditions – including non-medical personnel such as ambulance drivers, hospital attendants, cooks, helpers and caretakers, who are among the most vulnerable in the labour market.

Pay in education and health service remains a topic of ongoing debate in the Czech Republic, as a large proportion of highly educated but relatively low-paid staff are employed in these sectors. Leaving one's career in teaching in particular for a better-paid job is, unfortunately, a long-term national trend.

The level of earnings is the subject of extensive comparative research, allowing for both international and intersectoral comparison. Falaris (2004), for example, treats the sector of education as endogenous and conducts tests for selectivity in wage equations, finding out that wages of women in the private sector do not increase with the level of schooling and work experience, contrary to equally trained and experienced men whose wages go up at comparable rates in both sectors. Melly (2005) measures and decomposes the differences in earning distributions between public and private sector employees in Germany for the years 1984–2001. Martins & Pereira (2004) use quantile regression estimates of returns to education to explore the relationship between educational attainment and pay inequality. The mid-1990s empirical data for employed women from 16 countries suggest that returns to schooling are higher for more skilled ones, conditional upon their observable characteristics. Teal (2000) showed that the real wage rate for the unskilled workers continued to decline. Factor share equations for skilled and

unskilled labour are estimated, indicating an increase in skilled wages, which leads to the replacement of unskilled labour but not to an increase in the share of skilled work in wage growth. Panizza, di Tella & Van Rijckeghem (2001) deal with public and private sector pay in Latin America. Verhoogen (2008) introduces a new way of linking trade and wage inequality in developing countries, called the quality-upgrading mechanism, examining its empirical implications in panel data on Mexican manufacturing sector. McCoy, Bennett, Witter, Pond, Baker, Gow, Chand, Ensor & McPake (2008) investigate fiscal and macroeconomic factors affecting pay structures and adequacy for health care workers in the public sector in Sub-Saharan Africa.

The present paper focuses on the development in education and healthcare remuneration since the 2008 economic downturn, aiming at capturing the level and differentiation of pay. If the right wage policy decisions are to be taken, it is important to know overall wage distributions. That is why predictions for both wage levels and entire distributions by 2020 are made. Comparison of wage levels in education and healthcare sectors with two best- and worst-paid ones in the Czech economy is also part of the study. Another objective is the construction of clusters of the most similar sectors according to the average pay and selected variables in 2017.

The wake of the financial and economic crisis being in the autumn of 2008, its recessive economic impact first manifested in 2009, when the Czech economy recorded a decline of 4.8 percent. Therefore, the study covers the period between 2009 and 2017, the predictions concerning the years 2018–2020.

2 Database

The research data come from the official website of the Czech Statistical Office (CSO). Annual data are in the form of an interval frequency distribution with extreme open intervals. The research variable is the gross (nominal) monthly wage in CZK, workers employed in the Czech Republic representing statistical units surveyed.

CSO data include employees in private and public enterprises. The wage is paid to an employee for work done in the private (business) sector, while the salary is received in budget (public, state, non-business) organizations. In general, salaries in the latter area are more equalized than wages in the former sector which very high wage variability. In terms of data presented on the CSO website, both wages and salaries are referred to as "wages".

The selected CSO-classified economic sectors and their modified (usually abbreviated) names are presented in Table 1 below.

Table 1: Selected sectors – CSO classification and modified names

CSO name	Modified name
Education	Education system
Human health and social work activities	Health service
Financial and insurance activities	Finance and insurance
Information and communication	Informatics and communications
Accommodation and food service activities	Accommodation activities
Administrative and support service activities	Administrative activities

Source: www.czso.cz

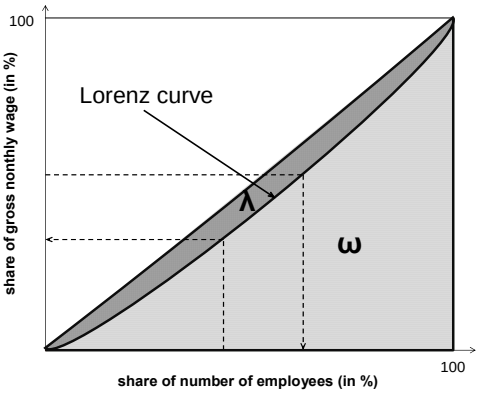
3 Theory and methods

Simple descriptive statistics are used to study the development of the empirical distribution of gross monthly wage from 2009; see Larson & Farber (2015). The Gini coefficient was employed to examine the diversification development of the wage distribution in education and healthcare industries over the given period.

The Gini coefficient is related to the Lorenz curve (cf. Figure 1) indicated in bold (including its extreme alternative shapes for the case of both zero and maximum possible diversification). The Lorenz curve is plotted in a rectangular chart with two scales from 0 to 100 percent. Cumulative relative frequencies (in percentage of units) are on the horizontal coordinate axis, employees representing the gross monthly wage variable. Cumulative totals (in percentage terms) of the concentrated variable, i.e. the gross monthly wage, are plotted on the axis

of ordinates. Cumulative relative frequencies of units and corresponding cumulative totals of the concentrated variable thus represent the coordinates of points on the Lorenz curve. The curve merges with the diagonal of the graph in the case of zero diversification, the same proportion of the total sum of values of the research variable relating to each unit. This would occur if all employees earned the same gross monthly wage. The more the Lorenz curve bends, the higher is the diversification of the research variable, i.e. a considerably large part of the total sum of variable values is concentrated in a small number of statistical units. The highest diversification occurs when the total sum of variable values is concentrated into just a single unit. The Gini diversification coefficient is the ratio of the area that lies between the graph diagonal and the Lorenz curve, marked as (λ) in Figure 1, over the total area of the triangle below the diagonal, which is indicated by an area of (λ + ω).

Fig. 1: Lorenz curve



Source: Chotikapanich (2008)

After multiplying by 100, the value of the Gini coefficient ranges from 0 to 100 percent, i.e. from extreme levelling (zero diversification), when all employees receive the same pay, to extreme diversification (maximum possible concentration), when the whole amount of wages is paid to one employee.

Wage distribution models are based on three-parameter lognormal curves, whose parameters are estimated applying the maximum likelihood method. The principles of using three-parameter lognormal curves in wage distribution modelling are outlined in, e.g. Johnson, Kotz & Balakrishnan (1994) and Kleiber & Kotz (2003), the application of the maximum likelihood method for point parameter estimation being dealt with by Johnson, Kotz & Balakrishnan (1995).

Time series analysis principles are laid down by Shumway & Stoffer (2017). Wage level predictions (average and median [middle] gross monthly wage) by 2020 according to sectors were made using the respective time series from the period 2009–2017. In time series trend analysis, exponential smoothing technique was utilized. This adaptive approach employs the weighted least square method, the scales decreasing exponentially towards the past. Its advantage lies in the fact that the most recent observations have the highest weight. Effective exponential smoothing was chosen using interpolation criteria, statistical software automatically evaluating the most appropriate combinations of equalizing constants α and β.

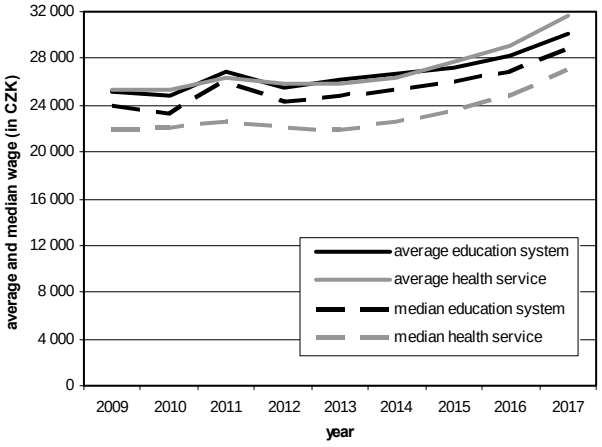
Sample residual and partial autocorrelation functions, respectively, indicate that the non-systematic component does not show autocorrelation in either case, and consequently the relevant exponential smoothing is satisfactory. Durbin-Watson statistics are close to 2 in all cases, i.e. always in the interval (1.6, 2.4). Random faults can be therefore considered as independent. The quality of the model is assessed using the Theil coefficient of inequality. The annual time series are reduced to $m = 3$ observations, forecasts for the three years being properly smoothed. The Theil index equals zero only if the forecasts are flawlessly accurate; the more the coefficient deviates from zero, the more the prediction differs from an ideal prognosis. The square root of the Theil coefficient can be interpreted as a relative prediction error. The calculated index values along with the relative prediction error indicate the high quality of the selected exponential smoothing models.

Cluster analysis principles are explained, for example, by Everitt, Landau, Leese & Stahl (2011), who apply Ward's method and the Euclidean distance as the most widely used clustering techniques. Employing the Dunn index, the number of clusters was determined to be five.

4 Results and Discussion

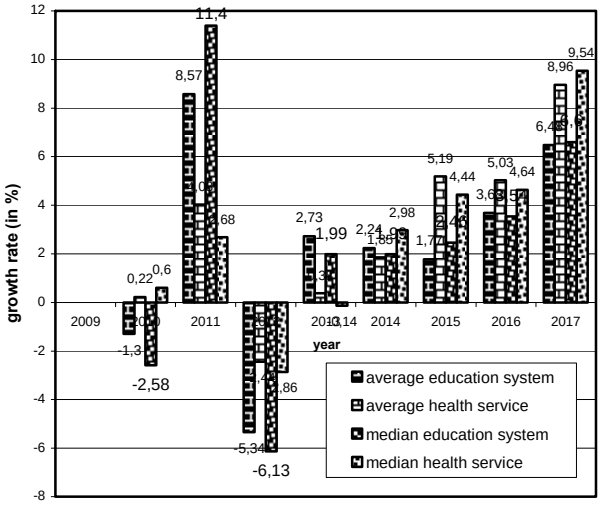
Figures 2 and 3 are closely related to each other. The former figure illustrates the development of remuneration in education and healthcare sectors, evidencing approximately the same wage levels, the latter one presenting growth rates of average and median wage. Both these figures indicate a substantial pay rise in the sector of education in 2011, which is the result of incoming and young teachers' wage increase in the year in question. An increase in the annual growth rate of average and median wages – respectively, by 8.57 and 11.4 percent – is significant.

Fig. 2: Average and median wage (in CZK) in education and healthcare sectors



Source: Own research

Fig. 3: Growth rates of average and median wage (in percent) in education and healthcare sectors



Source: Own research

Similarly, there was a relative pay increase in the healthcare sector in 2011 too. Despite a nearly 15-percent rise of medical doctors' salaries, the 2011 increase was not as significant as in education since it applies only to public healthcare facilities financed by the government, regions and municipalities, employing only about 12,000 doctors. The year 2012 was different for both industries analysed, wage levels declining more sharply in the education sector.

Since 2013, the wage level has been rising more rapidly in both sectors, with an exception of a slight drop in 2013 median wage in the health service sector.

Figures 4–7 allow for comparison of the development of the average wage in education and healthcare industries with that in two best-paying (finance and insurance, informatics and communications) and worst-paying (accommodation and administrative activities) sectors, each pie chart segment showing the respective percentage share.

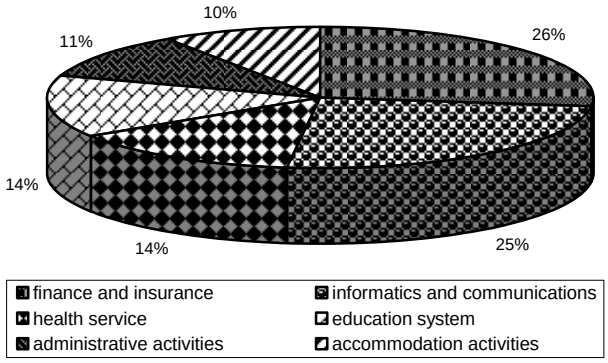
Figures 8–11 display the same with respect to the median wage.

We can see from the figures above that the highest average wages were paid in the sector of finance and insurance followed by informatics and communications, education and health sectors' wage levels varying during the monitored period.

Employees in the sector of accommodation activities followed by those in administration earned on average the lowest wages over the whole period under review.

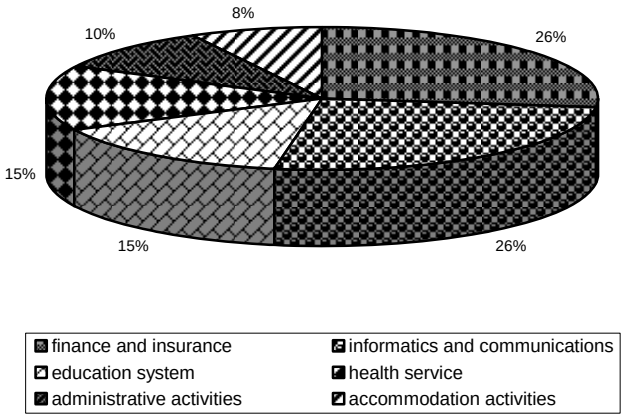
In terms of the median wage, the order of the sectors examined – (1) informatics and communications, (2) finance and insurance, (3) education, (4) healthcare, (5) administrative activities, and (6) accommodation activities – stayed the same throughout the period.

Fig. 4: Comparison of average wages in education and healthcare sectors with best- and worst-paying ones in 2009



Source: Own research

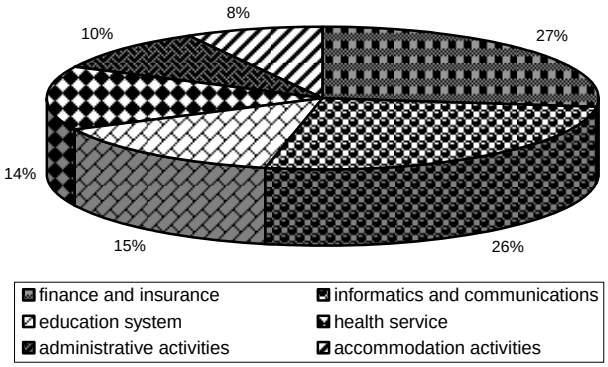
Fig. 5: Comparison of average wages in education and healthcare sectors with best- and worst-paying ones in 2011



Source: Own research

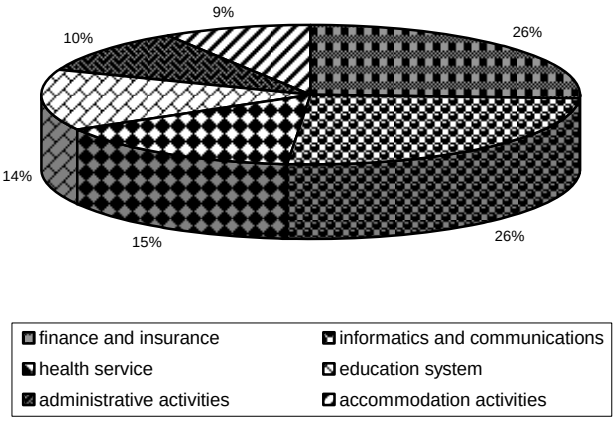
The values in Table 2 indicating the average annual growth rates of average and median gross monthly wages for the time of the global financial crisis (2009–2013), its aftermath (2013–2017), the whole research (2009–2017) and following (2017–2020) periods, respectively, are consistent with graph results in Figures 2 and 3. We can observe only a slight average annual increase in wage levels during the crisis, which is mitigated for both sectors in 2011, exceeding 1 percent only in the education sector.

Fig. 6: Comparison of average wages in education and healthcare sectors with best- and worst-paying ones in 2014



Source: Own research

Fig. 7: Comparison of average wages in education and healthcare sectors with best- and worst-paying ones in 2017

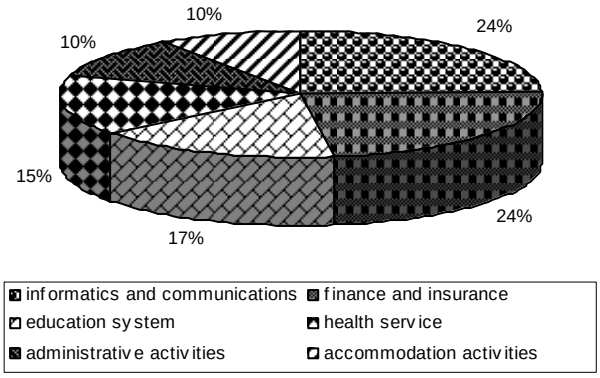


Source: Own research

In the crisis aftermath, the wage level was rising especially in the health sector, average annual growth rates of both average and median gross monthly wages not falling below 5 percent. Wage growth was slower in the education sector, annual growth rate of both average and median gross monthly wages remaining above 3.5 percent. We are cautious in forecasting the average annual wage growth rate for the years 2017–2020.

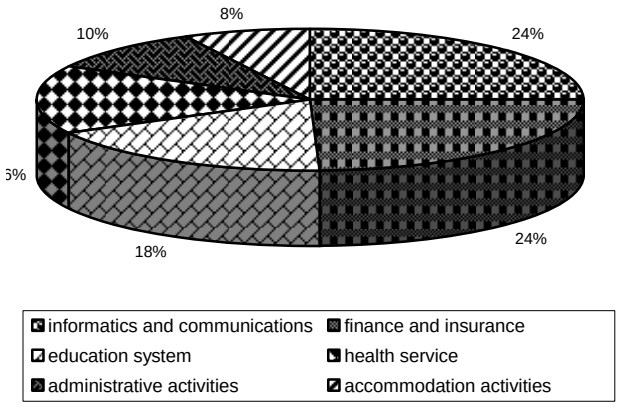
Figure 12 gives an idea of the development of absolute and relative variability characteristics in both industries under review, including the projected trend by 2020. It is obvious that wages in the healthcare sector are much more variable in both absolute and relative terms.

Fig. 8: Comparison of median wages in education and healthcare sectors with best- and worst-paying ones in 2009



Source: Own research

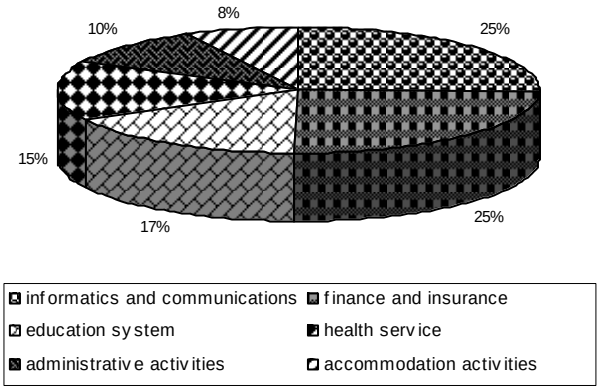
Fig. 9: Comparison of median wages in education and healthcare sectors with best- and worst-paying ones in 2011



Source: Own research

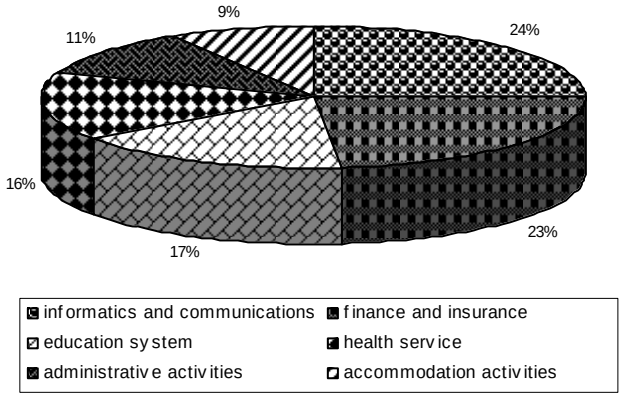
The standard deviation (SD) is a characteristic of absolute variability representing – in the present case – the quadratic mean of all individual employees' wage deviations from their arithmetic mean, thus indicating the average degree of wage differentiation from the arithmetic mean. The values of absolute wage variability tend to grow along with rising wage levels. Therefore, it is recommended to use relative variability measures such as the coefficient of variation (CV), expressed as a percentage ratio of the wage standard deviation to the arithmetic mean of wages. The variation coefficient is not defined if the arithmetic mean is equal to zero, this, however, not being the case of payroll issues.

Fig. 10: Comparison of median wages in education and healthcare sectors with best- and worst-paying ones in 2014



Source: Own research

Fig. 11: Comparison of median wages in education and healthcare sectors with best- and worst-paying ones in 2017



Source: Own research

Table 2: Average annual increase (in percent) in average and median gross monthly wage in education and healthcare sectors

	Education		Healthcare	
Period	**Aver.**	**Med.**	**Aver.**	**Med.**
Ø 2009–2013	1,04	0,96	0,52	0,05
Ø 2013–2017	3,53	3,63	5,23	5,37
Ø 2009–2017	2,27	2,29	2,85	2,68
Ø 2017–2020	1,99	1,77	3,39	3,33

Source: Own research

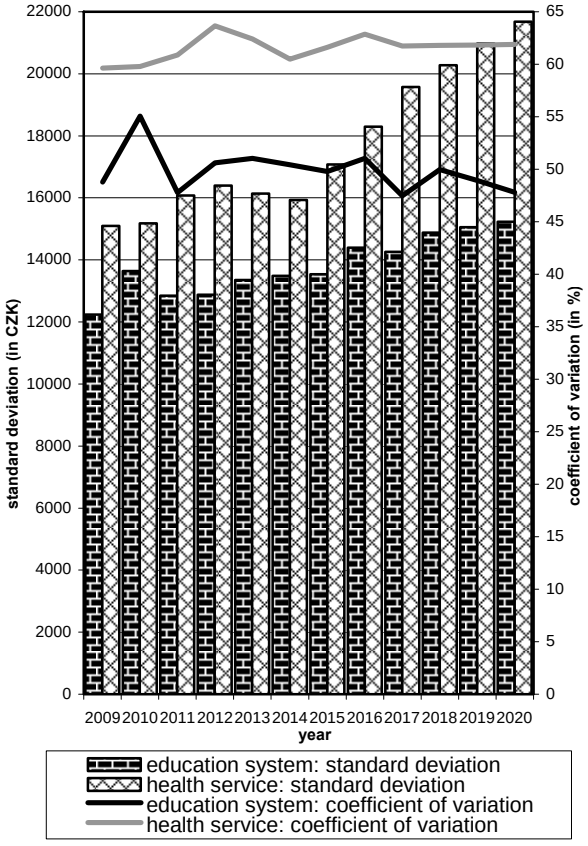
Absolute wage variability is set to increase in both sectors, which is – as we can expect – in line with wage growth, while relative variability is different for each sector; see Figure 12.

Figure 13 shows wage diversification trends for both sectors including 2020 projections.

The closer the Gini coefficient approaches zero, the more indiscriminately egalitarian the wage

distribution becomes. The Gini coefficient values close to 100 percent, on the other hand, are indicative of earning inequality, signalling extreme diversification. However, the above extreme values of the Gini coefficient do not practically occur.

Fig. 12: Absolute and relative variability of gross monthly wage in education and healthcare sectors, incl. predictions by 2020 (SD in CZK, CV in percent)

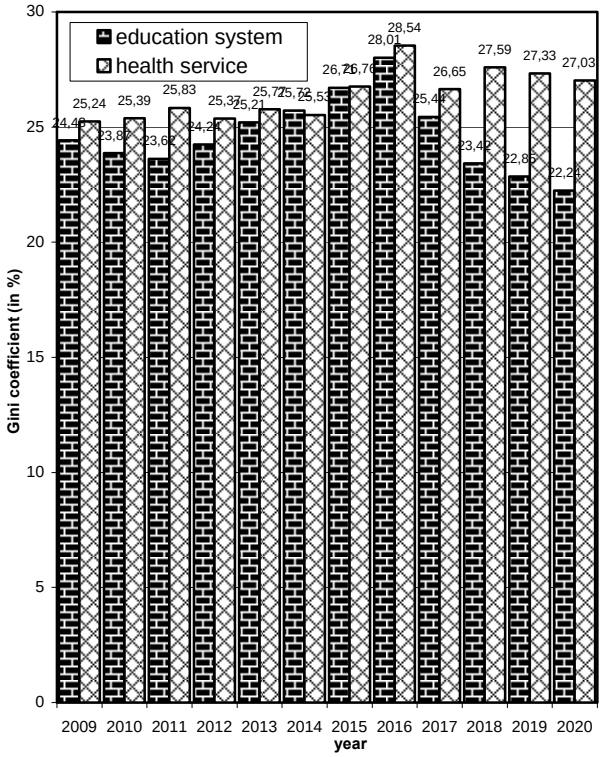


Source: Own research

It is clear from Figure 13 that wages in the health service are a little more diversified than in the education sector, excluding the year 2014. We expect significantly greater wage diversification in the former sector, with a decreasing trend in both of them in the future.

Figures 14–22 show the development of the entire wage distribution, allowing for comparison of the two sectors over time. Since empirical wage distributions could not be used due to their open ranges of different widths, model wage distributions applying three-parameter lognormal curves were utilized. The values in Table 3 were calculated from these model distributions.

Fig. 13: Gini coefficient (in percent) of gross monthly wage in education and healthcare sectors, incl. predictions by 2020



Source: Own research

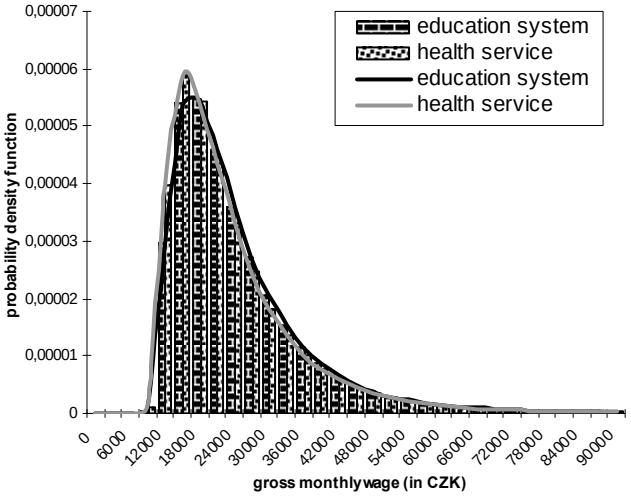
Table 3: Estimated proportions of employees (in percent) whose gross monthly wage reached maximum upper limit in 2009, 2014 and 2017

Upper limit	Education sector			Health sector		
	2009	2014	2017	2009	2014	2017
15,000	16.8	13.7	4.4	21.2	17.1	4.9
20,000	44.0	39.0	26.7	48.7	44.0	27.0
30,000	77.6	73.1	64.8	79.7	76.5	63.7
40,000	90.7	87.7	82.8	91.4	89.6	81.5
50,000	95.8	94.0	91.0	96.0	95.0	89.9
60,000	98.0	96.9	95.0	98.0	97.4	94.2
70,000	99.0	98.3	97.1	98.9	98.6	96.5
80,000	99.4	99.0	98.2	99.4	99.2	97.8
90,000	99.7	99.4	98.9	99.7	99.5	98.6
100,000	99.8	99.6	99.3	99.8	99.7	99.0

Source: Own research

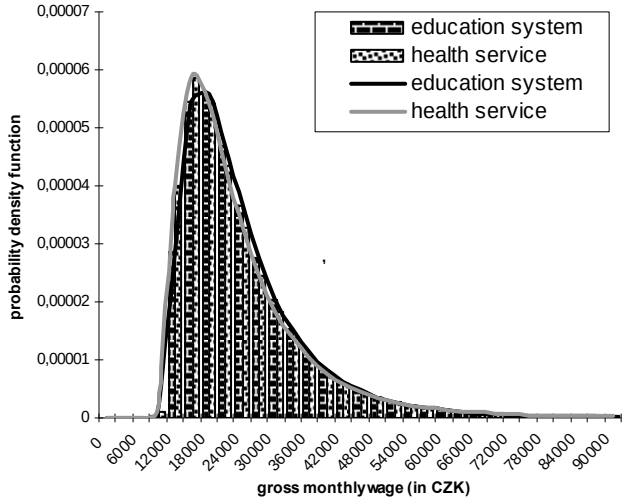
As is evident from the table, there has been a considerable upward shift in the wage distribution in both sectors since the economic downturn.

Fig. 14: Model distribution of gross monthly wages in education and health sectors in 2009



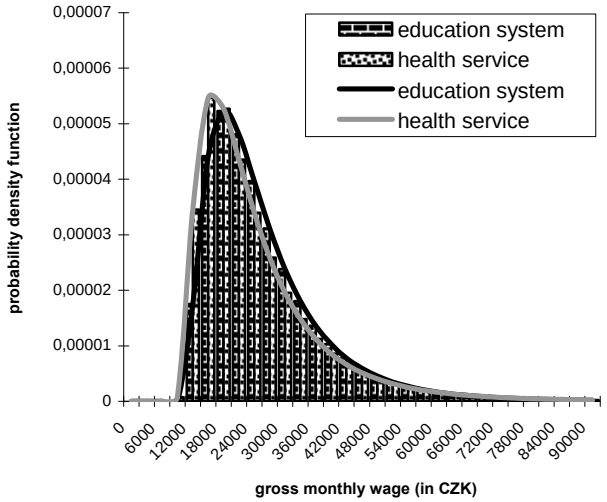
Source: Own research

Fig. 15: Model distribution of gross monthly wages in education and health sectors in 2010



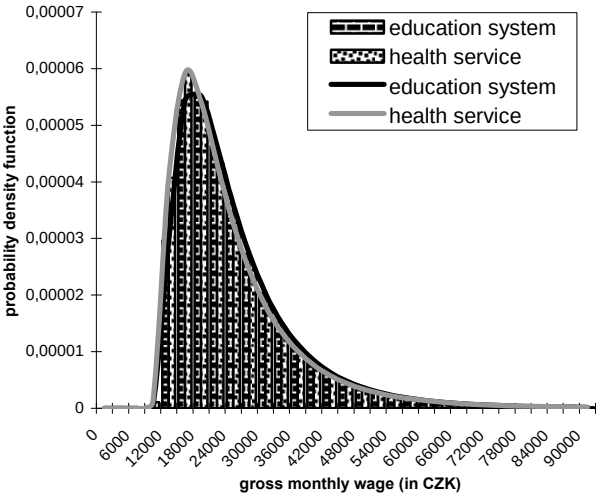
Source: Own research

Fig. 16: Model distribution of gross monthly wages in education and health sectors in 2011



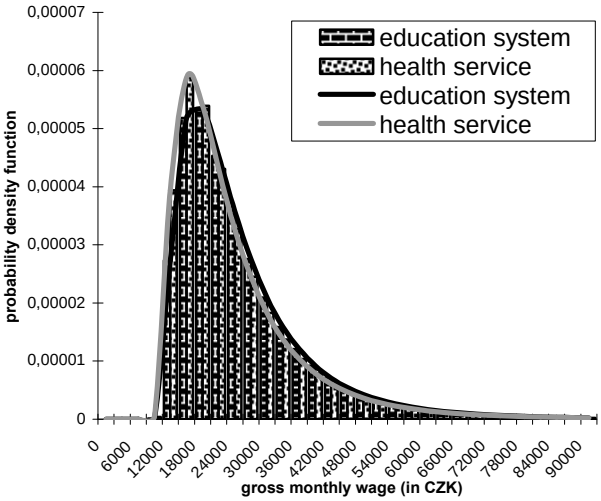
Source: Own research

Fig. 17: Model distribution of gross monthly wages in education and health sectors in 2012



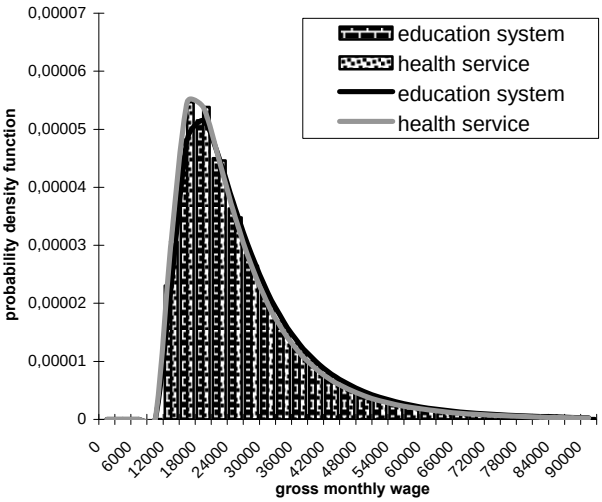
Source: Own research

Fig. 18: Model distribution of gross monthly wages in education and health sectors in 2013



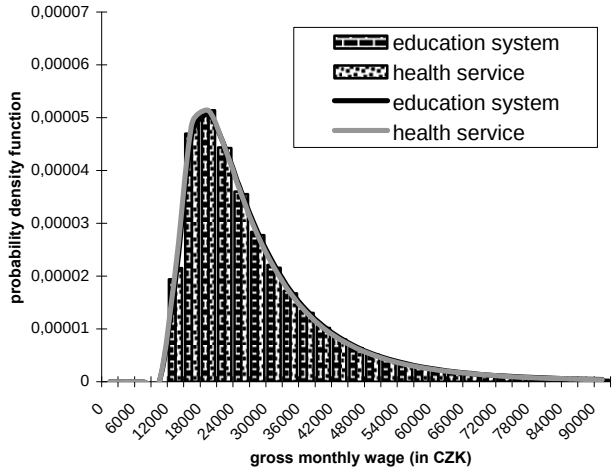
Source: Own research

Fig. 19: Model distribution of gross monthly wages in education and health sectors in 2014



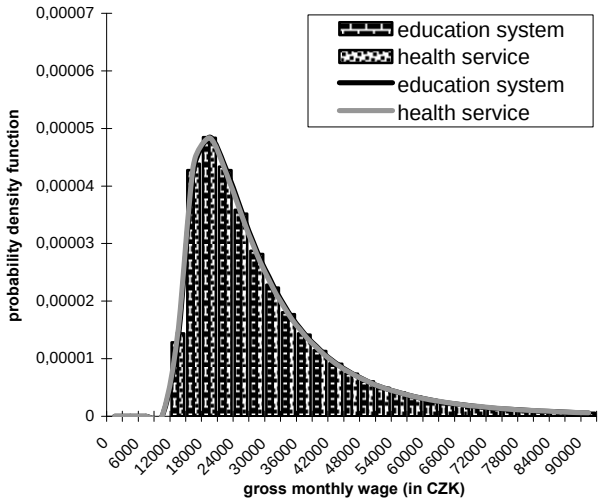
Source: Own research

Fig. 20: Model distribution of gross monthly wages in education and health sectors in 2015



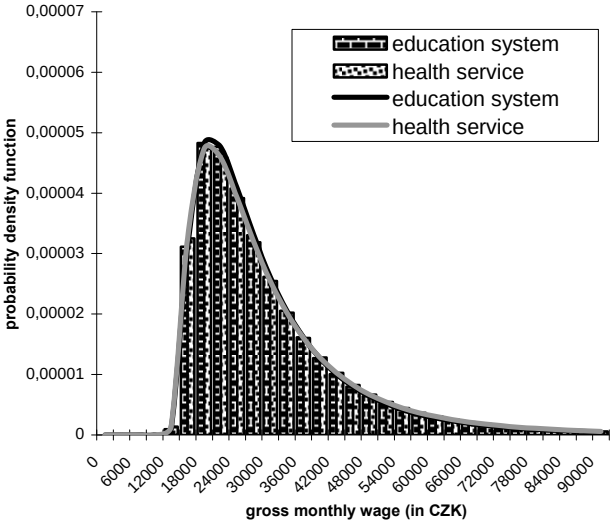
Source: Own research

Fig. 21: Model distribution of gross monthly wages in education and health sectors in 2016



Source: Own research

Fig. 22: Model distribution of gross monthly wages in education and health sectors in 2017



Source: Own research

For example, while in 2009 16.8 percent of employees in education reached a maximum wage of CZK 15,000, in 2014 and 2017 there were only 13.7 and 4.4 percent of them, respectively. In the health service, there were, respectively, 21.2, 17.1 and 4.9 percent of employees receiving the lowest maximum in the same three years.

As shown in Table 3, approximately 64.8 percent of the workforce in education and 63.7 percent of healthcare system staff (i.e. about two-thirds of employees in both sectors) had their gross monthly wage lower or equal to the national average in 2017, the latter having climbed almost to CZK 30,000 (exactly to CZK 29,051). The proportion of employees with the highest gross monthly earnings (with an upper limit of CZK 100,000), on the other hand, did not exceed 1 percent for both sectors. Overall, no significant changes at high wage levels were recorded throughout the whole research period.

Figures 23–26 present the results for exponential smoothing of time series of average and median gross monthly wage, using Brown's quadratic and Holt's linear smoothing methods, the former for education, the latter for the healthcare sector.

Based on trend analysis of the corresponding time series, average and median gross monthly wage predictions for both analysed sectors were made; see Table 4. Wage levels are likely to grow steadily in both sectors by 2020. Faster annual growth of more than 3 percent on average is predicted for the health service, the education sector expecting a 2 percent increase. The above trends are consistent with Table 2.

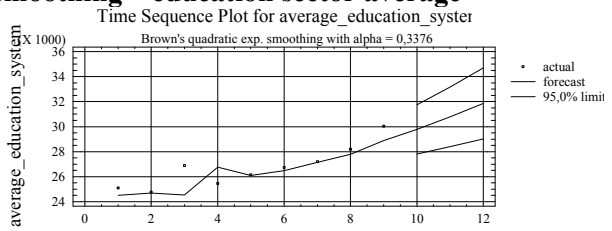
Figures 27 and 28 summarize outcomes for exponential smoothing of time series of the wage standard deviation necessary for the construction of the prediction model of the entire wage distribution by 2020. Holt's linear exponential smoothing was used as the most appropriate technique for both sectors; see Table 5.

The minimum wage was CZK 12,200 in 2018 and will be increased by CZK 1,000 in 2019. The current Czech government plans to regularly index the minimum wage from 2020 onwards. The indexation scheme is based on the multiplication of the projected national average wage by 0.44. Thus,

the assumed 2020 minimum wage was calculated as follows:

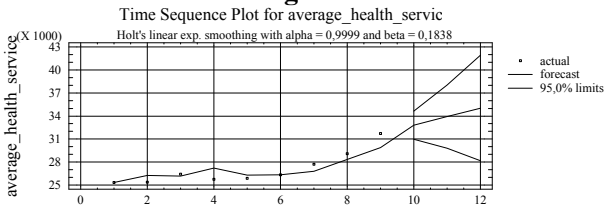
$$32{,}456 * 0.44 = 14{,}280.64 = 14{,}300 \text{ CZK}.$$

Fig. 23: Brown's quadratic exponential smoothing − education sector average



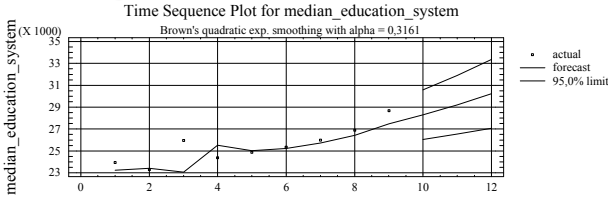
Source: Own research

Fig. 24: Holt's linear exponential smoothing− healthcare sector average



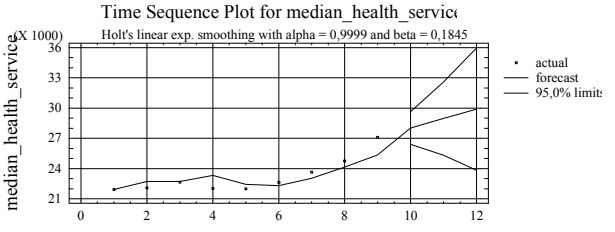
Source: Own research

Fig. 25: Brown's quadratic exponential smoothing − education sector median



Source: Own research

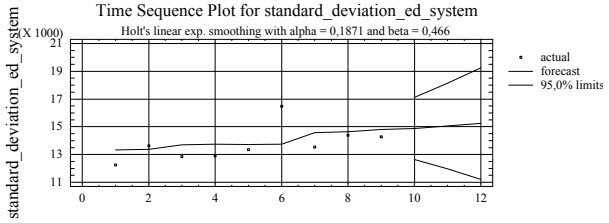
Fig. 26: Holt's linear exponential smoothing− healthcare sector median



Source: Own research

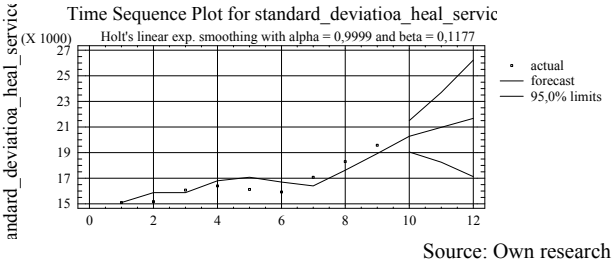
Figure 29 displays Brown's linear exponential smoothing for time series of the national average gross monthly wage, which is necessary for average wage predictions by 2020; see Table 6. The 2020 value (CZK 32,456) was used for the estimation of the minimum wage for the same year.

Fig. 27: Holt's linear exponential smoothing− education sector standard deviation



Source: Own research

Fig. 28: Holt's linear exponential smoothing− healthcare sector standard deviation



Source: Own research

Table 4: Prediction of wage level development (in CZK) for education and healthcare sectors by 2020

Year	Education sector		Healthcare sector	
	Average	Median	Average	Median
2018	29,778	28,306	32,816	28,031
2019	30,771	29,217	33,926	28,965
2020	31,862	30,216	35,036	29,898

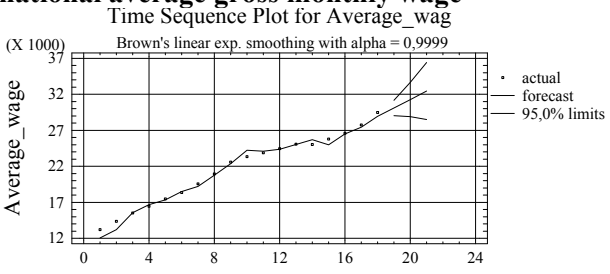
Source: Own research

Table 5: Prediction of wage variability development (SD in CZK, CV in percent) for education and healthcare sectors by 2020

Year	Education sector		Healthcare sector	
	SD	CV	SD	CV
2018	14,881	49.97	20,278	61.79
2019	15,056	48.93	20,981	61.84
2020	15,230	47.80	21,685	61.89

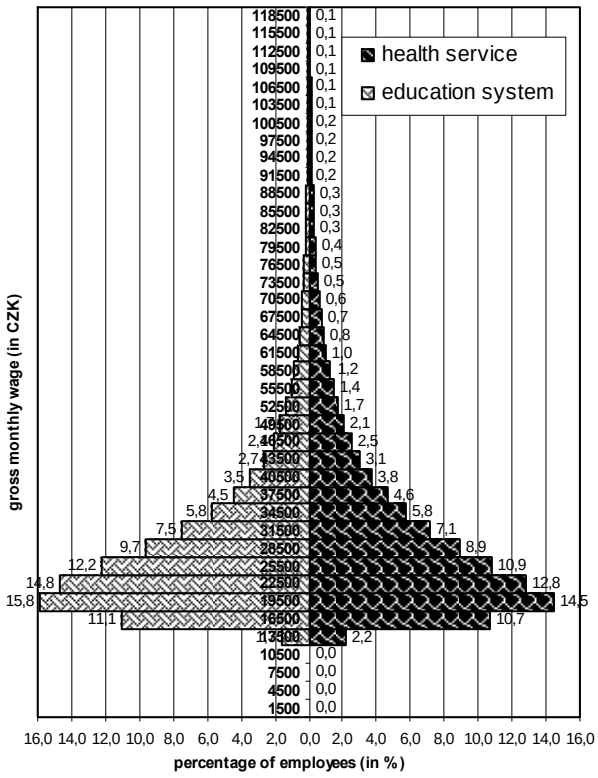
Source: Own research

Fig. 29: Brown's linear exponential smoothing − national average gross monthly wage



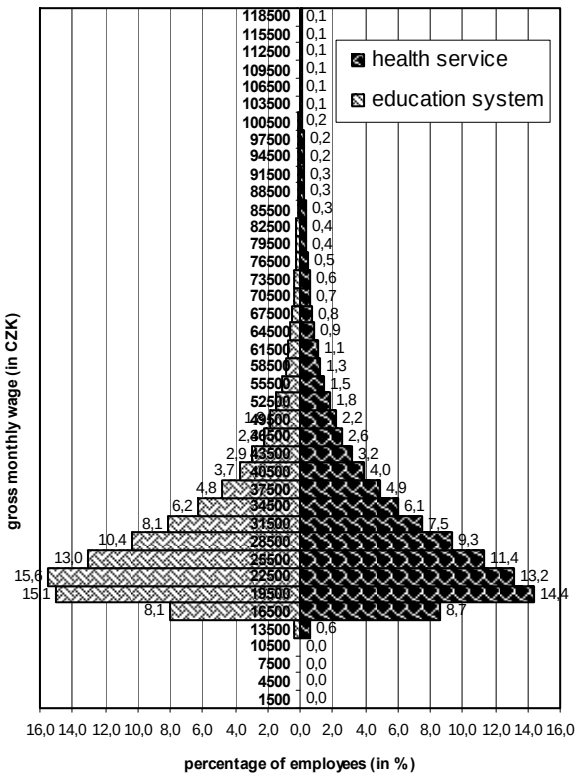
Source: Own research

Fig. 30: Prediction of gross monthly wage distribution (in percent) for education and healthcare sectors for 2018



Source: Own research

Fig. 31: Prediction of gross monthly wage distribution (in percent) for education and healthcare sectors for 2019



Source: Own research

Figures 30–32 present predictions of the full wage distributions for both health and education industries by 2020, wage ranges of CZK 3,000 being plotted on vertical axes. We can see larger percentages of lower and higher wage intervals, respectively, in education and health sectors. This may be due to higher wage expectations in the latter sector over the next three years. Zero share of the lowest wage ranges is related to the existence of a minimum wage and its steady increase.

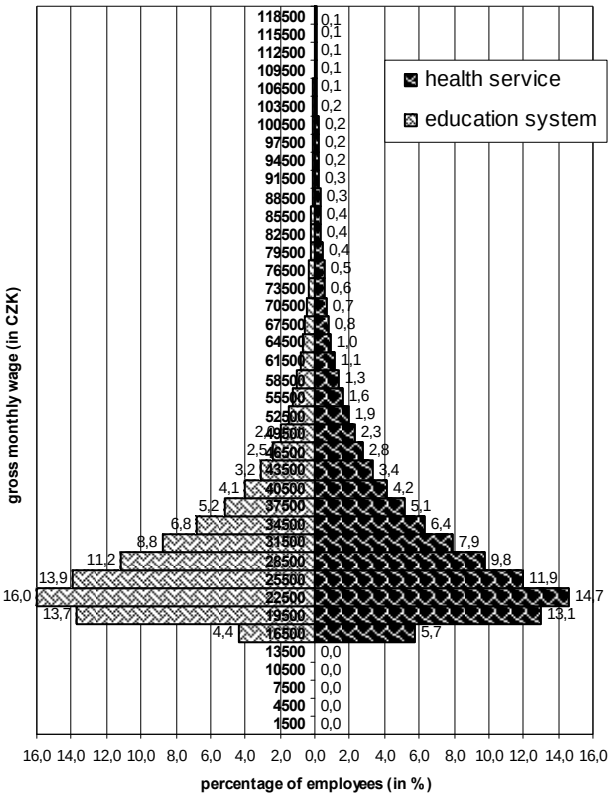
Table 6: Prediction of national average wage development (in CZK) to 2020

Year		
2018	**2019**	**2020**
30,110	31,283	32,456

Source: Own research

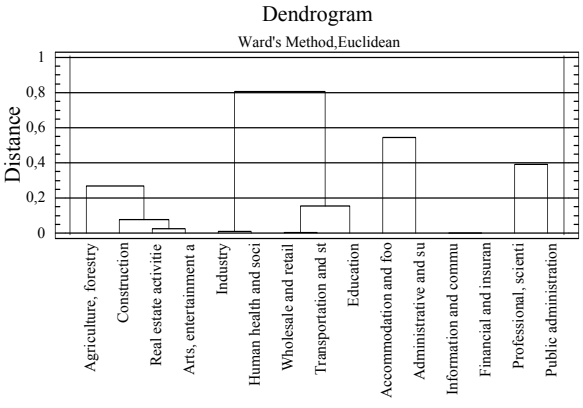
Figure 33 displays the results of cluster analysis. There are five sector groups comprising four (Agriculture, forestry and fishing, Construction, Real estate activities, Arts, entertainment and recreation), five (Industry, Wholesale and retail trade, Transportation and storage, Education, Health and social work activities), two lowest-paid (Accommodation and food service activities, Administrative and support service activities), two highest-paid (Information and communication, Financial and insurance activities) and two other (Professional, scientific and technical activities, Public administration and defence) sector members, respectively, clustered around certain average wages, the two sectors examined belonging to the same (five-member) cluster.

Fig. 32: Prediction of gross monthly wage distribution (in percent) for education and healthcare sectors for 2020



Source: Own research

Fig. 33: Cluster analysis dendrogram – Czech economy sectors clustered around similar average wages and related indicators in 2017



Source: Own research

5 Conclusion

It can be concluded that wages of employees in education and healthcare in the Czech Republic are broadly comparable. Currently, they are increasing the fastest since the 2008 economic downturn, especially in the health sector – average and median gross monthly wages having grown by 8.96 and 9.54 percent, respectively, compared to 6.48 and 6.60 percent, respectively, in the education sector in 2017. There was a dip in earnings during the crisis in 2011 – more significant in the education sector –, despite an increase in young teachers' and medical doctors' salaries; an almost 15 percent rise for the latter concerning only the public health service, which employs only about 12,000 medical doctors.

Comparing wage levels of education and healthcare sectors with the highest- and lowest paying industries in the Czech Republic, it was revealed that the median gross monthly wage in education was higher than that in the health sector throughout the monitored period. In terms of average pay, however, the situation is different. The average gross monthly wage in the former sector was higher only in 2011, when young teachers' salaries in particular had just started to grow markedly, and in 2014, when the Czech economy was on its way to recovery. In the wake of the global crisis and at the end of the research period, on the other hand, the average gross monthly wage in education was not as high as that in the healthcare sector. Both average and median gross monthly wages in both industries are noticeably lower compared with the two best-paid ones (i.e. finance and insurance, informatics and communications), while the difference from the lowest-paid sectors is not so significant.

Wages in the health service are slightly more differentiated, while the wage diversification is roughly the same in both sectors, wages in healthcare being predicted to be more diversified. Currently, about two-thirds of employees in both sectors receive lower gross monthly wages than the national average. We can expect a gradual increase in wage levels in education and healthcare industries by 2020. The average gross monthly wage in the two sectors is approximately the same as in those of wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage, and in other sectors of industry.

It is necessary to ensure that graduate teachers really start teaching in schools and neither medical faculty graduates nor trained nurses leave to work overseas, the lack of the latter as well as the shortage of younger GPs being a crucial problem of the healthcare system. Systemic measures, such as

increasing wage rates for school teachers and nurses, remain at the top of the government agenda since care for health and education of the population will always be the top priority.

At present, there are favourable conditions for people seeking to change their jobs, demanding higher wages. Despite pressures from the unions to negotiate fair wages, however, the Czech Republic remains among low-wage countries in the EU. The general problem of the labour market is excessive taxation of labour, which drains the net earnings of workers and lowers employers' motivation to raise wages. The solution is not to increase the minimum wage, a general prerequisite for pay rises being higher labour productivity. A reduction in labour taxation may thus be the starting point to be dealt with by national political actors.

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