

Labour Fluctuation in Hungary in Line of Empirical Research

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Abstract: Our aim is to show the relationships between fluctuations in the workforce and growth in the number of employees (the size of the organisation), increased turnover and the form of ownership. We identified these relationships by means of an empirical survey based on data provided by 207 organisations. In this we looked at the ways in which fluctuations in the workforce affecting both senior and middle managers, administrative staff and physical workers alike are affected by the size of the company, its turnover and also its form of ownership. This example of the European demographic situation should focus our attention on some of the social and economic problems to be faced in the coming years.

Keywords: fluctuation, size, ownership, Hungary

1 Introduction

Fluctuation indices are among the more important indicators of Human Resource (HR) sub-systems. They are calculated by dividing the number of employees who have left a company during a given year by the average number of staff. One conservative calculation suggests that the cost to a company when an employee

leaves may reach 40-50% of his or her average annual salary (Bodreau, 2010). However, it is important to understand the different effects that job leaving may produce. For example, the departure of a key-worker has a much greater impact than that of some minor subordinate.

International statistical data shows that the cost of replacing an employee may differ substantially according to the length of training required for any given position. According to international comparative studies (Cascio, 1991 and Pinkowitz et al), the total cost of replacement in relation to total annual compensation (i.e., total income + fringe benefits) is 25-150% for non-managerial positions, although it may reach 125-150% for senior management positions (Mathis and Jackson, 2003:90). According to a further study which analyses fifteen surveys, the average replacement cost may be as much as 40% of the annual compensation package (Compilation,...).

In both economic literature and in practice the most frequently applied method is the so-called *partial replacement cost calculation method* (Gómez-Mejía et al, 1995:231. and Carell et al, 1996:596), which takes into account administration as well as training costs – in addition to lost production.

A detailed calculation method recognised both in Hungary and internationally (Kutasi, 2011 and Lindner, 2012) states that the factors to be taken into account when calculating the cost of workforce replacement are: recruitment costs, induction/training costs, exit costs and cost of lost production (Torrington-Hall, 1995: 151).

In the following table the most relevant elements of a potential fluctuation calculation (Jung (2008) are summarised:

<ol style="list-style-type: none">1. <i>Recruitment-selection costs</i> (costs of advertising, screening, testing, interviewing and entry) (Jung, 2008: p.142-143):2. <i>Training costs</i> (costs of training of an employee with the required experience)3. <i>Costs of lost production</i> (during training and traineeship periods)4. <i>Costs of exit</i>

Table 1

A four-element fluctuation calculation method

Source: Jung, H. (2008): Personalwirtschaft. Oldenburg Verlag, München. pp.123-124.

Important note: in the analysis in Table 1 only *material costs* are taken into account. Non-material and theoretical consequences (e.g., the increased workload on remaining staff due to the decrease in the workforce, the declining morale of

employees and the consequent decline in quality and performance etc.) (Kolb, 2008) are not normally calculated. It should also be borne in mind that loyalty is a very important factor affecting productivity growth (Szostack,- Nalbatian, 2004).

The following four hypotheses were stipulated for examination before the research:

- Labour fluctuation depends on the size of the organisation more than on ownership.
- The fluctuation rate is affected by increased revenue more than by ownership.
- The employee fluctuation rate is lower in public organisations than in private ones.
- The higher the managerial position and the higher employment status is, the employees need to be anxious from losing the job as fluctuation of the personnel is lower in such positions.

2 Empirical Analysis

2.1 Methodology

The objective of our research is to define the relationships that workforce fluctuation may have with increasing number of employees (in other words the size of the organisation), in addition links with turnover growth and also with the form of ownership. Our analysis is based on responses to a questionnaire distributed in 2012 (Poór et al, 2012) which focused a wide range of questions in a survey of labour fluctuation. In this analysis we use exclusively those data from the answers to our questionnaire which refer to the size of the organisation (the number of employees), to turnover, to the form of ownership (private/public or national/foreign) as well as to the fluctuation statistics of companies.

480 questionnaires were distributed to companies, fewer than half of which (207) were returned containing all the necessary information, and so this sample of 207 questionnaires that have valid answers to all questions forms the basis of our analysis.

As for the specification of the sample in the survey, the two most frequent sectors were services and commerce in terms of main activities of examined enterprises.

Less typical sectors were finance, IT, energy and agriculture and in some case the public sector. A bit more than 5% of the correctly returned questionnaires were filled out by micro enterprises employing 0-1 or 2-9 workers. The most dominant size among the companies was the small enterprises employing 10-50 persons. In terms of annual revenue, about 35% of the questioned firms had less than 100 million HUF revenue per year, 24% had between 100 million and 1 billion HUF, 21% of the companies had a revenue between 1 and 10 million HUF, 11% had a revenue between 10 and 100 billion HUF, the rest had a revenue exceeding 100 billion HUF.

Since data collection based on rates and percentages contains approximate calculated values, a new index (a fluctuation index) has been created with a range from 0 (signifying 0% fluctuation) to 4 (which signify fluctuation exceeding 10%).

The indices are compared using tables and graphs that show the rates and directions of the three areas analysed in relation to fluctuation in employee numbers.

2.2 Results of analysis

In the first stage, the relationships between the rate of fluctuation and the size of the surveyed organisations were analysed. Before examining the results, however, it is important to acknowledge some of the limitations deriving from this method of data collection. Firstly, if a company has only one employee, fluctuation cannot be calculated since, in this case the rate of employment is either 0 or 100%, and so companies of this size cannot be categorised in line with the rates included in the questionnaire (1-2%, 2-5%, 5-10% and 10%+). In addition, 5-10% is assessed at the same rate as 1%. Current methodology shows better the rate at which the given organisation is affected by fluctuation since staff fluctuation involving higher numbers of employees produces a lower rate of fluctuation in larger organisations than in smaller.

On a 0-4 scale the companies with the highest fluctuation index were organisations employing 101-250 employees or companies which employed more than 1,000, although they were closely followed by companies employing 251-1,000. In contrast, in the responses from smaller companies, much lower rates could be found. As can be seen in the graph, there is a very close relationship between the rate of fluctuation and the size of a company, and this can be explained by the fact that, the bigger is an organisation, the bigger is its “playground” - which affects Human Resources policy. There may be a substantial difference, despite the equalising impact of the methodology applied, on the rate of difference, which depends on size.

However, the relationship between the rate of fluctuation of the workforce and the size of the organisation only increases significantly if employee numbers are above 50; if they exceed 50, it basically remains the same. Accordingly, if there are fewer than 100 employees, employess are less vulnerable to fluctuation, whilst, if there are more employees, fluctuation is greater but remains relatively stable. If there are more than 50 employees, the level of job security appears to be substantially lower than in more sizable organisations.

Size	Average fluctuation
1-49 employees	1.31
50-249	2.01
250-1,000	2.18
1,000+	2.18
Total	o1.68

Table 2
 Fluctuation index and size of organisation
 Source: Authors' own research

In the second stage of our research, the rate of fluctuation within certain positions is compared with the size of organisation. On the basis of a comparison following the above, applied methodological stages in a more detailed way, the average fluctuation indices of the organisations were taken into account in terms of positions. Next the date was then compared with the size of the company. Fluctuations among senior and middle managers, administrative workers as well as physical workers were analysed during the data analysis process. It should also be noted that, in respect of 0-1 employees, the positional categories examined in the questionnaire cannot be interpreted, as, in such cases, a single person must be the employee.

Therefore, we can come to the conclusion that, the larger an organisation is and the lower the educational level of the employees (the administrative sector, but, most of all, the physical workers) the higher the rate of fluctuation is, – Moreover, the extent might be greater than expected in terms of size alone. This means that the rate of negative correlation between the level of employment and fluctuation is greater than the positive correlation between the increase in the number of employees and the rate of fluctuation.

The fluctuation index of senior managers remains low, irrespective of the size of the organisation, and in this case there is no link between the data. Moreover, and rather interestingly, fluctuation among senior managers was much higher only in companies with 50-249 employees than in larger organisations. Among middle managers the highest fluctuation rate is seen in organisations employing 250-1,000, as, in both smaller and larger companies, middle managers may have greater job security. The results show that the fluctuation rate of physical workers is a great deal higher in larger companies than in smaller organisations, especially in companies employing 1-49 people. One of the possible reasons for this is that physical workers feature as smaller percentages among lower status employees than in small companies, which are more likely to work in specialised service areas.

Size of organisation	Senior Managers	Middle managers	Administrative staff	Physical workers
1-49 employees	1.00	1.31	1.35	1.58
50-249	1.61	1.74	2.02	2.65
250-1,000	1.16	2.29	2.61	2.65
1,000 +	1.50	1.95	2.25	3.00
Total	1.21	1.61	1.77	2.12

Table 3
 Positions, fluctuation index and size of organisation
 Source: Authors' own research

The graphical demonstration of the rate of fluctuation within certain positions also shows that, for organisations employing 0-1 employees, the data examined cannot be assessed realistically. In the graph the Y co-ordinate axis shows the average rate of the fluctuation index, whilst the increase in the size of the companies is demonstrated in groups of four on the X axis. The different colours within the groups of four refer to certain positions according to the size of the organisation.

The table shows that the fluctuation rate increases in every position when the size of the company grows, except for senior managers, and in this case the highest figure can be seen in companies employing a labour-force of 50-249. In respect of larger companies, a dramatic decrease followed by a slight rise may be seen, but this does not exceed the rate in organisations of 50-249 employees.

We can also conclude that physical workers are the most likely to be replaced (or, at least, they are the ones who replaced more often than others), whilst administrative staff are also prone to be replaced. Middle managers had an outstandingly high replacement rate at companies of 250-1,000 employees – somehow counterbalancing the low fluctuation among senior managers. It is interesting that, among administrative staff working for companies with over 1,000 employees, there is a substantial drop in labour fluctuation, which is otherwise high in all other company sizes. At organisations with over 1,000 employees fluctuation among middle managers decreases to an even greater extent, despite the trend of a steady increase in smaller to larger size companies. Consequently, we can also conclude that the numbers and composition of staff is most stable in the largest companies. Accordingly, the numbers and composition seem steadiest in the largest organisations, unless the employees are physical workers. Otherwise, if a company has more than 49 employees (which is true to a much less extent if the number of employees increases) physical workers are more exposed to redundancy, and the highest number of vacancies is also found among physical workers.

In the third stage of our analysis the average fluctuation index data was compared with the annual revenue of the organisation – firstly, in terms of financial turnover and total workforce fluctuation, and then in terms of financial turnover and fluctuation figures. There may not seem to be a strong relationship between higher annual revenue and higher workforce fluctuation when all positions are taken into consideration. This can be explained by the fact that the labour force in a workplace is normally very strongly related to the turnover of the organisation. It has already been shown that the size of an organisation defined by employee numbers and the rate of fluctuation are related. The maximum fluctuation index is reached at companies of 500-1,000 employees, and so the organisations whose employees have the most secure jobs are those employing over 1,000 whilst those with fewer than 500 have even more secure jobs.

In organisations generating less than 100 million forints in annual turnover there is no substantial difference in workforce fluctuation rates. Over this figure and up to 100 billion forints turnover a moderate increase can be seen in fluctuation, although this begins to decline again when a company turns over more than 100 billion forints.

When interpreting the results it should be taken into account that higher fluctuation figures in larger companies – due to the different rates-percentages in data collection – mean less impact than in organisations with a lower turnover (which presumably results in the employment of fewer workers). Then, also, for the above reasons, fluctuation starts to plummet dramatically in companies turning over 100 billion forints and where the statistics still show the highest rate of labour fluctuation.

Below the 1 billion forints annual revenue threshold there is very little connection between workforce fluctuation and any rise in financial turnover, although we can conclude that employees of companies with an annual revenue of 10-100 billion forints are the most affected.

Revenue	Fluctuation
0-100 million forints	1.39
100 million - 1 billion forints	1.75
1-10 billion	2.00
10-100 billion	2.17
Over 100 billion	2.06
Total	1.75

Table 4

Fluctuation index and revenue
Source: Authors' own research

In the fourth stage, and in addition to the increase in annual revenue, the average employment fluctuation rate for different positions was taken into account and not only the average figures relating to total employment, as in the third stage. Analysing the findings we can come to the conclusion that in organisations with less than 100 billion forints revenue, the labour fluctuation rate increases in all positions accordingly to the revenue growth. In the top category (over 100 billion forints turnover) the rate of fluctuation is higher in every category than in the

previous category, except in respect of senior managers. In this case it is much lower than in companies with 1-100 billion forints annual revenue.

Except for organisations with an annual turnover of 10 million forints, it is mostly physical workers who are exposed to workforce fluctuation – and the rate increases with an increase in turnover. Administrative staff is next in line, and there is a steady rise in employment fluctuation in relation to growth in annual turnover, no matter how high the revenue might be. Middle managers, who always have a moderately lower fluctuation index than administrative staff, are less exposed to fluctuation in organisations with 100 billion forints turnover than in companies with less than 100 billion forints annual revenue.

Revenue	Senior managers	Middle managers	Administrative	Physical
0 - 100 million forints	1.26	1.36	1.53	1.41
100m - 1 billion forints	1.33	1.69	1.57	2.39
1-10 billion forints	1.51	1.78	2.18	2.53
10-100 billion forints	1.78	2.13	2.26	2.70
Over 100 billion forints	1.35	2.06	2.41	2.71
Total	1.40	1.67	1.83	2.13

Table 5

Fluctuation index for different positions related to turnover
Source: Authors' own research

In general we can conclude that fluctuation among senior managers is rather low irrespective of the level of annual revenue. Physical workers have a low fluctuation rate in smaller companies, which increases substantially when revenues grow, and as a result they are the most likely to be vulnerable due to labour fluctuation and to the greatest extent among all the categories. The workforce fluctuation of administrative staff and middle managers is much steadier and rises more moderately when companies increase their revenue. The fluctuation index is the highest among senior and middle managers in companies with the annual revenue of 10-100 billion forints, which alludes to the fact that the competition is the fiercest here in the labour market. When fluctuation indices for

different positions are shown by graphs, it can be clearly seen that there is a very direct and strong connection between positions and employee fluctuation, since the average height of bar graphs shown in four groups is continuously and steadily growing as we proceed towards positions of lower rank. The rate of growth rises rapidly when approaching the lower positions.

In organisations which generate less than 100 million forints revenue there is a relatively lower chance of being vulnerable, but the risk grows rapidly from the 100 million forint point, especially for physical workers. Physical workers may feel most secure in companies with turnover below 10 million forints whilst middle managers may regard their positions as safest in companies with an annual turnover of 10-100 million forints. Both senior and middle managers are less exposed to the risk of being expelled due to labour fluctuation in organisations with an annual turnover of less than 100 billion forints rather than in corporations generating higher revenue. Administrative workers employed by organisations generating 1-10 billion forints annually appear to have the lowest rate of increase.

In the fifth stage of our analysis the ownership of organisations is compared with others based on the average fluctuation index rates. The methodology is the same as in previous cases, as every form of ownership and fluctuation index falls into a category, and the figures in these categories are referred to. The maximum value is 4, which means labour fluctuation exceeding 10%.

The questionnaire formerly used as an input database had categories for national public, national private, foreign ownership and business organisations owned by other kinds of proprietor. When the owner is a foreigner, the property is presumably private property in all cases, although a national company can be either publicly or privately owned.

The highest rate of fluctuation can be found in national public organisations, while the lowest rate can be seen in native private organisations. The fluctuation indices of corporations owned by foreigners or other proprietors are approximately the same as the average fluctuation index of national public and national private organisations.

At the same time our readers need to be reminded of the question which was raised in the questionnaire about the extent of fluctuation: “What was the employee fluctuation rate in 2011 in your company?” One of the important features of the economic crisis that rocked the world in 2007 and which, unfortunately, still remains with us are redundancy among civil servants.

The outstandingly high employment fluctuation rate in national public organisations is due to the high percentage of job reduction in the public sector in

the past few years, and consequently long-term conclusions can only be drawn from these statistics with a degree of reservation.

Ownership	Fluctuation
National public	2.47
National private	1.51
Foreign	2.01
Others	2.18
Total	1.78

Table 6

Fluctuation index and ownership
Source: Authors' own research

In the sixth stage we examine even more thoroughly by expanding our research to the changes in fluctuation in the various positions and how different forms of ownership may relate to workforce fluctuation. Similarly to the previous two cases, the average fluctuation index was also calculated in relation to senior and middle managers, administrative staff as well as physical workers. The theoretical minimum of the fluctuation index is 0, which means 0% fluctuation, whilst 4 is the maximum value, which refers to a fluctuation rate higher than 10%.

As with earlier cases, it is also evident that, the lower the position one has, the higher the may be workforce fluctuation in this position. However, it can also be seen that fluctuation rate is a great deal less dependent on ownership than on the size of the organisation or the level of annual revenue. Finally, it is also clear that the rate of "hiring and firing" is only marginally dependent on ownership: it is lowest in native private companies and only slightly higher in national public organisations or foreign companies.

A connection between employers and the fluctuation rate index can be observed in business organisations in foreign ownership. It can be seen most clearly in these cases that the higher position of an employee (e.g., a top management post), the less is he or she threatened by possible labour fluctuation. As for the fluctuation index, it is especially low in senior managerial positions in foreign companies; it is in a midway position in respect of middle managers and administrative works and has the highest rate among physical workers.

Based on the results we can conclude that the most secure positions are offered to employees by national private companies. Especially Hungarian top managers can regard their positions as the most stable, as there is such slim competition for jobs in that segment of the labour market.

Ownership	Senior managers	Middle managers	Administrative	Physical
National public p	2.33	2.22	2.67	2.67
National private	1.17	1.40	1.55	1.92
Foreign	1.49	1.88	2.14	2.54
Others	2.33	2.33	2.50	2.00
Total	1.41	1.66	1.87	2.19

Table 7
 Fluctuation index of positions and ownership
 Source: Authors' own research

In the graph indicating ownership in relation to workforce fluctuation, typical of certain positions on the Y co-ordinate axis, the fluctuation index with the maximum value of 4 can be seen, whilst on the X co-ordinate axis the positions in four groups are shown according to ownership. In the table it can be seen that only national public organisations have a fluctuation index over 2 in every position, which means 2-5% fluctuation. We can also conclude that senior managers in Hungarian private companies have the most secure positions, although even physical workers in Hungarian companies have no reason to complain if they are compared with physical workers in the same positions in companies of other forms of ownership.

Middle managers seem to be in the steadiest positions in Hungarian public organisations and they may feel even more secure than top managers, although they may find the longest term career opportunities in Hungarian private companies.

In private organisations – whether foreign- or Hungarian– it is more typical that the lower positions are most in jeopardy when expelling someone is in question, and top managerial jobs are the safest. Based on the data of our analysis, public

national companies appear to be the most democratic. In their case there is a substantial, but smaller, gap between the level of middle management and other levels, whilst in private companies there is a greater difference between each level of employment.

Summary and conclusions

Previous hypotheses are confirmed or disproved by the analytical data and the conclusions drawn from our research findings.

Labour fluctuation depends on the size of the organisation more than on ownership.

The hypothesis has been proved by the statistical figures. There is a moderately strong connection between size and workforce fluctuation since fluctuation increases with size (even if not evenly), whilst there is little or no connection between fluctuation and ownership. Differences in labour fluctuation, both in organisations in national private and foreign ownership, lag far behind the differences when fluctuation is related to company size.

The fluctuation rate is affected by increased revenue more than by ownership.

In general, workforce turnover increases more if an organisation generates more revenue (except in cases over 100 billion forints, where it starts to decline) than when ownership is involved and this is irrespective of ownership, whether foreign/national or private/public. Organisations owned by foreign proprietors have a higher employee fluctuation rate than national equivalents.

The thesis has been verified by the analysed data: in every position there is a greater likelihood that the employee will lose the job in a foreign firm than in a national company.

The employee fluctuation rate is lower in public organisations than in private companies.

Despite the common belief that public organisations offer more secure jobs, the result of our analysis rather proves the opposite, and so the hypothesis cannot be proved by these research findings. An employee in a public organisation is more likely to be expelled than in a private company. Nevertheless, the fluctuation rate

among middle- and senior management, administrative and physical workers is much lower in private companies.

The higher the managerial position and the higher the employment status is, the less the employees need to be anxious from being expelled as fluctuation of the personnel is lower in such positions.

This hypothesis is partly verified by the analytical data, although there are both differences in rates and also some exceptions. For example, in the public sector there is a huge gap in the fluctuation index data at middle management level, whilst this increases evenly in private companies with the level of employment, as there is a quite substantial difference between senior and middle managers (the latter with a much higher rate). On the other hand, organisations with over 100 billion forints in turnover and employing more than 1,000 have a much lower employee fluctuation index, which rises steadily before that level is reached, as if the market were not as strong as usual in this instance.

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