Investigating personnel dynamics within SMEs: A survey analysis for the case of Romania

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Abstract. Recently and especially within emerging economies such as Romania, most of the uncertainties and risks of the economic and business environment stem mainly from the changes in the wage and fiscal policies, as well as from the conditions on the labour market. In this paper we focus on the main causes of personnel dynamics within the Romanian SMEs, using survey data on 1200 companies. The survey was conducted at the end of 2019 and is representative at national level in terms of size, regions and main fields of activity. Through this survey analysis we investigate aspects related to both wage and personnel policy for the Romanian companies, looking as the proportion of temporary employees, the types of non-wage incentives offered by the Romanian SMEs to their employees and the participation of their own employees in vocational training programs. Among the most frequently offered non-wage incentives to their employees we identify: flexible work schedule, subscriptions to medical clinics, meal vouchers or transportation to work. To a much lower extent, however, they may offer subscriptions to gyms or even company shares. Our findings highlight the following main determinants of recent personnel fluctuations: lower wage attractiveness than competition, too high labour taxation, as well as limited attractiveness of non-wage incentives to their employees. Moreover, it is relevant to also point out the proportion of employees who decided to leave their job in order to start their own business, which represented about 26% of the cases reported by the surveyed SMEs.
The regional analysis of the effects of these factors on personnel dynamics ranks the Bucharest-Ilfov region first with the most notable recent personnel fluctuations, followed by the North-West region. In addition, the results also show that the effects of personnel fluctuations are more visible in urban areas as compared to the rural area.

**Keywords:** personnel dynamics, wages, regional analysis, economic sectors, survey analysis.

**JEL Classification:** M51, M12.
1. Introduction

Europe’s 25 million small and medium enterprises (SMEs) represent a force of the EU economy. SMEs accounted for 99.8% of all enterprises in the EU-28 non-financial business sector in 2018, generating almost 67% of employment in the non-financial business sector (30% the micro enterprises, 20% the small enterprises and 17% medium-sized enterprises). With the indirect impact of their profits and wages, European SMEs are a fundamental pillar of the European welfare states (European Commission, 2019).

Some of the important challenges facing SMEs are considered the attraction, motivation, development and retention of employees, while human resource practices are recognised as important contributors to the success of SMEs (Krishnan and Scullion, 2017). Management of human capital is not only about attracting and attaining employees, but also related to giving the employees a chance to develop as that will increase the corporate knowledge base, both for the individuals and for the company (Kyndt and Baert, 2013).

The economic crisis in 2008-2009 has affected majority of the economies in the EU, to varying degrees. The impact on SMEs has been mixed (Broughton, 2011), and dependent for example on the sector in which they operate: there are countries where the SME sector has expanded (like Germany, the Netherlands, Belgium and Estonia), or it remained constant (Spain). In Bulgaria, there are trends towards both an increase and a decrease in the number of SMEs, depending on the sector. And there are other countries in which the SMEs were badly affected. One possible reason for the different responses to the crisis of the SME sector may come from a different capacity to absorb laid-off workers. Understanding this may be helpful for the national policies targeting employment in general and support of the SMEs in particular.

Recently and especially within emerging economies such as Romania, most of the uncertainties and risks of the economic and business environment stem mainly from the changes in the wage and fiscal policies, as well as from the conditions on the labour market. And since the SMEs are the backbone of every economy, in this paper we focus on the main causes of personnel dynamics within the Romanian SMEs. We are using survey data on 1200 companies, investigating aspects related to both wage and personnel policy for the Romanian companies, looking at the proportion of temporary employees, the types of non-wage incentives offered by the Romanian SMEs to their employees and the participation of their own employees in vocational training programs.

2. Literature review

There are several papers that addressed short-term firms’ expectations on the labour market. A very recent study, the CNBC and Survey Monkey investigation regarding the expectations of small firms on the labour market, collected responses from over 2000 small business managers. The purpose of the survey was to measure both the vitality of the US economy and their perspective on jobs, taxes and other topics of interest. In addition to measuring the confidence of small businesses at the national level, the large sample size
makes it possible for CNBC to discover trends depending on the geographical region and certain small business cohorts.

The key results of the CNBC questionnaire applied in the second quarter of 2019 refer to employment, incomes and general expectations of small companies. One of the results is that 60% of small business managers expected a revenue growth in the second quarter of 2019, compared with 57% in the first quarter of 2019. In addition, 31% expected an increase in the number of full-time employees, compared to only 28% in the first quarter of 2019. At the same time, the general confidence index is tempered by the diminishing positive impact of changes in fiscal policies. Only 28% of small business owners expect fiscal policy changes to have a positive effect on their business over the next 12 months, compared to 31% in the first quarter and 44% in the second quarter of 2018. Moreover, 52% of small business managers said that it is more difficult to find qualified individuals in the present (Q2 2019), compared to the previous year. In the case of companies with more than 50 employees, 63% of the owners find it more difficult to find qualified employees. In addition, 44% of companies with more than 50 employees anticipate that, over the next year, the cost of labour will increase faster than the cost of raw materials or the cost of capital. This indicates that companies anticipate that the increase in wages will result in filling the vacant positions.

A Czech survey of small and medium enterprises in South Bohemia region (Holátová and Březinová, 2018) revealed also some interesting results:

- The number of employees that left the company in 2012 was most often measured by medium-sized companies (75.3%), followed by small enterprises (70.5%), with micro-companies ranking lowest.
- Most companies interviewed (39.9%) had a personnel fluctuation rate higher than 10%. 23.0% of the companies declared zero employee fluctuation, while the companies with a fluctuation rate of 5–10% accounted for 22.4%.
- The benefits most frequently reported by employees of SMEs included “catering” (highly out-ranked all other mentioned categories) and the “pension schemes”. Respondents further mentioned various types of bonuses which may be said to represent a material (financial) stimulator. Other also relatively frequently mentioned benefits included “paid leave”, “sports and culture”, “education”.

The study of the National Bank of Romania (2016) analysed the factors under which the economic growth in Romania re-started during the post-crisis period but was not accompanied by a similar boosting of the labour market. The analysis starts from a data set obtained at microeconomic level, following the implementation in 2014 of the first labour market survey by the National Bank of Romania in cooperation with the Wage Dynamics Network (WDN – a research network of the European System of Central Banks).

The questionnaire was constructed in a manner that allows the evaluation of the way the labour market in Romania was adjusted during 2010-2013. Moreover was targeted the evaluation of the impact of the reforms implemented in 2011 on the activity of the companies. The questionnaire included a group of questions regarding the source of the shocks that induced the crisis at European level and the strategy that the companies adopted to deal with these shocks, in terms of adjusting the size and structure of the workforce,
respectively of the salary policy. Another section was dedicated to the minimum wage policy for the Romanian economy: the share of employees paid with the minimum wage, as well as those on a higher level, which would benefit from an increase in the case of raising the minimum wage. The survey was addressed to non-financial companies, established before 2010, which are active in Industry, Construction, Trade and Market Services. A simple random stratified survey was chosen, the layers of which were defined according to the main field of activity and the size of the company, the latter being determined according to the average number of employees. The sample comprised approximately 2300 companies, covering one third of the private sector personnel in 2013 and had a response rate of 88%.

The economic environment was characterized during the period targeted by the survey by moderate fluctuations of the demand. The companies showed a relatively high reluctance to reduce the salaries (nominal and real) of the existing employees, an attitude that later conducted to an increase the probability of the company to lay off some of the employees or limited the creation of new jobs (based on the estimation of several probit models).

Although the companies did not identify any significant shocks in the 2010-2013 period, most of them complained about the increase in labour costs, a trend that probably continued after 2013 in the context of multiple increases in the gross minimum wage. The strategies adopted by the companies in order to reduce these costs aimed mainly at adjusting the labour factor, both along the intensive and extensive margin. Similar to the empirical evidence provided by previous WDN surveys, the downward rigidity of wages is best explained by the theory of the influence of wage adjustments on labour productivity (efficiency wage theory) and that of implicit and explicit contracts.

In the early recovery period of the business cycle, the results of the study indicate a more pronounced pro-cyclicality in establishing the salaries of the new employees. Apart from the presence of wage rigidities, other frictions on the labour market that have complicated the job search process can be associated with the perception of a high level of labour taxation, the policy of the minimum wage, the structural changes of the economy, but also the growth in the mismatch between the training of candidates and the demands of employers. Although some measures have been taken in the direction of making the labour market more flexible, the companies have perceived a modest influence from the reforms. The study highlights some positive effects of the reforms (the possibility of reducing the work program for economic reasons and improving the framework for the use of temporary and fixed-term employment contracts).

Another survey, at European level this time, conducted during the final quarter of 2010 revealed some interesting facts (de Kok et al., 2011):

- Although 24% of SMEs showed an increase in employment, while 48% mentioned no change, a larger share of enterprises (28%) showed a decline of employment levels during 2010.
- Around 17% of the small and medium sized enterprises lay off employees during 2009Q4-2010Q4. At the opposite end, 70% of the SMEs declared that they hired employees during 2009Q4-2010Q4 (31% solely for replacements, 18% solely for newly created jobs and 21% both replacements and newly created jobs).
• By the end of 2010, the majority of the entrepreneurs seemed to be slightly optimistic about the future: only around 11-12% of the entrepreneurs expected layoffs due to the crisis in the next 12 months (namely 2011).
• In general, employees in SMEs tend to receive lower wage levels than in large enterprises, with 4 possible explanations: labour productivity increases with firm size; larger firms have more financial resources; SMEs can better monitor individual employees, whereas large enterprises pay a premium to avoid shirking, family owned and managed enterprises pay less and are relatively often SMEs. In addition, job satisfaction is higher in SMEs.

3. Data and research methodology
In order to analyse the causes of personnel dynamics within the SMEs we designed a survey to be applied on Romanian companies. The survey was conducted at the end of 2019 and is representative at national level in terms of size, regions and main fields of activity. The sampling method had a standard error of ± 3.02% and a confidence level of 95%. It was decided to use a stratified sample, since they respect the population structure from which they are extracted, are therefore considered to be more robust and lead to an even smaller sampling error than that calculated for the simple random samples. The stratification criteria considered were: the size class of the company (under 9 employees; between 10-49 employees; between 50-249 employees; over 250 employees), the county / development region, the main economic activity of the company (NACE Rev.2) and the turnover level. The total volume obtained was of 1200 valid questionnaires.

The research instrument consisted of a structured questionnaire and the interviews were conducted through a mix of methods: CAWI combined with face-to-face and CATI.

The database obtained through the survey was next processed in SPSS and STATA. The primary analysis consisted in descriptive statistics and cross-tabulation, while for the econometric analysis we considered to be appropriate a logistic model.

Agresti (2010) defines the logit model as a single-period classification model for which estimates are based on a maximum likelihood function in order to determine the conditional probability of an individual belonging to a category based on the independent variables. The logit model describes the relationship between a binary variable Y (takes the values 1 or 0) and n explanatory variables x₁, x₂, ..., xₙ. Starting from a linear probability model described by

\[ Pr(y = 1|x) = x \beta + \varepsilon, \]

if we restrict the probabilities to be in the [0,1] range, the following model is obtained:

\[ \Omega(x) = \frac{Pr(y = 1|x)}{Pr(y = 0|x)} = \frac{Pr(y = 1|x)}{1 - Pr(y = 1|x)}. \]

In order to obtain the logit model we apply logarithms to these probabilities and obtain the following relation:

\[ ln\Omega(x) = \beta_0 + \sum_{j=1}^{n} \beta_j x_{i,j}. \]

This latter equation is the logit form of the model, where \( ln\Omega(x) \) is the logarithm of the probability for an individual to be part of one category or another in relation to the explanatory variables \( x_{i,1}, x_{i,2}, ..., x_{i,k} \).
4. Main findings

The most frequently offered non-wage incentive to their employees was identified to be a flexible work schedule, 49% of the respondents choosing this option for their firms. This incentive is offered more often in the micro (48.9%) and small (56%) enterprises than in the medium ones (33.9%).

Other non-wage incentive offered to the employees turned out to be the subscriptions to medical clinics (39%), meal vouchers (32%) or transportation to work (26%). The incentive “subscription to medical clinics” is offered in more than half of the small firms (56.5%), compared to 48.2% in the medium firms and 38% in the micro firms. Meal vouchers is significantly more present as incentive in the medium firms (80.4%) and in the small ones (63.4%), compared to only 27.1% in the case of micro firms. Also, the incentive “transportation to work” is offered more in the small (41.4%) and medium (46.4%) enterprises than in the micro ones (23.2%).

To a much lower extent, firms may offer subscriptions to gyms (2%) or even company shares (5%).

![Bar chart showing the distribution of non-wage incentives among SMEs](image)

Source: authors’ calculations based on data collected in the survey.

When questioned about the main determinant of recent personnel fluctuations almost two thirds of the respondents (60%) mentioned the lower wage attractiveness than competition. This cause for personnel fluctuation appears to be a greater impediment in the medium-sized companies than in the smaller ones. Also, too high labour taxation was considered as a determinant of personnel fluctuation for 43% of the firms. In this case, too high labour taxation was more often seen as a problem for the small enterprises than for the micro and the medium ones.
A third of the respondents declared that the limited attractiveness of non-wage incentives to their employees was a cause of personnel fluctuation, as well as unfulfillment of the job tasks. The limited attractiveness of non-wage incentives to their employees is more of an inconvenience for the medium enterprises, while the unfulfillment of the job tasks appears to be more problematic for the micro firms.

It is relevant to also point out the proportion of employees who decided to leave their job in order to start their own business, which represented about 26% of the cases reported by the surveyed SMEs.

The regional level analysis revealed some interesting information. First, the major problem when speaking of personnel fluctuation appears to be the lower wage attractiveness than competition in all regions, with very low fluctuation (the percentage is as high as 62% in Bucharest-Ilfov region and West region, while the lowest value is around 55% in North-East and North-West regions).

The second main determinant varies among regions:
- In Bucharest-Ilfov and West regions the limited attractiveness of non-wage incentives to their employees was the second cause for their personnel fluctuation (41.6%, respectively 47.7%).
- In Centre, North-East, North-West and South-West the second factor causing personnel fluctuation appears to be the too high taxation of labour (47.9%, 40%, 48%, 47.6% respectively).
- In South and South-East regions the unfulfillment of job tasks was the second cause for personnel fluctuation (46.1% respectively 44.7% of respondents in these regions chose this cause).
The results also show that the effects of personnel fluctuations are more visible in urban areas as compared to the rural area. Each determinant considered in the questionnaire for the recent personnel fluctuation it is mentioned by at least 82% of the SMEs in urban areas. The results are as expected, since the personnel fluctuation is expected to be more visible in urban areas, where there are many more options to find a new job.

Regarding the structure of their employees, 22% of the surveyed SMEs have reported the percentage of their temporary employees. More than half of them (57%) declared that the temporary employees account for 15-30% of total employees. Another 20% say that some 30% to 50% of their employees have temporary contracts, while 23% report less than 15% temporary contracts in their firms.

As for the participation of the employees at different vocational training courses, other than those imposed by law, the situation is presented in Figure 5. 18% of the SMEs participating at the questionnaire declared that more than 50% of their employees have participated in
vocational training courses in 2018. Another 14% of the respondents said that 30-50% of their employees participated in 2018 in different vocational training course, other than those imposed by law. The proportion of the firms declaring smaller percentages for the participation in vocational training of their employees is under 10% (8% for a participation rate of 15-30%, respectively 2% for a participation rate under 15%). It is worth mentioning that more than half of the SMEs included in the analysis didn’t respond to this question.

**Figure 5. Participation in vocational training in 2018, other than imposed by law**

![Participation in vocational training in 2018, other than imposed by law](chart)

Source: authors' calculations based on data collected in the survey.

**Figure 6. Regional distribution of participation in vocational training in 2018 (other than imposed by law)**

![Regional distribution of participation in vocational training in 2018](chart)

Source: authors' calculations based on data collected in the survey.

At regional level the following representation was obtained:

- More than 50% of the employees have participated in vocational training courses in 2018 in majority of the firms in Bucharest-Ilfov, North-East, North-West, South-East, South-West and West.
- In the Centre region the majority of the firms declared that 30-50% of their employees participated in vocational training in 2018.
In the South region, the same percentage declared that over 50%, respectively 15-30% of their employees participated in vocational training in 2018.

As can be noticed in Figure 7, one in four small firms (28%) declared that 15% to 30% of their employees participated in 2018 at different vocational training, other than those imposed by law. For the medium-sized enterprises resulted that 21% of them place themselves in the category with less than 15% of their employees participating in vocational training, and the same percentage (21%) place themselves in the category with 30-50% employees participating in vocational training in 2018. One in five micro enterprises (22%) declared that over 50% of their employees participated in 2018 in vocational training, a percentage much bigger than the one registered by the other 2 firm-classes.

**Figure 7. Participation in vocational training in 2018 (other than imposed by law) by firm size**

Furthermore we investigated which are the firms more likely to face personnel fluctuation through an econometric model. Our dependent variable is a binary variable that takes value 1 if the firm experienced a drop in the number of employees in 2018 as compared to 2017 and 0 if not (personnel_drop). As mentioned before, taking into account the dependent variable as a binary one, we turned to a logistic econometric model.

The independent variables in our model are all binary variables, as following:

- **training15_30** → firms with 15-30% employees participating in vocational training: takes value 1 if the firm is in this category and 0 if not.
- **training50+** → firms with over 50% employees participating in vocational training: takes value 1 if the firm is in this category and 0 if not.
- **Q1_TO_17** → firms with the turnover obtained in 2017 in the first quartile: takes value 1 if the firm is in this category and 0 if not.
- **Q2_TO_17** → firms with the turnover obtained in 2017 in the second quartile: takes value 1 if the firm is in this category and 0 if not.
- **Q3_TO_17** → firms with the turnover obtained in 2017 in the third quartile: takes value 1 if the firm is in this category and 0 if not.
- \( Q1\text{\_Profit\_17} \rightarrow \) firms with the profit obtained in 2017 in the first quartile: takes value 1 if the firm is in this category and 0 if not.
- \( Q2\text{\_Profit\_17} \rightarrow \) firms with the profit obtained in 2017 in the second quartile: takes value 1 if the firm is in this category and 0 if not.
- \( Q3\text{\_Profit\_17} \rightarrow \) firms with the profit obtained in 2017 in the third quartile: takes value 1 if the firm is in this category and 0 if not.
- \( trade \rightarrow \) takes value 1 if the firm activates in the trade sector, and 0 if not.

The estimation of the logit model provided the following results:

### Table 1. Results of the logit model

| Dependent variable: personnel drop | Coef.  | Std. Err. | z     | P>|z|  |
|-----------------------------------|--------|-----------|-------|------|
| training15\_30                    | -0.61  | 0.288107  | -2.13 | 0.033|
| training50+                       | -4.31  | 0.797956  | -5.46 | 0.015|
| Q1\_TO\_17                        | -1.57  | 0.240318  | -6.68 | 0    |
| Q2\_TO\_17                        | -0.98  | 0.235359  | -4.37 | 0    |
| Q3\_TO\_17                        | -0.40  | 0.188038  | -2.02 | 0.044|
| Q1\_Profit\_17                    | 1.24   | 0.233647  | 5.29  | 0    |
| Q2\_Profit\_17                    | 0.50   | 0.234009  | 2.12  | 0.034|
| Q3\_Profit\_17                    | 0.40   | 0.215339  | 1.85  | 0.064|
| trade                             | -0.28  | 0.158097  | -1.74 | 0.082|
| _cons                             | -0.86  | 0.165619  | -5.16 | 0    |

Source: authors' calculations using STATA, based on data collected in the survey.

These results show that the reduction of personnel is less likely to happen in those firms that offer or facilitate access to training programs (other than those required by law) to their employees. The result is not surprising, since the training programs are an important way for the personnel in SMEs to grow and improve their skills.

In terms of turnover, it seems that the reduction of personnel is more visible in firms with high turnover (the fourth quartile), than in the firms belonging to the first quartiles. This may be explained through the fact that usually, the more employees in the firm, the bigger the turnover and the personnel drop was more present among medium firms than in the micro ones. As for the profit, our results indicate that the lower the profit, the higher the probability of losing employees. Since a drop in the firm’s profit might normally be associated with lower business performances, then fluctuations of personnel are to be expected under such circumstances and especially in economic sectors with more notable changes in the goods and services demand dynamics. Our empirical analysis has shown that, for instance, the reduction of personnel is less likely to happen in those firms that activate in the Trade sector as compared to other sectors, as it is a more stable business sector.

### 5. Conclusions

The small and medium enterprises (SMEs) in the EU represent a force of the economy. Among the challenges that SMEs have to face daily, the attraction, motivation, development and retention of employees are some of the important ones. A key to success
in every company, aside from attracting and attaining employees, is also giving the employees a chance to develop as that will increase the knowledge base, both for the individuals and for the company. Having that picture in mind, the paper focused on the main causes of personnel dynamics within the Romanian SMEs. For that we designed a questionnaire and obtained survey data on 1200 companies.

Our primary analysis indicated that the most frequently offered non-wage incentive to their employees is a flexible work schedule (49%), followed by the subscriptions to medical clinics (39%), meal vouchers (32%) or transportation to work (26%). The main determinants of recent personnel fluctuations resulted to be the lower wage attractiveness than competition (60%) and too high labour taxation (43%). In this regard it is relevant to point out the fact that 26% of the SMEs reported as a cause for personnel loss the decision of those employees that resigned to start their own business. This situation occurred more in the micro and small firms, than in the medium ones. Another interesting fact is that only 18% of the SMEs participating in the survey declared that more than 50% of their employees have participated in vocational training courses in 2018, but if looking more into the data, we can see that a larger proportion of the micro firms are found in this position, as compared to the small and medium ones.

The primary analysis was extended with an econometric model, for us to investigate which are the firms more likely to face personnel fluctuation. The results indicated that the reduction of personnel in the Romanian SMEs are more visible in SMEs with higher turnover, but lower level of profit and less visible in the SMEs offering access to training programs or activating in the Trade sector.

In the future, the analysis may be enriched with other econometric models in order to investigate other aspects in the SMEs activity and even a new wave of the survey to capture the new reality we are in, since the firms around the globe faces difficulties in surviving as a result of the pandemic.

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**References**


