

THE EFFECTS OF EMPLOYEES' TRAINING UPON LABOUR PRODUCTIVITY IN THE COMPANIES IN DOLJ AND VÂLCEA COUNTIES IN ROMANIA

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Abstract

The aim of this article was to provide empirical evidence which to support the unanimously accepted idea in the literature dedicated to human resources study, i.e. there is a direct connection between the intensity of training in organizations and the productivity of human resources. In the absence of statistical data about the training in local companies, we collected primary data from a balanced sample of companies in South-West Oltenia region in Romania, following the administration of a complex-structured questionnaire (sent out between March and June 2015). The data obtained covers the period 2012-2014 and confirms the proposed hypothesis, as follows: 1) the analyzed companies which invested in human resources training had a higher productivity compared to those which did not invest at all in this direction; 2) there is a direct correlation between the number of training hours delivered every year by a company and the employees' further performance, determined both through objective and perception measurements.

Keywords: productivity, continuous training, objective measurements, perception measurements.

Classifications JEL: M53, M 54, O 15

Introduction and context of the study

Taking into account the new learning approach used in organizations, in the context of the knowledge-based society, global organizations continue to invest important amounts in training and development, so, both in the business and scientific environments, there is an increased tendency to prove that these investments are justified and deliver increased performance within organizations. The technical literature of the last decade is rich in research papers which measure the value of human capital (Fitz-enz, 2009), the return of investment in training (ROI, Phillips and Stone, 2002) or more specific, studies which focus on the relationship between training (through perception measurements, contents or objective measurements) and the employees' performance or the economic performance of the organization (Zwick, 2006; Saks and Burke, 2012, 2014; Tharenou et al., 2007; Ebeda-Garcia et al., 2013).

These research papers analyze and interpret statistical and primary data obtained through empirical research, following the evolution of the training investment over many years, together with the results registered by trainees (at the level of quality, quantity, work output or attitude). The results lead to the unanimously accepted idea that training generates productivity increase, but the amount of this growth is different, according to the chosen sample, content/design of training or period of time when the evaluation is carried out. Productivity growth may also vary due to other factors such as the organizational climate which may either favour or not the learning transfer or trainees' characteristics; for instance, Thomas Zwick's study (2006) demonstrated the effects on productivity of the training delivered in the first half of 1997 in German organizations analyzed in the sample between 1998-2001, on the basis of some continuous data, obtained from a national agency. Briefly, the author discovered those companies which increased the number of trainees in 1997 by 1 per cent succeeded in increasing the productivity in 1998-2001 by more than 0.76%. A significantly lower number of research papers found that there is no correlation or there is a weak correlation between training and performance. The Romanian technical literature does not meet the same frequency of the mentioned theme, one of the possible explanations being the lack of updated data on Continuous Vocational Training (e.g. national data about the intensity of training in companies is available only until the end of 2013). Similarly, discontinuity in statistical data on CVT in enterprises represents an issue at the macro level, in the context of Copenhagen process (enhanced European cooperation in vocational education and training) and Strategy Europe 2020; this problem was also detected by the Council of the European Union: in November 2010 the representatives in The Council appealed the factors interested in the member states in order to collect and transmit reliable data on VET and make these available for Eurostat, for further analysis [7].

Beyond this motivation, the articles and studies are limited to qualitative research, literature revisions or the most research papers based on measuring scales of perception, subjective, but their number is very small (Sanchez et. al., 2011; Bercu, 2013; Demyen and Popa, 2014); we do not ignore the merits of these studies, which put the subject in the current legislative framework, but the results present a high general level, without making clearly notifications related to direct relationship between training and performance of human resources or global company performance. Conclusions which to meet the objective in the title are not issued either, that is why there is no basis for management decisions in the local companies.

In this context, the current scientific demeanour (about the empirical research included in the article) is highly important in the targeted field, having some practical involvements, through the discovery of a direct correlation between training and productivity, training and the perception upon the individual performance and formulation of a set of recommendations and conclusions suitable for local companies.

Methodology

The assumptions of this research are:

- 1) Hypothesis 1: The companies which periodically organize training programmes for the employees get better productivity than those which do not invest in training.
- 2) Hypothesis 2: There is a moderated correlation between the intensity of the number of classes organized yearly at the level of a company and the impact upon performance, as it is seen by employers and objectively calculated.

The sample is formed by 25 companies in the region (in two counties of the region, Dolj and Vâlcea), most of them activating in the field of services (20 companies in the fields of trading, IT, research, tourism, labour force services, management consulting, expertise and audit services etc.), and the rest of companies in the field of production (production of equipment, manufacture of metallic constructions) or energetic area. The selection of services is justified by the fact that, in services, it is well-known and the human factor is more relevant than in production, for example, the strategy of investment in human resources must be approached as a priority of management.

Among the methods used to validate the assumptions made, we enumerate: the distribution of a questionnaire to the employees in the sample, and semi-structured interviews with decisional factors in 8 SMEs (in order to validate the results obtained after questionnaires were returned).

In our research, the measurement of training was made via three methods, which mutually validate:

- Objective and proportional measurements, namely: the number of training hours provided in a calendar year/employee; number of hours done as certificated training, etc.;
- Measurements of performance perception- both employers' and employees' perception (examples of items: the perception upon the impact of training upon productivity, in 2012/2013/2014; the adjustment of some items in Delaney and Huselid's scale, 1996, etc);
- Objective measurements of employees' performance (P), rendered through labour productivity (which is the most used method to show the performance of human resources in economic terms).

We expect the results to be more favourable after the perception measurements than the objective ones (in the same way as in the complex study done by Tharenou in 2007, who investigated the relationship between training-expressed under different measurements and the performance of the organization).

Taking into account the heterogeneity of SMEs, (from companies with 2 employees to companies having 250 employees, in different areas, mostly in services), we consider that the following method is the most appropriate in order to calculate productivity and it is applied to all SMEs analyzed:

$$P = \frac{\text{annual turnover}}{\text{headcount}}$$

The questionnaire we designed is structured on four sections, each with almost the same number of questions. The third section represents the basis for the data collection for the current article that is why only this one will be detailed as a method below. The items in this section contain the perception measurements of performance- both in employers' and employees' perceptions, and content measurements (proper training methods, the most efficient methods, etc). Through the questions in this section, we will investigate both the perception of the organizational performance, and the perception of the human resources performances (these ones being strongly connected), in terms of real results (increase of products/services quality, decrease of clients' complaints, decrease of labour accidents, decrease of consumption of raw materials), but also intangible results (increase of labour satisfaction). Furthermore, the section verifies the perception of transfer rate upon the support given by managers for the achievement of the learning transfer in the organization, and upon the connection between certain training methods and the transfer rate. The items are structured on the Likert scale, from 1 to 5 (example: Total disagreement to Total Agreement) in order to detect the training effects in measuring terms.

Data analysis

The questionnaires were sent by e-mail to 20 SMEs in Dolj, Valcea and Gorj counties: these were posted on an accessible web platform, without user account and password, which simplified their online, faster completion. Being self-administered questionnaires, a series of completion instructions were posted on the mentioned platform. By the time of the present analysis, 27 questionnaires were received in Dolj and Valcea counties (filled in by employers); two of them were invalid (because of the decreased rate of completion). From 25 valid questionnaires, two of them will not

make the object of evolutionary analysis in years, because the respondent companies were founded in 2014, but the answers will be taken into account for the evaluation of the implementation stage of CVT programmes in 2014 (Continuous Training). The structure of the analyzed companies, from the point of view of the number of the employees, is represented in Chart No. 1:

Chart No.1, Structure of analyzed enterprises

Micro- enterprises (0-9 employees)	Small enterprises (10-49 employees)	Middle enterprises (50-250 employees)	Big enterprises (over 250 employees)
9	8	5	3

The profile of the respondent is the following: 52% of respondents are women; all the respondents are Heads of Departments, with more than 10 years of work experience in the organization. The respondents consider the training as being important, with a score of 4.21 on Likert scale (from 1 to 5), so: 33.33% consider it very important, 54.17% consider it important and 12.50% consider it has a medium importance in the company activity. Although the respondents give a certain importance to training, only 19 of 22 companies which operated between 2012 and 2013 organized CVT for their employees (86%), respectively 18 of 23 companies which operated between 2013 and 2014 (78%), no matter the training type (formal or informal). The reasons why some of the representatives do not consider it important or do not organize training in the company are represented in the chart below:

Chart No. 2. The reasons why training is not organized, sample level

The employees have all necessary competences for achieving the task	12.5%
If the employees are qualified, they could get the attention of the competition or could leave the company	12.5%
It is not the responsibility of the company	6.25%
Other answer:	68.75%

Source: author's findings

The number of the employees who benefited from training (expressed as an absolute value and not as a percentage of the total number of employees) was constant in 2012 and 2013, with a small increase in 2014, according to the chart below (we mention that this increase is due to the fact that two respondents worked only in 2014 and 2013, so the real increase is smaller). This percentage is similar to that published in the Eurostat statistics (2010), from which we find that the percentage of employees who participate in in-house training courses from the total number of employees in those companies is 41.2% in 2010 in Romania, closer to the European average of 47.6% (we mention that this quoted statistic refers only to the participants in CVT courses, and not to any kind of training form, which the current study tackles).

Chart No.3. Employees' number who benefited from training, 2012-2014

	Medium number of employees	Number of trained employees	Percentage of trained employees
2012	65	33	50.76%
2013	64	33	51.56%
2014	65	37	56.92%

The average number of training hours organized at the level of companies has a similar trend with the productivity of the companies individually represented, the lowest value being registered for 2013, in comparison with 2012.

Even if the values associated with the number of training hours are high, in comparison with the average number of employees, we see that the average number of training hours done per each employee is low, a lot under the European average, (namely: 12.66 training hours/employee, in 2014, 11.26 training hours/employee, in 2013, 12.06 hours/employee in 2012). Nevertheless, taking into account the fact that the companies do not activate in the same area, they have different processes and fluxes, a different market increase, so we cannot calculate their average productivity as a control measure or a partial working method. Thus, using the same graphic, we represented the variation of productivity for each of the 19 companies which underwent training between 2014 and 2013, and between 2013 and 2012, parallel to the variation of training hours done at the level of each company. We took into consideration the companies which did not have any kind of training initiative in none of the three years analysed as a control group and we noticed that they had a different evolution in comparison with the central group. The companies which did not have any training initiative (4 of 23 between 2014 and 2013 and 3 of 22 between 2013 and 2012, taking into account that one of them had only two fiscal years ended, 2014-2013) registered inferior values of productivity compared to the ones that organized training for their employees, for each of three years analyzed, according to figure No. 1. From the figure below, we notice the fact that the evolution of productivity in 2013 was lower than in 2012, returning in 2014 to

values higher than the values obtained in 2012, for both types of companies (both for those that did not organize training, and for those that organized training), phenomenon which can be explained by the evolution of the macro-economic situation.

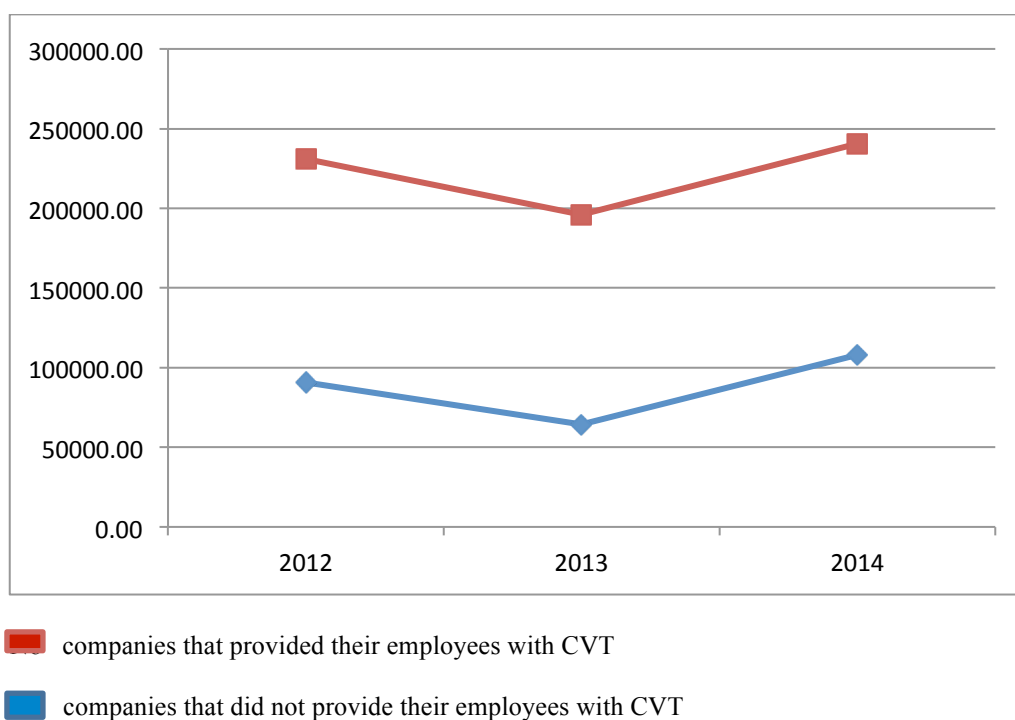


Figure No. 1: The evolution of productivity of companies that did not provide their employees with CVT in comparison with those that provided their employees with CVT

Source: author's findings

Furthermore, through successive graphical representations we discovered the fact that the training measurement which seems to be in a direct relationship with the productivity is an absolute measurement (the training volume, meaning the number of training hours done yearly at the company level). In figures 2 and 3 we successively represented the variation of productivity in 2013 in comparison with 2012 (percentage) and the variation of productivity obtained at the level of 2014 in comparison with 2013, parallel to the variation of the training volume in the same intervals. At an empirical level, this has a moderate correlation, in the sense that between 2013 and 2012, for 6 out of 19 companies which underwent the training, when the training volume decreased in 2013 in comparison with 2012 and productivity registered the same evolution (even with a similar percentage decrease). For one company, when the training volume increased, productivity increased as well. For two other companies, when the training volume was constant in comparison with the previous year, there was an increase of productivity, but for another company, when the training volume remained the same compared to the previous year, there was a decrease of productivity. Only 9 companies had an independent evolution of productivity in comparison with the decrease/increase of the training intensity, and only 3 of them seem to have totally different evolutions (when the positive variation of training is not associated with an increase of productivity, on the contrary).

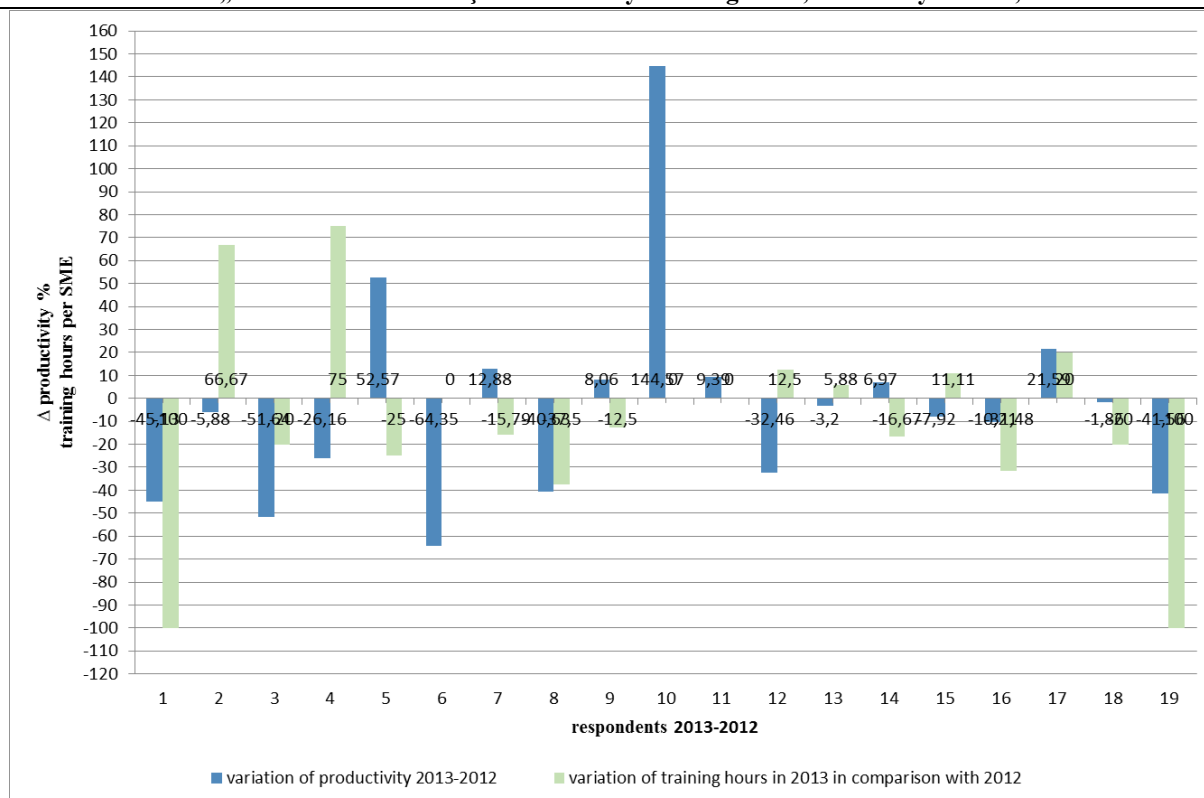


Figure No. 2. Productivity variation according to training hours variation, for the group of sample companies that provided their employees with CVT

Source: author's findings

For 2014-2013, the relationship between the variation of productivity and the variation of organized training hours is much more obvious, namely: 13 out of 19 companies that provided their employees with CVT had an evolution in the same way of the two variables (8 of the ones which had a positive variation of training volume obtained higher productivity than the previous year, and 5 of those which decreased the training volume obtained lower productivity than in 2013); likewise, the increase seems proportional, without significant differences between both variables (training - independent variable, productivity - dependent variable). Another two companies which maintained a constant training volume, for the reference year, had the following evolution: one of them had a productivity increase, and the second had a slight decrease, almost insignificant in comparison with 2013 (by 0.35% lower). Four of the companies registered a weak correlation of productivity, depending on the training volume, only three of them seem to have different significant values for two variables. One of three companies appears recurrent and for 2013-2012 as well, having a weaker correlation between productivity and the training volume. Analyzing the completed questionnaire by this respondent, (respondent No. 14 of both graphics), we noticed the following: it is a small company (with 3 employees), it has an average importance of training, it organized training only in one of the 3 analyzed years, it organizes periodical training, without a certain frequency, it is not based on a training plan, it applies few evaluation methods at the end and it plans to organize only informal training methods for employees in the near future. This is a general tendency of small companies all over the world, namely that of organizing on-the-job training sessions or to value the informal, unplanned learning more. Even if the small companies are based on the development of informal processes of competences (such as the experimental learning, through trial-error or through the equal access at certain networks), meaning decreased levels of formal training, this does not mean that the process of learning is not achieved (Ashton et al., 2008, apud. Bishop, 2015, p. 72). In the meanwhile, this assertion does not involve the fact that the formal training programmes would be irrelevant for SMEs (Bishop, 2015).

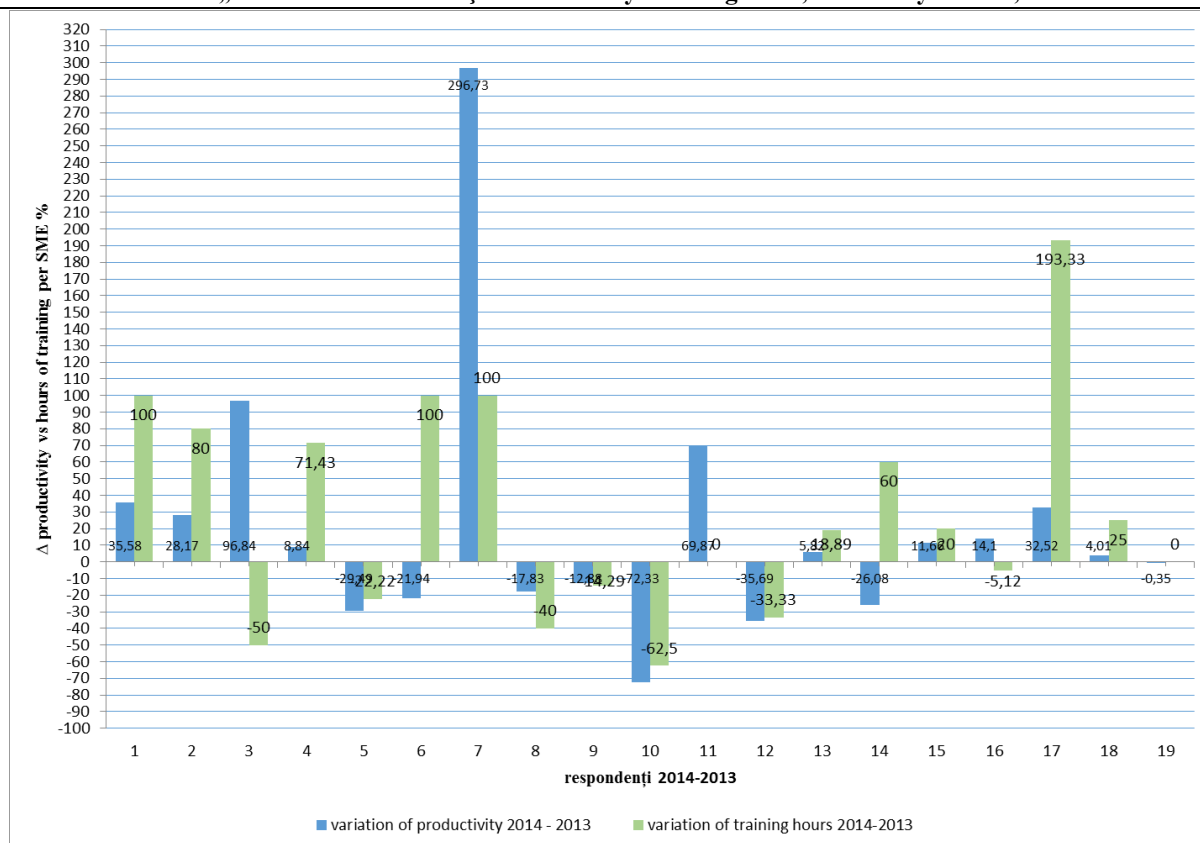


Figure No. 3. Productivity variation according to the variation of training hours, for 2014-2013

Source: author's findings

The explanations of the moderate correlation between productivity and the training volume can be presented on the basis of data obtained from companies, namely:

- 58.33% of respondents provide their employees with periodical training, without a certain frequency;
- 62.5% do not have an annual training plan, on the basis of which to implement these initiatives;
- 62.5% provide their employees with on-the-job training the most frequently, and 45.83% provide their employees with individual training (directly sending each person to courses, according to their individual identified needs), only 8.33% provide their employees with e-Learning and only 4.17% provide their employees with practical and specialization internships in companies in the country or abroad, none of the respondents provided their employees with apprenticeship programmes;
- 45.83% of respondents would characterize the way to achieve professional competences in their own company as *non formal* (practicing some specified activities directly from their work place or the employees' self-training), and 30% of them did not appeal to authorized training suppliers;
- 20.83% of respondents consider that certain legal regulations which give rights to the employees in the CVT field are restrictive ("Article 157 (1) from Labour Code - In case that the employer did not comply with his obligation to ensure the expenses in the terms provided by law, the employee has the right to a paid leave for training, of up to 10 working days or 80 hours");
- The majority of the respondents said there were few methods of training evaluation, and they were mostly applied immediately after the achievement of training (83.33%), which represents a method with weak results- if it is not correlated with subsequent evaluations, as it is good to know that the questionnaires administered immediately after the training indicated more favourable results than the subsequent ones, given the fact that participants are still under the influence of the enthusiasm or the

satisfaction of the participation in the training course/session. When it appears, the most frequent method to measure the impact of training is, according to answers provided, the measurement of working productivity;

- Regarding the employers' intention to provide their employees with training courses/sessions in the next years, the situation is presented according to Chart No. 4.

Chart No. 4. The intention of the interviewed employers to provide their employees with CVT between 2015 and 2016

	Yes–	NO–	I don't know	Total respondents
Formal courses	59.09% 13	9.09% 2	31.82% 7	22
Non-formal training methods (without a certificate)	56.52% 13	0.00% 0	43.48% 10	23

As far as the measurement of perception is concerned, we find the fact that employers' perception regarding the improvement of employees' productivity, as a result of the organization of CVT sessions, is a precise one, describing a trend similar to the productivity objectively measured and shown above, in Figure 4. Respondents had to evaluate their performance after the training, on Likert scale from 1 to 5 (1- Much lower, 2- Lower, 3- Identical with previous performance, 4- Higher, 5- Much higher) and they gave a lower average score for 2013 compared to 2012 and a higher average score for 2014 compared to 2012, exactly as in the case of objective measurements. However, the difference between the value in 2014 compared to 2012 is higher (at the level of perception) than in reality. In other words, employers tend to give much more relevance to the effects of training upon productivity than the objective calculation demonstrates.

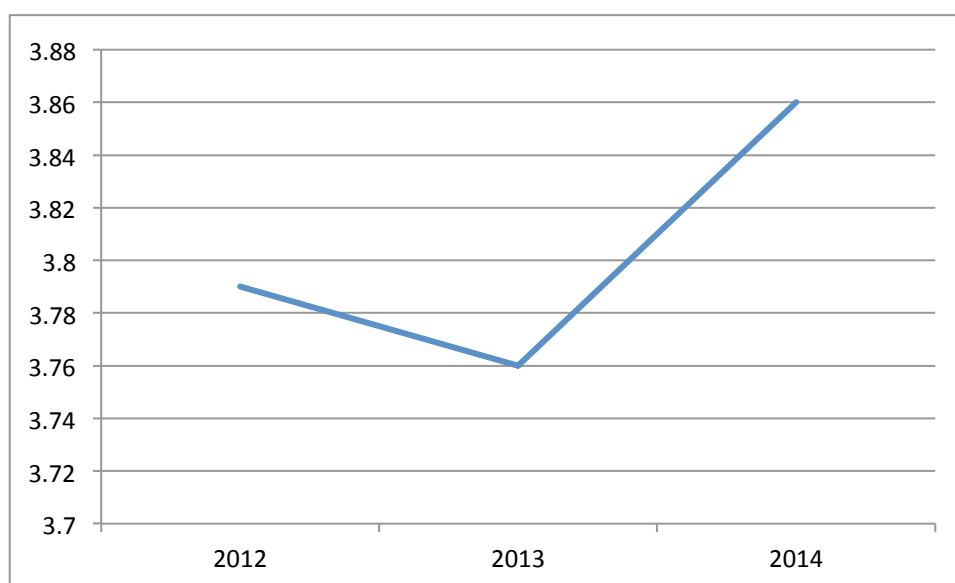


Figure No. 4. Perception upon productivity, as a result of CVT

Source: author's findings

Conclusions and further developments

The synthetic conclusions of the present empirical research paper are:

- The 19 analysed companies which invested in training of human resources registered higher productivity than the other four which did not invest in training, in each of the three analysed years;
- There is a moderate correlation between the training hours done every year at the company level and the subsequent performance of the trained employees, measured through objective methods, and perception measurements;

- Various clues were recorded which explain the moderate correlation instead of an expected stronger one (as in the literature), summarized as follows: not planning the training, insufficient methods to evaluate training results and their not having been properly filled in, a specific attitude regarding training - seen as a negotiated good between the employee and the employer, which should be the result of a mutual responsibility, and not as a sole responsibility of the company.

A limitation of the current study arises from the small size of the sample and the heterogeneity of companies' activity areas; however, the current analysis represents a reference point for the next developments. The further development could be represented by the restriction of the sample to a single area with high added value of human resources, for whom the evolution of the market is known for the last three analysed years. Thus, the analysis could highlight the evolution of productivity, compared to the training intensity practiced in the companies in the selected area, taking into account other factors which influence productivity (e.g. the market evolution for the sector). Furthermore, we will send out a questionnaire for the employees of the analysed companies as well, since we consider that both employees' and employers' perspectives are of the same importance in the learning process, both categories of respondents being directly affected by the respective changes and employees' perspective can represent a complementary validation method of the obtained results.

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