

Analysis of the Interdependence between Turnover and the Number of Employees in the IT Industry

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Abstract: By accomplishing this study, I propose to make an analysis of two indicators, turnover and number of employees, in order to be able to show the relationship of interdependence between the two, the study being carried out on a sample of about 65 firms which operates in the IT industry in Romania, from all the economic regions of the country, whose code in the National Economy Activities Classification (NACE) is 6201 Custom software development activities (customer oriented software). In order to achieve the objectives, the research aims to dynamically analyze the relationship between the turnover and the number of employees in the IT sector for a period of 6 years (2011-2016). The usefulness of this analysis is due to the fact that the IT industry in Romania has gained a growing significance from one year to another, and at the moment it became one of the Romanian industry's stars. I will also analyze the main trumps regarding the prospects for future development, as well as the main threats to this sector of activity.

Keywords: Turnover; Number of Employees; Correlation; IT industry

JEL Classification: A10; C01; D22; O12; M41

1. Introduction

The information technology industry or the IT industry has seen a very strong development in recent years, managing to participate for years in the growth of our country's Gross Domestic Product, currently accounting for about 6% of GDP. We have a 50% increase in the number of companies with a computer profile, reflected by an increase in the sector's turnover and an increase in the number of employees.

A survey by ARIES Transilvania for the period 2011-2016 showed that the number of companies active in the IT industry in Romania increased from 9,823 to 14,339, an increase of about 32%, and estimates for 2017 would have exceeded 17,000 companies. As for the number of employees, it has increased significantly, the number of those working in this field at the end of 2016 being over 100,000. Regarding turnover in the sector, it also increased significantly between 2011 and

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2016, reaching about 5 billion euros by the end of 2016, accounting for 6% of the Gross Domestic Product.¹

2. Theoretical and Practical Aspects

Turnover represents the total revenue generated by the current business activity, being the most important indicator of achieving the measurement of an entity's economic performance. In its evolution, turnover is influenced by a series of internal or external factors that can influence its growth or decrease. By analyzing the turnover, it is possible to determine the place of an enterprise within the industry where it operates, its market position, but also to be able to assess the possibilities for future development.

In specialized literature, there are several approaches to how to define turnover, each author drawing a definition of turnover depending on its approach. So in terms of Professor Mironiuc M., turnover is an indicator that reflects the company's growth, which determines its strategic position depending on various elements. (Mironiuc, 2009) And the author, Niculescu M., comes with a statement in terms of turnover, in which he says that it defines the place of an entity in relation to its main competitors, as well as the place it occupies within its branch of activity. (Niculescu, 1997) And the author, Popa D., say that the turnover is nothing but the totality of an entity's business at the market price, of all revenues from commercial transactions performed by entities within a predetermined time frame. (Popa & Meşter, 2006) And the 1982 French accounting plan defines turnover as the value of all the proceeds earned by normal business activity.

¹ Aries Transilvania, IT & C Study in Cluj – National Comparative Analysis, 2017, <http://aries-transilvania.ro/en/it-c-study-in-cluj-national-comparative-analysis/>, accessed on 03/28/2018.

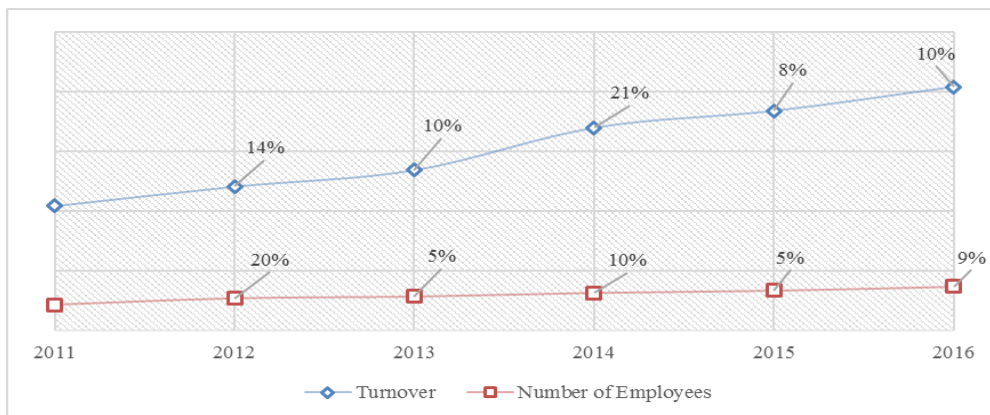


Figure 1. Evolution of turnover and number of employees for the region Bucharest-Ilfov

Sources: Own calculations based on aggregate financial statements (2011-2016)

Turnover shows rising values throughout the analyzed period, with a peak of around 21% in 2014 and a minimum of around 8% in 2015, the increase being due to the increase in customer numbers or the number of employees (Figure no. 1)

The evolution of the number of employees is also increasing from one period to the next, with a maximum value of about 20%, and a minimum of about 5% is recorded in 2013- 2015 (Figure no. 1).

There is a direct link between turnover and number of employees in Bucharest Ilfov region, so an increase in the number of employees influences an increase in turnover.



Figure 2. Evolution of turnover and number of employees for the region Center

Sources: Own calculations based on aggregate financial statements (2011-2016)

Turnover has been increasing for the entire period under review, where it has a maximum value of 21% in 2014 and a minimum value of 7% in 2011 (Figure no. 2).

The number of employees has oscillating evolution over the period under review, where it has a maximum value of about 32% in 2013 and a minimum value of approximately -32% in 2012 (Figure no. 2).

And for the Center region, there is a link between the two analyzed indicators, but a weaker one.

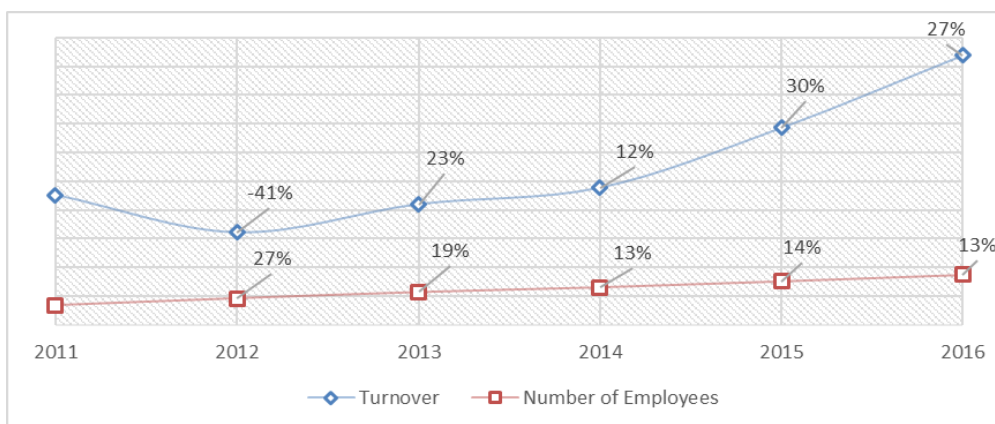


Figure 3. Evolution of turnover and number of employees for the region North West

Sources: Own calculations based on aggregate financial statements (2011-2016)

Turnover has been increasing for the entire period under review, where it has a maximum value of 30% in 2015 and a minimum value of -41% in 2012 (Figure no. 3).

The number of employees is increasing from one period to the next, where it has a maximum value of about 27% in 2012, and a minimum value of about 13% is recorded in 2014 and 2016 (Figure no. 3).

There is a direct link between the turnover and the number of employees for the North East region, so any change in the number of companies is influencing the turnover.

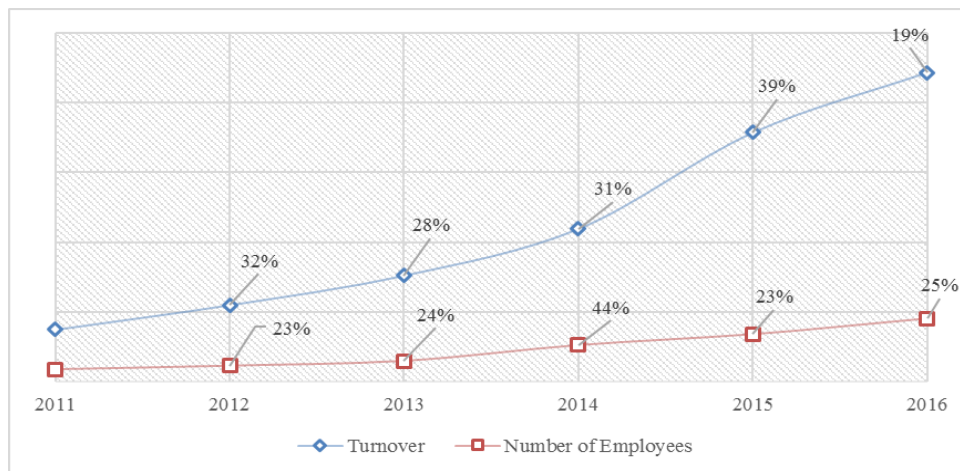


Figure 4. Evolution of turnover and number of employees for the region North East

Sources: Own calculations based on aggregate financial statements (2011-2016)

Regarding the evolution of turnover in the North East region, it shows rising values throughout for the all analyzed period, where they record a maximum value of 39% in 2015, and a minimum value for this indicator is recorded in 2016, where it has an approximate value of 19% (Figure no. 4).

Number of employees of the entities analyzed in the North East Region record has rising values throughout the analyzed period, where it shows a maximum value of 44% in 2014, respectively a minimum value of 23% in the years 2012 and 2015 (Figure no. 4). There is also a correlation between turnover and number of employees for this region, even stronger than the previous analyzed regions.

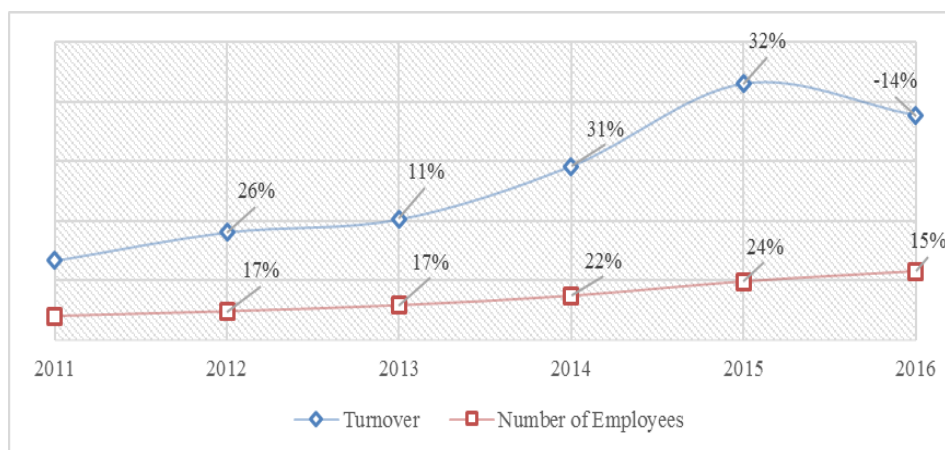


Figure 5. Evolution of turnover and number of employees for the region South

Sources: Own calculations based on aggregate financial statements (2011-2016)

The turnover of the analyzed entities in the South region shows increasing values, except in 2016, when there is a decrease. This decrease is likely to be the result of other factors such as the decrease in the exchange rate, the diminution of existing contracts, etc (Figure no. 5).

Turning to turnover, the net profit of the companies surveyed shows increasing values from one year to the next, with a maximum of 24% in 2015 and a minimum of around 15% in 2016 (Figure no. 5).

There is also a direct link between turnover and number of employees in this region, so that for the year 2016, although there is an increase in the number of employees, there is a decrease in turnover.

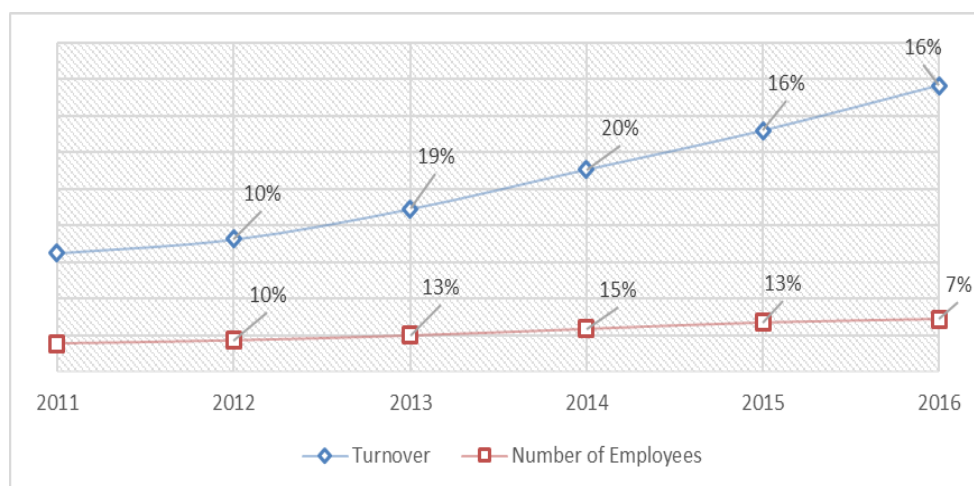


Figure 6. Evolution of turnover and number of employees for the region South East

Sources: Own calculations based on aggregate financial statements (2011-2016)

Turnover shows rising values throughout the entire period under review, with a peak of around 20% in 2014, and a minimum value of approximately 10% in 2012 (Figure no. 6).

And here, like the other regions, the number of employees shows increasing values for the entire analyzed period, where they have a maximum of about 15% in 2014 and a minimum of about 7% in 2016 (Figure no. 6).

Analyzing Figure no. 6 it can be concluded that there is a close relationship between the two elements, where an increase in the number of employees influences an increase in turnover.

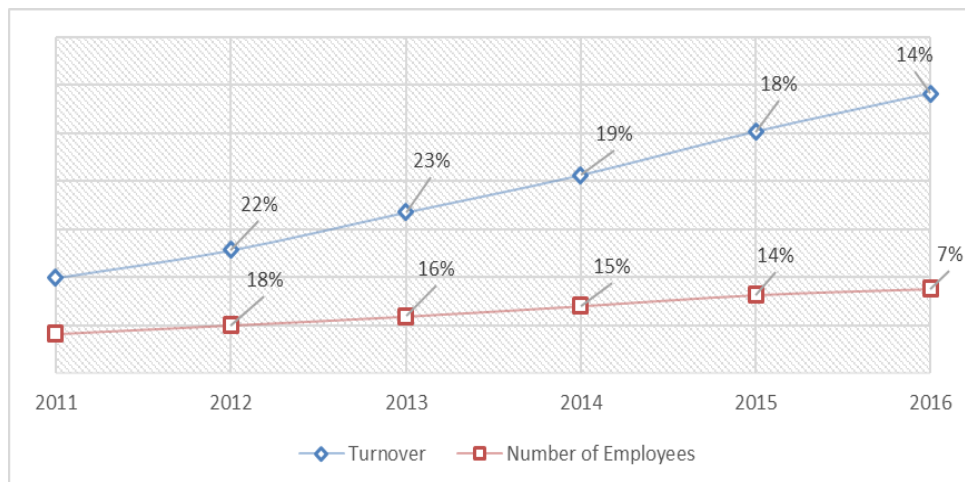


Figure 7. Evolution of turnover and number of employees for the region South West

Sources: Own calculations based on aggregate financial statements (2011-2016)

The turnover had very high in the first part analyzed, these values are calming down, where a maximum value of about 23% is recorded in 2013, and a minimum value of 14% in 2016 (Figure no. 7). The number of employees is increasing for the entire analyzed period, registering a maximum value of about 18% in 2012 and a minimum value of approximately 7% recorded in 2016 (Figure no. 7). Analyzing Figure no. 7, we can say that there is a direct link between the number of employees and the turnover of the entities analyzed in the South West region.

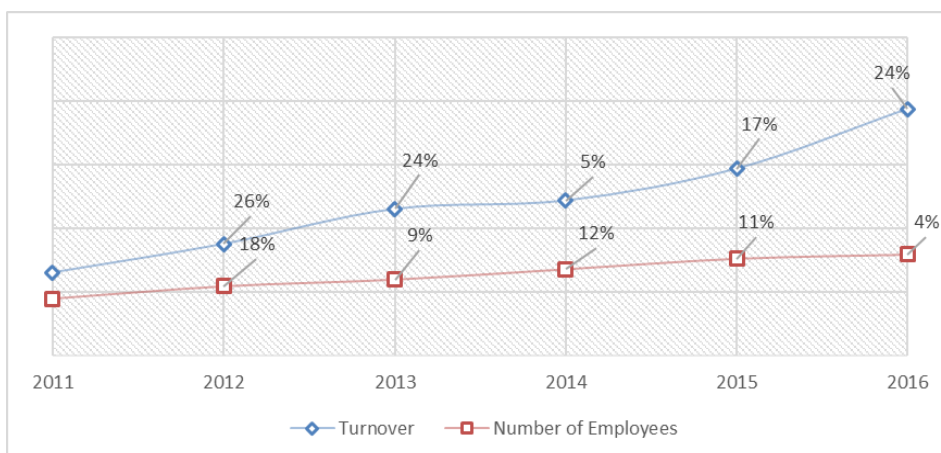


Figure 8. Evolution of turnover and number of employees for the region West

Sources: Own calculations based on aggregate financial statements (2011-2016)

Turnover has been increasing for the entire period under review, where it has a maximum value of 26% in 2012, and a minimum value of 4% in 2014 (Figure no. 8).

Compared to turnover, the number of employees of the companies surveyed shows increasing values from one year to the next, where they record a maximum value of 18% in 2012, a minimum value of about 15% in 2016 (Figure no. 8).

There is a link between the two indicators analyzed for the West region, where we have an increase in the number of employees.

3. Conclusions

As the main development opportunities for this sector are provided by the specialized labor force, competitive with other countries in the region, as well as some tax incentives granted by the governing institutions that make the labor cost relatively low. Among the factors that lead to threats to this sector may be the poor organization of our education system, where there is a strong demand for staff in the field, as faculties are barely able to cover a very few new graduates. This automatically leads to the creation of competition on the labor market, which will inevitably lead to an increase in the cost of wage costs. Another factor threatening this area is represented by governmental authorities, which even if they have taken a number of beneficial measures, the last tax changes have led to an additional increase in wage cost. As a final conclusion, we can state that turnover and number of employees are two representative indicators for IT entities. We have seen that there is a direct link between the number of employees and the turnover in all eight economical regions analyzed, because the raw material of this industry is human intellect. It is very important that in order to grow this industry it is necessary to prepare new specialists in the field, even if this is a rather difficult one at the moment.

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