

## ASPECTS REGARDING LABOR PRODUCTIVITY IN THE ROAD TRANSPORT OF GOODS

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### **Abstract**

*Freight transport is certainly the most important branch of transport and certainly one of the most important branches of the economy in general. There is a close link between transport and the evolution and development of mankind, which is why the field of transport has always been of great interest and has undergone a multitude of changes throughout the history. The development of the freight transport sector varies from country to country, with significant differences from one country to another. Freight transport in Romania has not been an area of great interest, and this lack of interest is reflected in the lack of investment needed to operate properly and to make this area attractive and economically efficient.*

**Key Words:** transport, productivity, evolution, indicators.

**JLE Classification:** A1

### **1. History and General Facts About Freight Transport**

There is no clear date for the emergence of freight transport, as this type of activity has always been present in human history, since people have always had the need to transport goods and not only from one destination to another.

Throughout its history, transport has undergone dramatic changes, from transport using horse-drawn wagons to the present day where there are a multitude of means by which goods can be transported, including trucks, trains, ships and planes.

An important point in the development of freight transport was when the first railways appeared. With the advent of the railways, people were able to transport goods much faster and in much larger quantities, enabling many countries to develop economically.

The Industrial Revolution played a very important role in the development of transport because it created a huge demand for goods to be transported, which pushed transport companies to adapt and evolve in order to keep up with the growing demand.

### **1.1. Definition of Freight Transport**

There are many definitions that experts in the field recommend to describe the activity of transport, the most appropriate from my point of view being the following: transport is an activity whereby goods are moved or moved from one location to another location. This definition focuses only on the activity itself and does not take into account the complexity and the many branches that this sector of activity encompasses (Woxenius, 1998, p.63).

Transport can be seen in terms of two different dimensions, namely: transport as an economic dimension in that it makes it possible to move goods to geographic areas much further away from where they are obtained, thus helping the economic development of companies or geographical areas that benefit from this activity.

The second dimension through which transport can be viewed is the social dimension in that it provides jobs, according to EUROSTAT in 2020 the total number of people employed in transport was 10.8 million, accounting for 5% of Europe's working population population ([www.ec.europa.eu/eurostat](http://www.ec.europa.eu/eurostat), 2021).

### **1.2. The Importance of Freight Transport**

Freight transport as an activity is considered to be one of the most closely linked to the economic development of civilization, people have always needed to consume certain goods, goods that were not readily available in their surroundings and had to be brought in from other geographical areas.

Transport is of great historical importance because it was able to make available certain raw materials or materials that favored the construction and expansion of certain cities that without the possibility of bringing the necessary materials would have had a much slower evolution.

Transport is also historically important through its involvement in the agricultural and food sectors. The high perishability of some foods made it impossible to transport them by conventional means of transport, thus limiting traders' ability to sell them since they had to limit themselves to customers and markets in their immediate vicinity (Garrison and Levinson, p.375).

Thus transport by modern and much more advanced means such as ferries and trucks opened up new horizons and opportunities for both traders and those who wanted to buy those foodstuffs.

## **2. Transport Efficiency Indicators and Work Productivity**

Freight transport is an activity of great interest to people's daily lives because all the goods and services a society consumes need to be transported. Transportation cost is

an influential factor in the final cost of a good or service, which is why experts in the field are always looking for ways to make freight transportation more efficient ([www.bts.gov](http://www.bts.gov), 2016).

To this end, a number of efficiency indicators should be taken into account, namely:

- Transport price;
- Transport productivity;
- Logistics cost;
- Transport capacity.

The transport price is the cost paid by customers for the transport service. This indicator is very volatile and is influenced by a number of factors such as:

- Mode of transport;
- Specifics of the transport and goods transported;
- Weight and volume of the consignment;
- Distance, place of loading and place of unloading.

Mode of transport, which refers to the method and vehicle of transport used. This may include rail transport and the use of trains, water transport and the use of ships, land transport and the use of trucks and air transport and the use of aircraft.

The specifics of the transport and the goods transported, depending on the goods transported the transport must be adapted, which means using certain vehicles or means of transport or using certain specific routes and ways to carry out the transport.

In this respect, freight transport is divided as follows:

- Full load transport, this specific type of transport is defined by the fact that a customer hires and uses a complete transport vehicle and not just part of the transport capacity.
- Less-than-full-load transport, this transport specification is defined by the fact that a customer rents only part of the transport fleet. This type of transport serves more than one customer at the same time as opposed to the above-mentioned specific.
- Oversized load transport, this specific is defined by the fact that it carries so-called „special load" which exceeds the transport capacity and dimensions of a means of transport. This type of transport is also more costly than other types of transport because it includes additional costs such as police escorts.
- Intermodal rail transport. This type of transport is carried out by rail and is considered the most economical in terms of transport cost and the most environmentally friendly due to the very large capacity of goods that can be carried in a single transport.

- Ocean transport, this type of transport is used for the intercontinental transport of goods and is a very cost-effective mode of transport as it has a high transport capacity.
- Air transport is the fastest way of transporting goods, but it is also the most inefficient in terms of cost and pollution because only small quantities can be transported.

The weight and volume of the transport is an influential factor in calculating the cost of transport because this factor determines the transport route, the means of transport and the transport specification used. There is a clear cost difference between these paths, means and specifics and therefore the weight and volume of the transport can influence the transport cost radically.

Distance and place of loading and unloading is the last factor influencing transport cost. Because every means of transport has a cost in terms of fuel used, the longer the distance of transport, the higher the cost of transport. Depending on the place of loading and the place of unloading, the cost of transport varies considerably because if the place of unloading is in a different country from the place of loading, there are new costs for road charges from the country of unloading or transit countries to the place of unloading.

Transport productivity defines the output per unit of transport. The simplest method and the one most often used by transport companies is the relation tones per kilometer travelled by a transport vehicle. Another method of calculating transport productivity is the ratio of daily haulage per driver or transport vehicle. It is very important to take transport productivity into account to find out the correct and profitable cost per transport unit.

The logistics cost includes all costs from the production and storage of goods to transport to the final consumer. Logistics costs can be divided into two categories: fixed costs and variable costs.

Fixed costs refer to costs that do not differ from one unit of time to another and are not influenced by the volume of goods. Fixed costs are rent costs or tax costs. Variable costs are those that differ from one time unit to another and are influenced by the volume of goods.

Logistics costs are as follows: procurement logistics costs, production logistics costs, sales logistics costs and logistics relocation costs.

Transport capacity utilization is defined as the process of using each transport vehicle to its full potential. Utilization at full capacity of each transport vehicle translates into increased efficiency and high profitability for the transport company. In addition to the full potential use of the transport vehicle, the distance travelled by the vehicle to its destination, the weight and volume of the goods, and the value of the goods

transported may also be included in the calculation of transport capacity use ([www.ops.fhwa.dot.gov/FREIGHT](http://www.ops.fhwa.dot.gov/FREIGHT), 2022).

### **2.1. Work Productivity and Factors Influencing the Work Productivity**

Productivity can be defined as the value and level at which certain factors are used in the economy. The relationship by which labor productivity is determined is that between goods and services and factors of production.

Given the very high competition in the road haulage sector, for companies operating in this field understanding, knowing in detail and mastering the factors that influence labor productivity is very important because they have to offer a very competitive price, but at the same time they have to make a profit that makes this activity profitable (Pascual, et al, 2021, p.45).

Transport specialists have always looked for new methods of analysis to make work productivity more efficient, attaching great importance to discovering and analyzing the factors that influence labor productivity in road freight transport.

The most important factors influencing labor productivity in freight transport are (Pascual, et al, 2021, p.45):

- Pre-planning the route from loading to unloading point;
- Time of delivery of goods;
- Distance travelled from place of loading to place of unloading;
- Number of breaks taken by the driver;
- Age of the means of transport;
- Number of deliveries made per transport;
- Collection and timely delivery of goods transported.

### **3. Evolution of Freight Transport in Romania From 2006 to 2019**

Romania in the period before joining the European Union can be classified as a country with a poor transport infrastructure in terms of quality but also in terms of distance coverage at national level. With the entry into the European Union, which came with a number of advantages but also opportunities in terms of development of the transport industry, Romania was faced with the fact that it could not take advantage of all these opportunities without a concrete investment plan to redress this situation.

While Romania had a poorly developed transport infrastructure, which made the transport sector unattractive for transport companies because it was not profitable, generating high costs in terms of fuel consumption and delivery times of goods and even generating costs for the repair of means of transport due to the poor

infrastructure which progressively deteriorated the means of transport, Romania did not experience any significant growth after joining the European Union.

**Amount of Freight Transported by Road in Romania From 2006 to 2019**

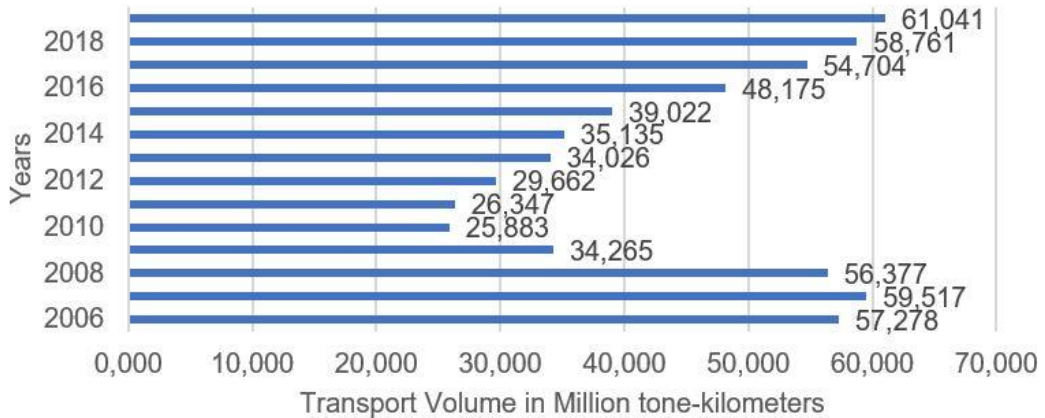


Figure 1: Amount of Freight Transported by Road in Romania From 2006-2019

Source: ( [www.statista.com/statistics/romania-tonne-kilometers](http://www.statista.com/statistics/romania-tonne-kilometers), 2022)

An analysis of the first years after accession to the European Union shows a very slight increase in 2007 compared to 2006, with 57.278 million tonnes per kilometre transported in 2006 compared to 59.517 million tonnes per kilometre in 2007. In 2008 and due to the World Economic Crisis there was a slight decrease of about 3 million tonnes compared to 2007.

Since 2009, the year in which the effects of the crisis have a major effect on Romania, there has been a dramatic drop in the number of tonnes transported compared to the previous year. In 2009 only 34.256 million tonnes were transported, a difference of about 22 million tonnes. Subsequent years show an increasing year-on-year increase, but still below the level of 2006-2008.

The years 2010-2012 show no significant growth, with an average increase of only 4 million tonnes. It is only in 2013 that we can really speak of a significant increase compared to 2009, which was the point of maximum decrease in transport volume.

The year 2012 recorded an increase of 9 million tonnes compared to 2009, the years 2014-2015 were marked by a period of small but stable growth, with a volume of 35.135 million tonnes per kilometre in 2014 and a total volume of 39.022 million tonnes transported in 2015. A really significant increase for Romania can be observed again in 2016 where we have again a significant jump compared to the previous year, the difference in 2016 compared to 2015 being about 9 million tonnes. The years 2017-2018 also see a significant gradual increase, with 2017 registering 54,704 tonnes transported and 2018 also seeing a jump of around 10 million tonnes

compared to 2016. The year 2019, being the last year taken into consideration, is really the first year after the entry into the European Union and after the World Economic Crisis, so after more than a decade, in which we can talk about an increase in transport volumes. The volume of shipments in 2019 was 61.041 million tonnes. After analysing these statistics, it is clear that Romania has failed to prepare its transport infrastructure to take advantage of its entry into the European Union and has failed to attract international transport companies to grow this sector. One can also see the devastating effect of the World Economic Crisis and the fact that Romania took a long period of time to recover and get back to a normal level of transport volume.

The conclusion we can draw from this analysis is that Romania could have benefited a lot from an economic point of view after joining the European Union and could have passed much more easily and quickly through the crisis period if the government had put more emphasis on the importance of transport infrastructure and if it had come up with concrete investment plans in this field.

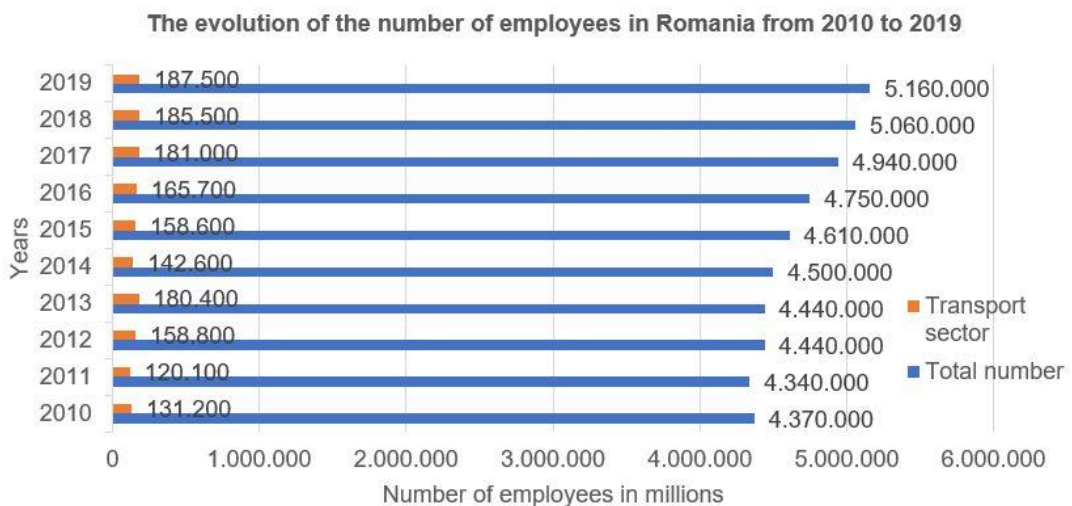


Figure 2: The Evolution of the Number of Employees in Romania From 2010 to 2019

Source: ([www.zf.ro/suplimente/cati-oameni-lucreaza-in-romania-19757218](http://www.zf.ro/suplimente/cati-oameni-lucreaza-in-romania-19757218) and [www.keyfins.com/transportul-local-de-marfuri](http://www.keyfins.com/transportul-local-de-marfuri))

#### **4. Evolution of the Number of Employees in Romania From 2010 to 2019**

In 2010, a total of 4.37 million employees were active on the Romanian labor market in all fields of activity, of which a total of 131.2 thousand employees were active in the transport sector, representing 3.02% of the total active labor force in Romania.

The year 2011 compared to 2010 shows a decrease of approximately 10,000 in the number of employees, this decrease is also associated with a decrease in the total number of employees in Romania, the total number in 2011 being 300,000 thousand less than in 2010.

The years 2012 and 2013 were marked by a considerable increase compared to 2011, with an increase of 38,000 thousand employees and 60,300 thousand employees in 2012 and 2013 respectively.

Analyzing the period 2014-2016, a fluctuation in the road haulage labor market can be observed. The year 2014 recorded a decrease in the number of employees to a total of 142,600 thousand employees, followed by a considerable increase in 2015 and 2016 but without exceeding the value recorded in 2013.

It was only in 2017 that the labor market in Romania reached a constant and higher level than in 2013, with 181,000 thousand employees out of a total of 5.06 million employees nationwide. The upward trend continues in the last two years under review, with 185,500 thousand employees in 2018 and a total of 187,500 thousand employees in 2019 out of a countrywide total of 5.16 million employees.

Throughout the period under analysis, a constant trend can be observed, albeit with slight fluctuations in the period 2012-2015, with the average number of employees in the road haulage sector standing at approximately 150,000-160,000 thousand employees. Moreover, the analysis also shows that the number of employees in the transport sector represented an average of about 3.50% of the total active workforce in Romania.

## **Conclusions**

Transport was and still is an activity of great importance to mankind, and mainly the transport of goods. Without this sector of activity mankind would not have developed at the accelerated rate at which it is now developing and many geographic areas of the globe, which are naturally devoid of resources and goods, could not have developed without freight transport.

Given the importance of this sector of activity, road haulage companies attach particular importance to studying the factors that influence labour productivity, the most important of which are: the delivery time of the goods, the number of deliveries made per consignment, the age of the means of transport and the distance travelled from the place of loading to the place of unloading. Only by studying these factors and finding solutions or improving them can a company be competitive in the market and maximise its profits. A company that does not take into account the impotence



of factors that influence labour productivity is a company that will never be competitive and will make much lower profits.

In Romania, a lack of governmental interest in road freight transport has been observed over time. This lack of interest can be deduced from the lack of an efficient infrastructure and the lack of investment in this field. Romania did not take advantage of the benefits of joining the European Union either, remaining in, or even decreasing during the World Economic Crisis the level and volume of freight transport.

In Romania, the level of personnel working in the freight transport sector, following the analysis, shows a constant level, without considerable increases or decreases over the period under analysis, with the freight transport sector having an average of approximately 3.5% of the total active workforce at national level.

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