



TRANSPORT AND ENVIRONMENT

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Abstract *The aim of this research is to draw the attention to the inconvenient problems caused to our environment by the transportation process. As an example it is presented a comparative analysis between Romania and European Union, as for the energy consumption of transport relative to GDP between 2000-2012 years. The research continues with this analysis versus time element that is the energy consumption of transport relative to GDP for EU vs time 2001-2012; that means the evolution of the European Union as a whole, with all the 28 countries. Furthermore, the study presents the energy consumption of transport relative to GDP for Romania vs time 2001-2012. The conclusion of the research is meant to be an awakening to the cruel reality of destroying our environment.*

Key words:

Transportation, environment, energy consumption, GDP

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1. Introduction

Our life is difficult to imagine without transportation process, and of course, without its means. The civilized world searches more rapid and comfortable means of transportation. But all these means cause a lot of trouble for our environment. In the past few decades, freight transport, especially on roads has grown considerably because of the quick and flexible movement of goods. With an expanding market due to product specialization, there will be an increase in the demand for freight transport. There are however, several negative implications for the environment (air and noise pollution), human health and other more far-reaching phenomena such as acidification, photochemical air pollution and the greenhouse effect. But there are many concerns about it, and our endeavors to avoid these problems caused by transportation to our precious environment.

2. Literature review

If we want to live in a healthy world, we have to minimize the effects of the residuum produced by the society. It is for this reason that many studies and a lot of scientists and researchers focused their activity on this topic. So, M. Kroon (Kroon & Ruthgerit and Joop van Ham, 1991) provides a survey of present and potential approaches to reconcile the strong need for increasing transport and the necessity to stop the current destruction of natural resources and harm to

human health. Solutions to this problem are probed in this book including the stimulation of technological breakthroughs, new transport policies and better traffic management. Another study made by James Cooper (Cooper, 1991, pp. 235–253) examines the innovations in logistics and their impact on transport and the environment. It emphasizes on three important innovations: (1) centralization of inventory, (2) 24-hour lorry operations, and (3) just-in time delivery. It also describes companies' motivations in relation to logistics and the consequences for transport. It also explores the policy initiatives that might succeed in reducing the environmental impact of road-freight transport. One of the classic relationships in logistics is the trade-off between warehousing-arid transports. As the number of warehouses increases, the cost of operating them also increases, but transport operating cost falls, for a constant throughput of goods through the warehouse. Companies carrying high-value inventory, have been keen to convert to a system of distribution based on a central warehouse, rather than maintaining a network of, say, 10 regional warehouses. The consequences for transport of centralizing inventory have been calculated using P–E International's TRANSPLAN distribution software package.

Craig Dilworth (Dilworth, 2009) in his book explains our ecological predicament by contextualizing it against the first scientific theory of humankind's development,

drawing on evolution theory, biology, anthropology, archaeology, economics, environmental science and history. It takes over where Darwin left off, revealing that our ecologically disruptive behaviour is rooted in our nature as a species. Download book.

Transportation is one of the main sources of pollution, together with: industry, volcano emissions, dust tempests, natural fires and the housing activities. Air pollution made by the transportation is only a face of the problem, as the noise also contribute to the atmospherically pollution.

Harold F. Hemond (Hemond & Elisabeth J. Fechner-Levy, 1999 makes a succinct, yet substantive, review of chemical fate and transport processes in the environment. He covers the fundamental principles of mass transport, chemical partitioning, and chemical/biological transformation in surface waters, in soil and groundwater, and in air. In this textbook, each of these three major environmental media is introduced by descriptive overviews, followed by presentation of the controlling physical, chemical, and biological processes. Emphasis is placed on intuitively based mathematical models for chemical transport and transformations. Although developed for a one-semester graduate course, Chemical Fate and Transport in the Environment, Second Edition, is also an essential reference for environmental practitioners in industry, consulting, and government agencies.

Tony McMichael (Redfield) describes and explains how we have reached the present human situation, the interplay of our species with the plants and animals that supply our food, and the microbes that often shorten our lives. In the short period since the industrial revolution we have made spectacular progress in every way imaginable, but now our own ingenuity and industries may threaten our very survival - we are at risk of endangering our life support systems to an extent that could harm them badly enough to raise questions about our own prospects for survival as a species. This is an important book for everyone who cares about life - our lives, and the lives of other species with which we are interdependent.

3. Methodology of research

So, from these reasons the main source of the pollution in the inhabitants' locations is the transportation means. This activity succeeded to hold in the last decade for example: 10% from the European Union's GDP, as a whole, and particularly 8.8% in Hungary, 8.7% in Norway, 7.4% in Belgium, 6.2% in Austria, and 4.5% in Romania. In this line, the road transportation is far away the most noxious emission sources, having a weight of 93% in the quantity of greenhouse gases spread in the atmosphere. But neither transport of passengers, nor cargo transport were not friendly with the environment, both of them issuing more and more greenhouse gases. In the same last decade, the former attacked our atmosphere with 27% more, and the latter with 51% more than before this stage. Without any doubt the atmospherically emissions from the road transport depend of many factors: the quality of the fuel, the condition technical of the means of conveyance, and the condition of the road network.

Will the next century see the private sector become more involved in decisions regarding the construction and funding of infrastructure? Which technologies will dominate the transport market? Where will new markets emerge? Will transport still have a social role to play? What safeguards will there be for the environment? Will there still be a role even for the authorities? The list of the questions that transport will pose in the next century is certainly both long and diverse, reflecting as it does the problems now confronting the sector. Road freight transport for own account represents a major share of inland transport in Europe and, depending on the country concerned, accounts for two to five times the tonnage carried by rail. Despite its importance, however, own account transport tends to be overlooked since it is not regarded as a logistics activity, whereas it is, in fact, a vital transport function that is changing radically as firms increasingly outsource their distribution activities to commercial haulers.

Figure 1. Energy consumption of transport relative to GDP-year 2000=100% in Romania and EU

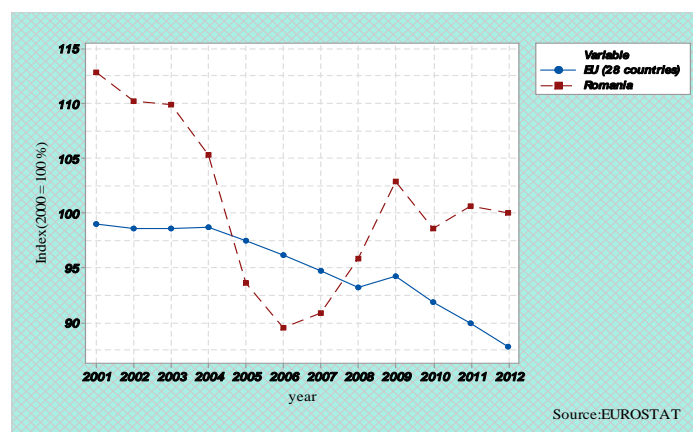
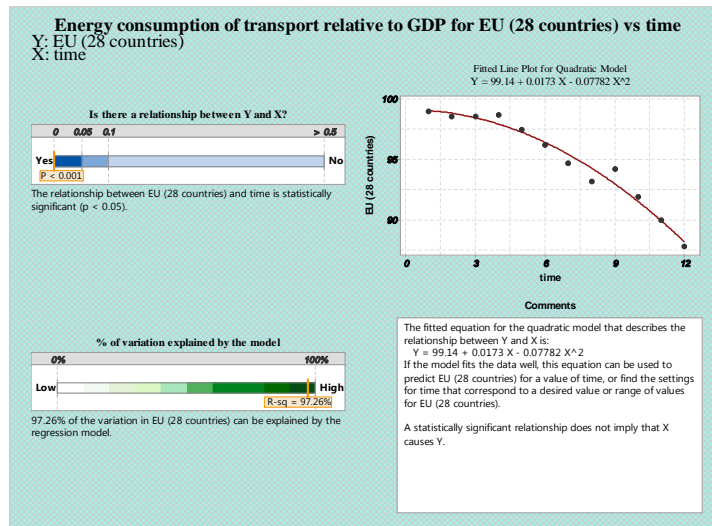


Figure 1 presents the evolution of the consumption of energy from the sector of transport related to GDP, as the shape of the indexes with fix basis in 2000 year, in Romania and to the level of the European Union. Generally speaking, as it could be noticed, the level is higher in Romania, comparatively to the consequences

of this energy consumption, respectively in the ever higher level of the pollution. The technical stage and the moral wearing out of the means of conveyance there are also factors which generate such a situation.

Figure 2. Energy consumption of transport relative to GDP for EU vs time 200-2012

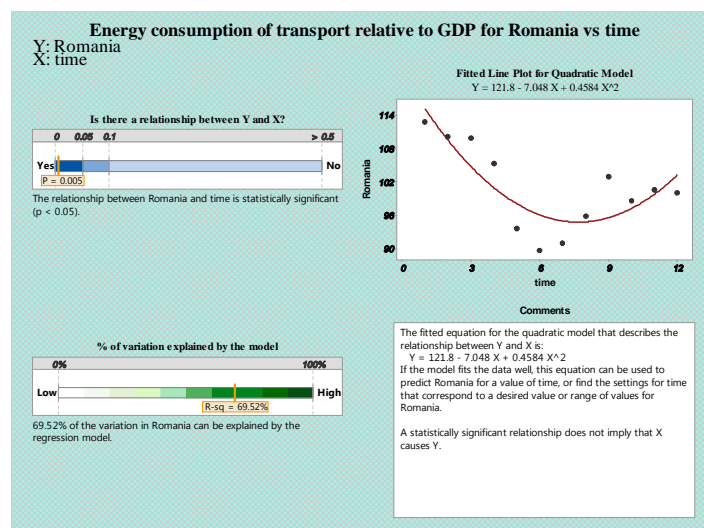


Sources: EUROSTAT

The figures number 2 and 3 reflect the evolution of the consume of energy in Romania and European Union, depending on time, between 2001 to 2012 years. As it

noticed, the evolutions could be shaped by the parabolic functions, which are fully explained in the Wright part of the both figures.

Figure 3. Energy consumption of transport relative to GDP for Romania vs time 2001-2012



Another finding is that the dependencies between the energy consumption from the activity of transportation related to GDP, and the evolution of the time are significant from the statistical point of view.

4. Conclusions

This research reveals the fact that the transportation process affects the environment in a worrying manner. And what results from statistics is that in Romania this situation is worse than comparative to the European

Union. This means an awareness of the problem, in order to try to solve it positively.

References

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Endnotes:

[1] GDP - Gross Domestic Product

[2] Redfield, G. W. for Journal of the American Water Resources Association.