

Environmental responsibility of Croatian road freight transport enterprises

Environmental
responsibility
of transport
companies

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Abstract

Purpose – The purpose of this paper is to investigate corporate environmental responsibility of Croatian road freight transport companies. Additionally, enterprises' ecological responsibility is established in relation to company size.

Design/methodology/approach – Primary data was collected through a questionnaire. For this research, 150 Croatian road freight companies were randomly selected, of which 58 completed the questionnaire. Regression and variance analyses were conducted to analyse the data.

Findings – The findings of the study revealed that the companies' level of ecological sustainability reflects their established organisational culture. Companies with more employees and higher revenues had a higher level of ecological responsibility.

Research limitations/implications – Due to the small sample size, the generalisability of the results is questionable. The results of the primary research confirmed that as the company size increased, so did its established organisational culture regarding ecological sustainability. A higher level of ecological sustainability would provide better financial results and other advantages for small companies.

Originality/value – The theoretical contribution of the paper is presented in the literature review, which provides a summary of the importance of establishing sustainable policy for transport companies. Due to the creation of the Croatian road freight market and pressures created by new competitors from the other member countries of European Union, Croatian road freight companies must understand the positive connection between ecological sustainability and an established organisational culture.

Keywords Road freight transport, Ecological sustainability, Environmental care, Environmental protection policy, Organisational culture, Croatia

Paper type Research paper

Introduction

In addition to the positive impacts of the intensive development of industry, it has created numerous negative effects, which are primarily linked to pollution and environmental endangerment. These negative effects are characterised by the exponential growth of problems related to global warming and air, water and soil pollution (Bagur-Femenias *et al.*, 2013). The necessity of sustainable development has long since been accepted. In its essence, sustainable development represents an attitude of compromise; it is the balance between economic development, satisfying the needs of the population and preserving the environment (Aversa *et al.*, 2016).

We are witnessing daily the negative impact of humans on the environment, especially the consequences of global warming. This has increased concern among societies, enterprises and individuals regarding protection of the environment, especially from the negative effects



of industry. Therefore, states and other various stakeholder groups have begun to exert strong pressure on business entities to be ecologically responsible. Some countries (e.g., Denmark, Japan, the Netherlands, etc.) have created regulations requiring business entities to publish information on their environmental impact (Kolk, 2003). Transportation activities represent one of the largest sources of pollution in the environment (Dyrhaug, 2014).

Transportation, including storage, loading and unloading, is one of the most important components of logistics. Logistics, and especially transport, began to gain importance in the early 1970s with the emergence of globalisation, internationalisation and concentration in the world economy. As a result, logistics has earned a significant and important place in the economy, but unfortunately, it is becoming one of the largest sources of pollution and environmental hazards, especially in the case of transportation.

While the Eurovignette Directive of 2011 (European Parliament and Council of the European Union, 2011) was established to strengthen the integration of environmental policy, it did not contain the necessary concerns about the environmental pollution caused by traffic. Namely, in the negotiations about the adoption of this directive, focus was on national economic priorities rather than environmental protection due to the economic crisis at that time. Unfortunately, this aspect is only taken as a possible option, as well as the whole of this directive (Dyrhaug, 2014). This decision should be taken into account in the context of the research conducted 10 years earlier. Namely, the literature presents different approaches to sustainable development and economic crises. According to Tampakoudis *et al.* (2014), in the context of the global financial crisis, the idea of sustainable development is an exceptional opportunity that could lead to significant economic achievements.

Thus, a business entity's successful environmental conservation is reflected in cost reduction, which positively influences the performance of the business. States and their governments prescribe and take different measures and activities to protect the environment, which can be adopted by individual business entities as well. Many businesses have become successful at environmental management thanks to the implementation of ISO 14001 (Grandic, 2017). The ISO 14000 family of standards provides practical tools for companies and organizations which are looking to manage their environmental responsibilities. Those standards are developed by ISO Technical Committee ISO/TC 207 and its various subcommittees (International Organisation for Standardisation, N/A).

According to increasing institutional pressures around the world for the implementation of sustainable transportation solutions, this paper focuses on the importance of the implementation of adequate sustainable policy. The European Commission (2011, p. 5) set a goal to reduce greenhouse gas emissions from transport to 20 per cent below the 2008 level, which reveals the importance of demonstrating the advantages of investments in sustainable measures to road freight companies. Thus, the aim of this paper is to examine the level of ecological sustainability as a reflection of the established organisational culture for road freight transport companies in the Republic of Croatia.

Literature review

Despite the positive effects of the industrial revolution, it had many negative results related to environmental pollution and human health threats. In this sense, the twentieth century was characterised by concern for the environment at the global, regional, national and local levels (Cadwell, 1990). The world is facing ever-increasing problems associated with the emission of harmful gases into the atmosphere, the accumulation of waste, the exhaustion of natural resources, and the limited supply of energy from sustainable sources. It has long been clear that air pollution resulting from transportation causes increased respiratory and cardiovascular diseases in urban areas. Cumulative exposure to such air pollution reduces life expectancy and increases mortality (Pope *et al.*, 1995). In 1998, Ciccone *et al.* conducted

research on the problem of the airborne pollution caused by transport and confirmed the direct link between the occurrence of respiratory illness and the proximity of heavy vehicles and trucks. The assessment of the effects of airborne pollution on human health in Austria, France and Switzerland 19 years ago found that air pollution caused 6 per cent of the total deaths in these three countries, or over 40,000 deaths per year (Künzli *et al.*, 2000).

The negative impact of transport on the environment is manifested primarily through increased greenhouse gases, atmospheric pollution and negative noise impacts. Thus, many countries are trying to prevent and reduce environmental pollution caused by transportation and other logistics activities. Legislative regulations seek to stimulate economic entities to conceptualise their logistics chains and systems so that their organisational flow of people and goods has the least negative impact on the environment.

In the European Union in 2016, the two industries with the highest share of greenhouse gas and CO₂ emissions were energy (26.9 per cent) and transport (24.3 per cent) (European Commission, 2018). In comparison, in 1990, the transport sector's share was 14.97 per cent, making its 2016 share almost 10 percentage points higher (European Commission, 2018, p. 127). Road transport had the highest share at 72.0 per cent, while railway transport had the lowest share at just 0.5 per cent (Table I).

It is understandable that different means of transportation, transport speed and the frequency of goods overload have different impacts on the environment. Economic development and the application of new technologies to mobilise people and commodities has increased dramatically in the last few decades. Thus, transportation has likewise developed. There are many different aspects of transport infrastructure in regards to the required means of transport, the level of investment, the specificity of particular activities and the volume and intensity of each type of transport. It is therefore difficult to conceive a unique management system that will yield satisfactory results for all business entities involved in transport. However, the fundamental issue is the negative impact of different types of transport on human health, land, climate, ozone, etc. To achieve long-term sustainable development, new demands must be placed on these businesses.

In this respect, the European Union has developed a variety of policies to reduce the negative impact of transport on the environment. However, as the actual effects and benefits of such policies are small or almost non-existent, the European Union also needs to intensify and insist on environmental policy integration. Integrating environmental policy is defined as incorporating environmental goals into all stages of policy making within the non-environmental sector (Lafferty and Hovden, 2003). The reason for the weak success of such policies lies in the fact that most of the attempts to effectively implement environmental protection policy related to transport have encountered strong resistance from economic operators involved in this industry. Their main justification is that the transport industry will lose competitiveness, especially in the context of an economic crisis. It is clear that conflicts between economic interests and environmental protection persist. Unfortunately, economic

	Greenhouse gas emissions	CO ₂ emissions
Civil aviation	13.3%	13.38%
Road transport	72.0%	72.00%
Railway transport	0.5%	0.51%
Navigation	13.6%	13.63%
Other transportation	0.5%	0.48%
Total transportation		

Source: European Commission (2018, p. 137, 150)

Table I.
Greenhouse gas
emissions and CO₂
emissions from
transport, by mode,
EU-28 in 2016 (%)

interests are most likely to win, and thus protection of the environment is not given the appropriate amount of attention (Dyrhaug, 2014).

Generally speaking, there is a serious conflict between the implementation of new expensive transport technologies (i.e., logistics) that are environmentally acceptable and those existing transport technologies that pollute the environment in large quantities but are cheaper and more economically advantageous in the short term. The main challenges regarding environmental protection today are related to the reduction of CO₂ emissions and the gradual replacement of fossil fuels with energy sources that are far less harmful to the environment. Additionally, transport is the main source of noise pollution in Europe. The noise level is constantly increasing as the number of vehicles, amount of time spent driving, strength of the engine, size of the aircraft and other related factors increase. Noise is the only environmental protection factor for which complaints have been increasing since 1992 (Mahalingam and Ramesh, 2013).

This necessitates the development and introduction of modern vehicles with reduced emissions of particulates and gaseous pollutants as well as less noise. Thus, innovative technologies and additional investments are needed. Since trucks are one of the largest polluters of the environment, the European Parliament and Council of the European Union adopted the Eurovignette Directive in 1999 to charge a toll on trucks. This directive utilised the “user pays” principle. This directive was revised in 2006 to include noise and air pollution and was based on the principle of “polluter pays” (European Parliament and Council of the European Union, 2006). Unfortunately, these directives were insufficient in contributing to the integration of environmental policy, and further steps were needed to reduce the negative impact of transport on the environment. Consequently, the adoption of a new Eurovignette Directive was launched in 2011 with the aim of strengthening institutional reforms within the European Union to integrate environmental policy (European Parliament and Council of the European Union, 2011). The main goal was to further reduce the environmental damages caused by transport. Although the adoption of the Eurovignette Directive in 2011 reinforced the integration of environmental policy, it also has failed to meet expectations. Namely, the allocation of revenue for investment in sustainable transport was one of the central aspects linked to environmental protection and traffic in this document prior to its adoption (Dyrhaug, 2014).

Over time, many methodologies based on different indicators have evolved to determine the levels of sustainable development in each country. Various types of indicators are used for this purpose, including the Composite Index of Environmental Performance (García-Sánchez *et al.*, 2015), Economic Performance Index (International Monetary Fund, 2013) and Environmental Performance Index (Esty *et al.*, 2008), etc. Of course, when determining the level of sustainable development in a particular country, it is necessary to adapt the methodology that best reflects the actual state of environmental protection (Neumann *et al.*, 2018).

Many business entities investing in environmental protection and the introduction of the ISO14001 system perceive it as a strategy rather than a cost. They consider it a decision that leads them to business success in the long run (International Organisation for Standardisation, 2015). In the same way, the business environment considers those companies to be a prospective and business-friendly business entity that incorporates a mechanism reflecting high awareness of environmental protection and conservation. Environmental indicators are used to define the level of environmental protection for a particular business entity. These indicators are a set of variables that determine the actual efficiency and productivity of environmental management in a particular business entity (Jasch, 2000).

The indicators of environmental activities and performance can be divided into two basic groups. The first group consists of environmental operational indicators, which include environmental site planning, energy consumption, maintenance of equipment, air pollution control, noise pollution control, water pollution control and waste pollution control. The

second group consists of environmental performance indicators, which include the site environment, regulatory compliance and auditing activity.

It is important to understand the implications of introducing ISO 14001 on a business entity's competitiveness, cost efficiency and performance. There are numerous papers in the literature indicating that the introduction of ISO 14001 has not only had a positive impact on the environment but also on different business segments. For example, the introduction of ISO 14001 can increase customer satisfaction (Hui *et al.*, 2001) and customer loyalty (Chittaie, 2012), which are important for the success of any business entity. Further, introducing ISO 14001 increases the market share of a commercial entity (Tan, 2005). Successful environmental management thanks to the implementation of the ISO 14001 system reduces waste; raw material consumption; and electricity, water and gas use, which reduces costs and increases the quality of products and services (Zutshi and Sohal, 2004). Additionally, the introduction of ISO 14001 has had a positive impact on business reputation and has increased the profitability of some business entities (Sambasivan and Fei, 2007). King and Lenox (2001) proved that the reduction of greenhouse gas emissions, air pollution, etc. has a positive impact on cost reduction and business success.

Transport is a specific economic discipline with unique characteristics and activities that present difficult obstacles to daily management. This applies in particular to supply chains made up of numerous parts, sources and modes of transport. It is clear that business entities dealing with transport and logistics can only manage those aspects of environmental protection they can influence and control. In that sense, for them to successfully enact environmental protection measures, they must harmonise transport facilities with environmental protection operations. Like-wise, they should continuously evaluate risks and responsibilities related to environmental protection. Business entities involved in transportation must also identify key environmental issues that need to be solved. It is important to continually develop business strategies and operations that will contribute to better environmental protection. Goals need to be constantly monitored, revised and improved. The characteristics and specificity of the environmental management system depends primarily on the specific problem, the risks, the responsibilities and the geographic environment in which business entities that deal with transport operate.

In the context of its application to the transport industry, ISO 14001 offers three categories of indicators for measuring environmental performance. The first category is comprised of indicators of environmental conditions. These indicators contain data that enable a better understanding of the (potential) impact of traffic operations on the environment. The second category includes management performance indicators. The leaders of traffic business entities use this information to achieve the most efficient transport operations in terms of environmental protection. The third category consists of operational performance indicators. These indicators allow for the recognition of the most significant environmental impacts associated with traffic operations. One of the most important characteristics of these indicators is the fact that they allow for the comparison of measurable data between the transport entity's environmental goals and its achievements. Additionally, these benefits are reflected in improved transport and supply chain management methods. A successful environmental management system will increase the satisfaction of all its stakeholders. The introduction of a successful environmental management system will reduce capital costs, investments and intermodal supply chains (Rodrigue *et al.*, 2013).

Materials and methods

This chapter presents a more detailed analysis of the research instrument, the goals of the primary research, and the characteristics of the research sample.

Research instrument

The participants filled out the questionnaire on corporate environmental responsibility, which was designed for the purpose of this research and modelled after earlier domestic and foreign scientific studies (Harris and Crane, 2002; Bansal, 2005; Gallo and Christensen, 2011; Hörisch *et al.*, 2014; Knight *et al.*, 2018). The questionnaire consisted of 28 questions divided into four sections. In the first section, there were two closed-ended questions regarding the number of employees and revenue in the last year with the aim of gathering information about the company. The eight statements in the second section of the questionnaire evaluated the level of ecological sustainability in the company. The third section consisted of 15 statements and investigated the established organisational structure regarding sustainable business development. The questionnaire ended with three closed-ended questions about the respondents' attitudes towards the benefits gained from environmental care, the focus the environmental protection policy holds and their attitudes towards the benefits derived from introducing the ISO 14001 Certification. The questionnaire was used as the research instrument, and the primary research was conducted in October and November 2018. The questionnaire was designed in Google docs to simplify the process of responding to it and to ensure better responses from the target group. The questionnaire was distributed via e-mail.

Regression analysis and analysis of variance (ANOVA) were used for data analysis. The data were analysed with the use of Excel, EViews Software Package and SPSS version 22.0.

Primary research goal

The goal of the primary research was to establish:

- (1) The connection between the level of ecological sustainability and the organisational culture in road freight transport companies in the Republic of Croatia,
- (2) The segment that gained the most attention from the respondents regarding environmental protection,
- (3) Whether there are differences in the established organisational culture of sustainable business regarding the companies' sizes and revenues and
- (4) Whether there are differences in the level of ecological sustainability regarding the companies' sizes and revenues.

Research sample

Road transport dominates freight operation in almost every country in the world, including Croatia. Additionally, road transport is the leading cause of pollution within the transportation sector. Thus, the focus of the primary research was Croatian road freight companies. In Croatia, this market is mostly comprised of micro companies. Of the 2,788 active companies in 2018 (those that provided financial statements for the previous year), 2,326 were micro companies (Bismode, 2019). For this sample, 150 companies were randomly chosen, and 58 of these filled out the questionnaire. As previously mentioned, the first section of the questionnaire consisted of two closed-ended questions aimed at classifying the company according to the number of employees and its revenue in the previous year. The sample structure of the listed indicators is presented in Table II.

Table II shows that in 2017, 46 (79.30 per cent) of the respondents generated revenue below 8.04 million EUR, while only 8.62 per cent of the companies generated over 33.51 million EUR. It is evident that the sample consisted of mostly small companies, as 77.59 per cent of the companies had fewer than 50 employees. Only eight (13.79 per cent) large companies (50–250 employees) participated in this survey.

Results

Since one company did not answer the question about the benefits that could be achieved by adopting environmental protection policies, Figure 1 shows the distribution of 57 responses. Most companies ($n = 32$; 56.14 per cent) highlighted the positive contribution of environmental policy on the company's image. Only three respondents (5.26 per cent) noted that environmental protection activities resulted in better quality products and increased profitability.

The low number of respondents who mentioned increased profits is interesting considering that recent research confirmed a positive correlation between environmental protection policy and business efficiency (Andries and Stephan, 2019). As evidenced in Figure 2, regarding the framework of environmental protection, seven respondents (12.28 per cent) focused their attention on rational energy consumption. Like-wise, seven companies listed natural resources preservation and advancements in the efficiency of the environmental protection process as the most important focus.

Ecological sustainability and the establishment of organisational culture

Sustainability is often related to the development of a green culture in companies' business plans (Harris and Crane, 2002). Environmental behaviour and responsible resource management characterise successful companies (Knight *et al.*, 2018). Thus, the following hypothesis was formulated: A Croatian freight transport company's level of ecological sustainability is a reflection of its established organisational culture. Therefore, the dependant variable (the level of ecological sustainability) was determined based on the answers to eight statements. While the independent variable (the establishment of organisational culture) was measured based on the answers to 15 statements (see Table III).

The normality of the distribution of the residuals in the regression model of the level of ecological sustainability and established organisational culture was tested. Considering that the empirical level of significance was 0.4489, which is greater than the significance level of

Revenues in 2017 (EUR)			Number of employees in 2017		
Categories	Number of companies	%	Categories	Number of companies	%
to 8,042,895	46	79.3%	< 50	45	77.59%
8,042,895–33,512,064	7	12.06%	50–250	5	8.62%
more than 33,512,064	5	8.62%	≥ 250	8	13.79%

Table II.
The sample structure
regarding the revenues
and the number of
employees in 2017

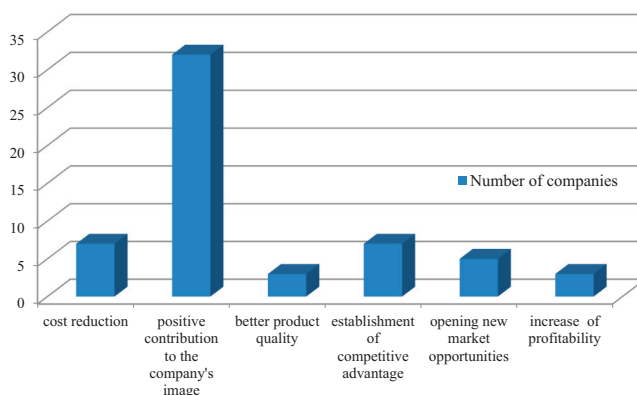
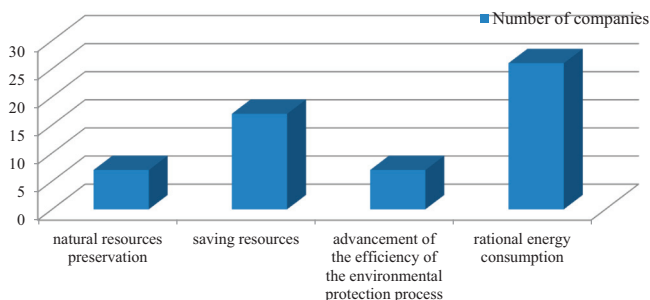


Figure 1.
Respondents' attitudes
regarding benefits of
environmental
protection policy

$p < 0.05$, the null hypothesis was not rejected. Thus, it is implied that the errors of correlation were normally distributed. Figure 3 shows that the value of skewness was -0.01495 (i.e., mild negative asymmetry). The value of kurtosis was 2.1864 , which shows that it is a shorter distribution and tails are thinner than the normal distribution.

Figure 2. The most important segments of the environmental protection framework according to the respondents



Dependant variable	Independent variable
Item 1: Your company has defined goals for environmental management within its annual and multiannual plans.	Item 1: Your company has adopted measures for energy consumption reduction.
Item 2: Your company has appointed a person responsible for environmental activities.	Item 2: Your company applies measures for water consumption reduction.
Item 3: Your company has financial resources allocated specifically to achieving the goals regarding environmental management.	Item 3: Your company uses electric and hybrid vehicles to reduce the negative influence of transport on the environment.
Item 4: In your company, there is a special organisational unit that deals only with the activities connected with environmental protection.	Item 4: Your company applies measures for reducing fuel consumption.
Item 5: Your company has clearly defined measures for waste reduction.	Item 5: Your company disposes of tyres, batteries, lubricating oils, vehicles and transport packaging in accordance with responsible environmental management.
Item 6: Your company systematically/occasionally conducts an analysis of its impact on the environment	Item 6: Your company monitors the influence of your products/services on the environment.
Item 7: Your company has adopted ordinances on sustainable development and environmental protection.	Item 7: When choosing a business partner, your company takes into consideration their attitudes towards the environment.
Item 8: Your company has implemented an environmental management system.	Item 8: In the last three years, your company has not had a complaint from an inspection or any other supervising authority regarding environmental protection.
	Item 9: Your company possesses vehicles that have the lowest air pollutant emissions.
	Item 10: Your company has the ISO 14001 Certification.
	Item 11: Your company is considering additional investments in green management.
	Item 12: Your company has won an award or acknowledgment for efforts in environmental protection.
	Item 13: Your company makes sure the public, your customers, suppliers and other participants are aware of the importance of environmental protection.
	Item 14: Your company is a member of a business organisation that promotes environmental protection.
	Item 15: Your company uses a system of awards for employees regarding waste reduction and environmental protection.

Table III. Structure of the dependant and independent variable

To determine the predictive accuracy, the coefficient of determination (R^2) is most commonly used. This coefficient shows the percentage of explained variance in connection with each of the latent variables (Hair *et al.*, 2017). Regarding this study, the coefficient showed a satisfactory predictive accuracy ($R^2 = 0.316$). The values of the regression analysis (see Table IV) demonstrate that the established organisational culture is significant for interpreting changes in the level of ecological sustainability. The value of the coefficient was $\beta_1 = 0.805$, which represents the positive influence of the established organisational culture on the level of ecological sustainability. Considering that organisational culture was significant in the regression model, the hypothesis was accepted.

Differences in respondents' attitudes based on company size

Table V shows that there is a significant correlation between the established organisational culture and the observed indicators of the company's size. It can therefore be concluded that

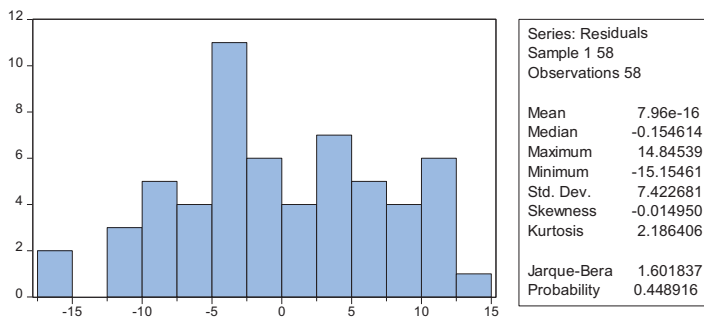


Figure 3.
The normality of the distribution of the residuals in the regression model of the level of ecological sustainability and established organisational culture

Dependent variable: The level of ecological sustainability
 Method: Least Squares
 Date: 07/08/19 Time: 16:36
 Sample: 1 58
 Included observations: 58
 HAC standard errors and covariance (Bartlett kernel, Newey–West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.15461	1.501866	10.09052	0.0000
Established organizational culture	0.804899	0.119008	6.738204	0.0000
<i>R</i> -squared	0.315891	Mean dependent var		19.75862
Adjusted <i>R</i> -squared	0.303675	S.D. dependent var		8.974252
S.E. of regression	7.488662	Akaike info criterion		6.898531
Sum squared resid	3140.483	Schwarz criterion		6.969581
Log likelihood	-198.0574	Hannan-Quinn criter.		2.037335
<i>F</i> -statistic	0.000004	Durbin–Watson stat		45.40340
Prob(<i>F</i> -statistic)	0.000000			

Table IV.
Regression model of the influence of the established organisational culture on the level of ecological sustainability

companies with revenues over 8.04 million EUR[1] and more than 50 employees had considerably greater established organisational culture regarding business sustainability.

Also, there was a significant correlation between the level of ecological sustainability and the observed indicators of the company's size. As shown in [Table VI](#), the companies that generated revenues over 8.04 million EUR and had more than 50 employees had considerably higher levels of ecological sustainability compared to companies that generated revenues below 8.04 million EUR and had fewer than 50 employees.

Therefore, it can be concluded that companies focus more attention on business sustainability and the establishment of organisational culture than on ecological responsibility. This is in line with the results of the study conducted by [Gallo and Christensen \(2011\)](#), who pointed out that the company's size influences its support of positive sustainability behaviours. Additionally, [Hörisch et al. \(2014\)](#) remarked that as a firm grows in size, its support of eco-friendly policy increases. They also highlighted the fact that the size of a company positively affects the application of sustainability strategies. This is in accordance with the findings of [Knight et al. \(2018\)](#), who indicated that management's decision to enact eco-friendly policies in small and medium-sized enterprises is highly influenced by their attitudes. Due to the benefits of adequate sustainable policy, small companies should invest more in this area.

Discussion, conclusion and recommendations

Transport of every type (road, water, rail and air) is one of the largest consumers of fossil fuels and therefore one of the largest contaminators in the world. Thus, this study focused on corporate environmental responsibility of Croatian road freight transport companies. The goal of the primary research was to establish the connection between the level of ecological sustainability and the organisational culture in road freight transport companies in the Republic of Croatia. The findings of the study revealed that there was a significant positive correlation between the level of ecological sustainability and the established organisational culture. The values of the regression analysis demonstrated that an established organisational culture is significant for interpreting changes in the level of ecological

Table V.
The variance analysis of the established organizational culture and the size of the company

		N	Mean	Std. Deviation	Sig. (2-tailed)
established organizational culture/total revenues	< 8.04 million EUR	46	3.913	4.092	0.0000
	≥ 8.04 million EUR	12	12.750	8.303	0.00362
established organizational culture/number of employees	< 50 employees	45	4.000	4.523	0.00003
	≥ 50 employees	13	11.769	7.886	0.00423

Table VI.
The analysis of the level of variance of ecological sustainability and the company's size

		N	Mean	Std. Deviation	Sig. (2-Tailed)
established organizational culture/total revenues	< 8.04 million EUR	46	18.0652	8.40212	0.00396
	≥ 8.04 million EUR	12	26.2500	8.40049	0.00788
established organizational culture/number of employees	< 50 employees	45	18.0000	8.46114	0.00451
	≥ 50 employees	13	25.8462	8.26485	0.00713

sustainability. Croatian road freight transport companies pay more attention to business sustainability and the establishment of organisational culture that ecological responsibility.

The first part of the primary research was aimed at learning more about the type of company in terms of the number of employees and revenue. The results showed that there was a significant correlation between the established organisational culture and the observed indicators of the company's size. Furthermore, companies that had revenues over 8.04 million EUR and more than 50 employees had considerably greater organisational culture regarding business sustainability. It is clear that increased size prompts firms to support positive behaviours towards sustainability. Furthermore, the size of a company positively affected the application of sustainability strategies, which is in line with the previous research (Gallo and Christensen, 2011; Hörisch *et al.*, 2014; Knight *et al.*, 2018; Andries and Stephan, 2019). Within the framework of environmental protection, the segment that gained most attention from Croatian road freight transport companies was rational energy consumption. It was also evident that the other important segments were natural resources preservation and advancement in the efficiency of the environmental protection process. Regarding the benefits that could be achieved by adopting the environmental protection policy, most companies highlighted the positive contribution to the company's image. Surprisingly, only a few of them mentioned better quality products and increased profitability. Because the Croatian road freight market is characterised by numerous small companies and increased pressure from foreign competitors, this research can be useful for managers in those companies. Positive connection between level of ecological sustainability and established organizational culture has been confirmed, so small companies should not be more afraid of investing money in establishment of organizational culture which puts focus on sustainability. Small companies, which represent more than 77 per cent of Croatian road freight market, should invest more in this area.

It is recommended that a similar study be conducted in all countries of the Central and Eastern Europe (CEE) region to determine the differences between them. Additionally, it would be useful to examine the differences in the levels of ecological sustainability regarding whether the road freight company operates only in its home country or provides services in other countries.

Note

1. It has been used average annual rate EUR/HRK for 2017. 1 EUR = 7.46 HRK

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