

ASSESSMENT OF E-TRADE IN GLOBAL ENVIRONMENT

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Abstract. The article analyses the topic of e-trade assessment in a global environment. To achieve the objective, a detailed analysis of scientific works was carried out in order to identify the importance of e-trade assessment in a global environment and, by removing the identified limitations, to develop a model of e-trade evaluation applicable to a global environment. The empirical research was based on the developed e-trade evaluation model to test its effectiveness and applicability in a global environment. Based on the data collected, a multi-criteria assessment of e-trade was carried out, dividing the factors into five dimensions: emotional (consumer satisfaction and trust), technological (internet accessibility, data security and privacy), financial (e-GDP, e-trade sales, impact of e-trade on overall company turnover), social (internet usage and purchasing volumes) and tax environment (VAT), and a comparative analysis of the countries to compare the results of economically similar countries, to find out why the market leaders are performing so well in the e-trade sector, and to identify the methodologies and practices used in these countries, so as to identify the most effective methods and practices that can be applied in other countries. The results of the multi-criteria assessment allowed European countries to be classified into three groups: from market leaders to the most laggard countries. The strongest growth rates are found in Romania and Bulgaria. It is worth noting that e-trade is also unpopular in Southern European countries: Greece, Portugal, Spain, Italy, Malta, Cyprus.

Keywords: e-trade, globalization, global economy, e-trade assessment models.

JEL Classification: F130, F010, F640, R110.

Introduction

Today, the internet is becoming an integral part of everyone's life and business life. During the COVID-19 pandemic, more and more operations are moving online, giving businesses the ability to reach their customers on a global scale and helping to reduce geographic boundaries. According to Huirong (2014), e-trade is changing the world's business model, influencing corporate governance, consumers' purchasing habits and becoming a key driver of economic growth. E-commerce helps to break down time and space constraints, connects producers and consumers, and allows all business processes to be moved online, from signing a contract, ordering a product, to payment. However, the increasing use of information and communication technologies makes it increasingly difficult to assess the effectiveness of e-trade. The assessment of e-trade needs to be carried out in the light of

changes and trends in the global economy. This paper explores the issue of what factors are necessary to assess e-trade performance and what is the importance of applying e-trade assessment models in a global environment? The aim of the paper is to examine the importance of e-trade in the global economic environment and to develop an e-trade evaluation model based on different theories of evaluation models and to demonstrate the applicability of the model in a global environment. The theoretical significance of the study is that based on the analysis of research papers on e-trade, the importance of e-trade valuation in a global environment is identified and, after removing the identified limitations, an e-trade valuation model is developed that is applicable to a global environment. Practical significance of the study: the assessment of e-trade based on the developed model is carried out, and the possibilities of the model's application in the global environment are identified.

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1. Literature review

Defence expenditure as a part of government spending may serve to influence economic development in various ways. e-trade becomes an increasingly important phenomenon in the global business world. According to Murphy and Bruce (2003), the development of e-trade is important because it helps to improve the efficiency of the overall market, facilitating accessibility and market entry.

The academic literature uses various terms to describe e-trade: online trade, electronic commerce (e-commerce), electronic commerce (e-trade), etc. It is worth pointing out that the most commonly used term is “e-trade”, which does not have a single and precise definition (Table 1).

Table 1. Concept of e-trade (source: composed by the authors)

Author	Concept of e-trade
Villa et al. (2018)	E-trade is defined as a useful tool for bridging the economic gap between countries, and acting in the form of buying and selling goods over the internet.
Longo and Yonah (2017)	E-trade is the buying and selling of goods or services over the Internet. It can also be described as the transfer of funds or data over computer networks – the Internet.
Khan (2016)	E-trade is the buying and selling of goods or services over the Internet. However, e-trade does not only cover the process of buying or selling, as nowadays most people use the Internet as a source of information to compare prices or to check the latest product offers before purchasing these goods online or in a traditional shop.
Khan et al. (2014)	E-trade is the sale and purchase of goods or services over the internet, with a focus on digitally-based transactions between businesses and consumers. In e-trade, the process of value exchange is important (it is a prerequisite), as no commercial transaction can take place without value exchange.
Gangeshwer (2013)	E-trade is the sale of goods or services through an electronic system such as the Internet or other computer networks.

In the most general sense, e-trade is defined (Gangeshwer, 2013; Khan et al., 2014; Longo & Yonah, 2017; Villa et al., 2018) as the buying and selling of goods or services online. Other authors (Nanehkaran, 2013; Georgiadis et al., 2013; Khan, 2016) define e-trade in a broader sense that it is not only the buying and selling of goods or services online, but the concept encompasses the whole process from the description of the product, the posting of pictures on the internet, up to the point where the consumer receives the goods.

The economist Fisher (2009) defines e-trade as the conduct of business transactions using electronic

media and communication. The author stresses that trade should be mutually beneficial for both the seller and the buyer and should lead to a productivity curve. He also argues that e-trade should not be equated with the concept of electronic data interchange (EDI), but should be understood in a broader sense, as it encompasses a whole process that involves not only the exchange of data, but also the use of specific tools and technologies. Ravallion (2018) agrees that e-trade is not only about selling or buying, but also about processes such as the security of financial transactions, the preservation of consumer data privacy, and online marketing.

As the use of information communication and technology in business and everyday life intensifies, it is becoming more and more difficult to assess the effectiveness and benefits of e-trade, not only for the business, the country but also for the global economy. For this reason, evaluation is becoming more complex, as it is no longer enough to look at the technological characteristics of a website or customer satisfaction alone, but it is worth looking at the impact of e-trade on a national scale. It is important to assess the applicability of the models proposed in the literature not only at the business level but also at the national or global level (Table 2).

The analysis of e-trade valuation models shows that most of the models described in the literature have a number of limitations. One of the main ones is that the evaluation models only focus on evaluation at company level. In order to achieve an effective evaluation, it is appropriate to include indicators at national level in the evaluation model so that the evaluation can be carried out on a global scale, comparing indicators across different European countries.

When looking at the benefits and drawbacks of e-trade, it has been noted that there is a strong focus on the emotional state of consumers. Emphasis is placed on the importance of consumer satisfaction (Awais & Samin, 2012; Delone & McLean, 2003; Molla & Licker, 2001; Brilliant & Achyar, 2016; Chaffey & Ellis-Chadwick, 2012; Aydın & Savrul, 2014) and trust (Sodžiuūtė & Sūdžius, 2006; Molla & Licker, 2001; Brilliant & Achyar, 2016; Gheiji, 2015; Christensen & Methlie, 2003; European Commission, 2016) in e-trade.

Since e-trade can be understood as the interaction between communication, data management and security systems that facilitate the exchange of commercial information related to the sale of products or services (Nanehkaran, 2013), it is useful to include technological factors in the measurement model for effective e-trade measurement (Totonchi & Manshady, 2012). The literature analysis has shown that the main factors related to technical characteristics of e-trade are security (Awais & Samin, 2012; Quayle, 2002; Brilliant & Achyar, 2016; Huirong, 2014, Chaffey & Ellis-Chadwick, 2012), ensuring privacy (Awais & Samin, 2012; Brilliant & Achyar, 2016; Chaffey & Ellis-Chadwick, 2012), and increasing the reach of the internet (Niranjnamurthy et al., 2013).

Table 2. Comparison of models for assessing e-trade performance (source: composed by the authors)

Model name, author	Advantages	Disadvantages
DeLone and McLeano (2003) IS assessment model	The model incorporates information systems (IS) theory to provide a comprehensive understanding of IS success by identifying, describing and explaining the relationships between the six dimensions that most influence IS success, which are used to assess information systems in general.	The elements of the model only cover the information system aspect, but do not take into account the interaction between humans and information technologies. In 2002, the authors themselves modified the proposed model, changing the individual and organisational effects into network benefits and service quality. The model can only be applied at company level.
Molla & Licker (2001) E-trade assessment model	DeLone and McLean's model of information systems success has been applied to e-trade activities. The model examines the factors that contribute to the success of e-trade.	The model consists only of the interactions between information systems (technologies) and users/vendors, service personnel, but does not take into account other actors in the environment, entities (government). The model can only be applied at company level.
Brilliant and Achyar (2016) E-trade assessment model	The focus is on e-trade customer loyalty. The model shows the factors that influence consumer trust and satisfaction with e-trade.	A strong emphasis is placed on emotional factors that increase customer loyalty (this includes both technical characteristics of the systems and emotional factors), but the model also excludes the influence of other market players and financial indicators. The model can only be applied at company level.
Chaffey & Ellis-Chadwick (2012) Factors influencing customer trust in e-trade	It highlights the key factors and the solutions needed to address one of the biggest problems in e-trade, the customer trust. Even factors such as brand building, community integration, etc. are included.	The model examines in detail the element that affects the success of e-trade, namely building customer trust, but does not identify the specific interrelationships between the identified factors and the external environmental factors. The model can only be applied at company level.
Wen et al. (2003) E-trade assessment model using data envelopment analysis	In addition to indicators measuring the technical performance of the website, the model includes other financial or operational indicators designed to measure the productivity of traders in the ordinary course of business	The model does not include factors such as consumer satisfaction and trust in e-trade (lack of indicators of consumers' emotional satisfaction). The model can only be applied at company or national level (comparing the performance of different companies).

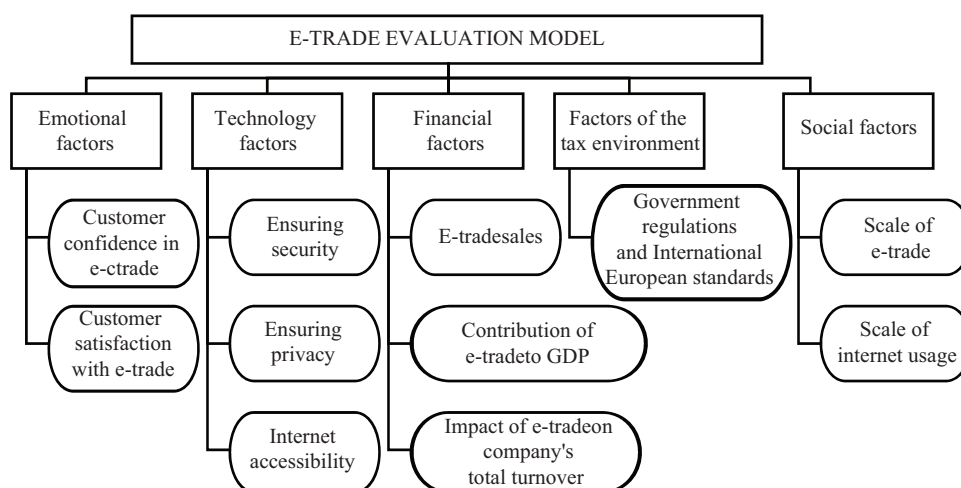


Figure 1. E-trade evaluation model (source: composed by the authors)

The analysis of the assessment models shows that very few models include financial factors in the assessment framework. According to Wen et al. (2003), it is very important to include financial indicators in the e-trade evaluation framework, which are typical for a normal business Marginean (2015).

When examining the benefits, drawbacks and evaluation models of e-trade, it has been observed that only

a small number of authors emphasise the influence of tax environment factors on the effectiveness of e-trade. Awais and Samin (2012), argue that changes in the tax environment, legal framework and regulations can affect e-trade sales.

The authors have grouped the indicators into five dimensions in order to develop a model for measuring e-trade in a global environment (Figure 1).

The model focuses on assessing the overall e-trade sector at national and global level. This allows to assess the potential development of a country. The assessment model proposed by the authors would allow to compare the situation of the country's e-trade sector with neighbouring countries (with similar economic situation), leading and fast developing countries. Such a comparison would make it easier to identify the factors hindering the development of the sector and to draw lessons (reforms, specific actions aimed at promoting e-trade) from leading countries.

2. Methodological approach

To provide a comprehensive assessment of the trends in e-trade performance, its benefits for business and the global economy as a whole, a statistical analysis of EU countries was carried out, looking at five dimensions:

Emotional, which measures trust in e-trade and satisfaction with the product. This part analyses what proportion of the country's population did not buy goods or services online during the period analysed due to a lack of trust in e-trade and what proportion of the country's population did not experience any problems when buying online.

Technological, where the level of internet accessibility, data security and privacy is assessed. It analyses the country's internet accessibility, the number of secure web servers found in the country and the proportion of the population that has experienced fraud when shopping online.

Financial, which looks at the country's financial indicators, such as the share of turnover generated by e-trade revenues, the scale of e-trade sales and the contribution of e-trade to gross domestic product (GDP);

The tax environment, where differences in value added tax (VAT) at country level are assessed.

Social, which looks at the share of potential consumers (untapped market opportunities) compared to the actual number of consumers. It analyses the share of the country's population that uses the internet and the share of the country's population that buys goods online (uses e-trade).

Growth rates, averages and ratios have been calculated to provide a comprehensive analysis of the static data. The following formulae are used for the calculations.

According to Bartosevičienė (2010), the rates of increase (change) are intended to indicate the rate of change of the phenomenon under study. It is the ratio of the absolute change to the value of the time series, which shows by what percentage the value of the attribute in question has increased or decreased in the subsequent period (compared to the baseline). The growth rate for a given indicator x in year t is defined by the formula:

$$x_t = \frac{(Y_t - Y_{t-1})}{Y_{t-1}} \times 100\%. \quad (1)$$

This formula shows the percentage change in the real indicator between year t and $t-1$.

According to Vakrina (2007), the sample mean is calculated using the formula:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i, \quad (2)$$

where n is the number of values.

The analysis is based on data provided by Eurostat, Ecommerce Foundation and the World Bank, Statista.

In order to make a comprehensive assessment of e-trade, a multi-criteria assessment is carried out, consisting of the indicator data evaluated in the analysis of the statistical data. The MULTIMOORA method is used for the study. This method was chosen because the study aims to assess the effectiveness of e-trade at national level. MULTIMOORA avoids subjectivity as it does not require the determination of significance coefficients (weights) for the variables considered Brauers and Zavadskas (2010). The MOORA method consists of two parts: 1) a framework of relationships and 2) a theory of reference point. The relational framework allows for data normalisation and unification between different indicator measurement systems, thus eliminating the need for an external normalisation mechanism. Reference point theory uses ratios calculated by the ratio system method (Baležentis & Baležentis, 2010).

The study assesses the progress of e-trade in European Union countries using the three components of the MULTIMOORA method. Baseline data are written into a response matrix X , where ij – i -th country's j -th indicator ($i = 1, 2, \dots, m$ and $j = 1, 2, \dots, n$; in the study $m = 27$ and $n = 8$). The MOORA system can be applied in two ways: a ratio system and a reference point approach.

The ratio system defines the normalisation of data by comparing the specific value of each indicator against all values of that indicator:

$$x_{ij}^* = \frac{x_{ij}}{\sqrt{\sum_{i=1}^m x_{ij}^2}}, \quad (3)$$

where x is the normalised, unitless j -th indicator of the i -th country. These numbers usually fall in the range $[-1; 1]$. These indicators are then added (if the maximum value is to be achieved) or subtracted (if the minimum value is to be achieved) to obtain the country index:

$$y_i^* = \sum_{j=1}^g x_{ij}^* - \sum_{j=g+1}^m x_{ij}^*, \quad (4)$$

where g – is the number of indicators to maximise. Each country is then given a rank (the higher the index, the higher the rank).

The reference point approach is based on a system of relationships. The values of the normalised indicators are used to find the maximum target reference point (vector) $r_j = \max x_{ij}$ (where the target value is the maximum). Each j coordinate in this vector represents the maximum

value of the criterion. Each element of the response matrix is then recalculated, and the final rank is given to the regions based on the Chebyshev metric and the Min-Max method:

$$\min_i \left(\max_j |r_j - x_{ij}^*| \right). \quad (5)$$

The full product form and MULTIMOORA. This is the MOORA method augmented with the full product form, which involves minimising and maximising the product utility function. The total utility of the i -th alternative can be expressed as a dimensionless quantity:

$$U_i = \frac{A_i}{B_i}, \quad (6)$$

where

$$A_i = \prod_{j=1}^g x_{ij}, \quad (7)$$

$i = 1, 2, \dots, m$ denotes the product of the indicators to be maximised by the i -th alternative and $g = 1, \dots, n$ this is the number of these targets/indicators;

$$B_i = \prod_{j=g+1}^n x_{ij} \quad (8)$$

denotes the product of the indicators to be minimised by the i -th alternative, and $n - g$ is the number of these indicators. After combining the ranks obtained by the MOORA (ratio system and reference point) and the full product form methods, the solution alternatives (states)

are given the final MULTIMOORA ranks (Brauers et al., 2010; Baležentis et al., 2012).

The study was carried out to assess the performance of e-trade in 27 European Union countries over the period 2017 (Luxembourg is excluded due to a lack of statistical data).

3. Research results and discussion

The multi-criteria evaluation method was chosen to apply the model for assessment of e-trade in a global environment formulated in the theoretical part of the study. This study uses an 11-indicator framework comprising indicators identifying five dimensions (Table 3).

Emotional factors include customer satisfaction and trust in e-trade. To measure these factors, Eurostat data on the proportion of the population (in percentage) that did not buy goods or services online in the last year (2017) due to a lack of confidence in e-trade is used, while the satisfaction criterion is best represented by an indicator showing the proportion of the population (in percentage) that bought goods or services online and was satisfied with the product and had no problems with the quality or delivery. As e-trade is the result of technological advances, technological factors, which include internet accessibility and data security and privacy issues, are of great importance in the study of this topic.

Internet accessibility is best described by data collected by Eurostat on the percentage of a country's population with access to the Internet.

Table 3. Multi-criteria evaluation indicator framework (source: composed by the authors)

Dimension	Factors	Indicators	Source
Emotional	Consumer confidence in e-trade	Percentage of the population who have not bought goods or services online in the last year due to lack of confidence in e-trade (%)	Eurostat
	Consumer satisfaction with e-trade	Percentage of the population that did not experience any problems when shopping online, (%)	Eurostat
Technological	Internet accessibility	Internet accessibility (%)	Eurostat
	Ensuring security	Number of secure internet servers (pcs.)	World Bank
	Ensuring privacy	Cyber security, index	International Telecommunication Union
Financial	E-trade sales	E-trade sales, EUR (billion)	Statista
	Impact of e-trade sales on total turnover of the company	Share of turnover generated by e-trade revenues (%)	Eurostat
	Contribution of e-trade to GDP	E - GDP, (%)	Ecommerce Foundation
Fiscal environment	National regulations, international/European standards	VAT - value added tax, (%)	Ecommerce Foundation
Social	Scale of e-trade purchases	Share of the population that buys goods or services online (%)	Eurostat
	Scale of internet usage	Percentage of the population that uses the internet (%)	Eurostat

Security is defined using data collected by the World Bank on the number of secure internet servers per million inhabitants. The privacy factor is represented by data collected by the International Telecommunication Union on a country's cyber security index. To reflect economic factors, we selected Eurostat, the Ecommerce Foundation and Statista collected data on the share of a company's turnover generated by e-trade revenues, the contribution of e-trade to the country's GDP, and the country's e-trade sales volume. As e-trade removes time and space constraints, it increases international cooperation between different countries. For this reason, international standards and government regulations have an important influence on e-trade. It should be stressed that all these regulations are not defined on a statistical basis, but on a legislative basis, and it is therefore very difficult to incorporate these factors into a framework for assessing e-commerce. However, one factor could be the differences in the rate of value added (VAT) across the EU countries, which reflect the feasibility of doing business in different countries. The assessment of social factors

reveals how people's habits influence e-trade. The use of data collected by Eurostat Statistics (2016), reflecting information such as the proportion of people using and buying goods online, allows the proportion of potential and actual customers to be assessed and compared.

The MULTIMOORA multi-criteria scoring method produces ranks that allow the assessment of e-trade in a global environment. The final results are shown in the table below (see Table 4). The results are presented by grouping the EU countries considered into three groups: the first group contains the leading countries, the second group contains the countries with an average performance in e-trade and the third group contains the countries that are the furthest behind the leaders.

The study shows that the leading countries in e-trade globally (EU) in 2017 are the old EU members and the United Kingdom (which joined the EU in 1957 or 1973): Germany, the Netherlands, Denmark, France, Ireland, Belgium, and the Czech Republic and Finland. The UK is a leading country in almost all areas, and according to the results of a study conducted by the Ecommerce

Table 4. MULTIMOORA multi-criteria assessment of e-trade in the EU and UK (source: compiled by authors based on a study carried out)

State	Ratio system		Reference point		Full product form		Sum of ranks	Final rank	Group
	Ratios	Ranks	Ratios	Ranks	Ratios	Ranks			
UK	2.02051	1	0.393135	1	5.2E+13	1	3	1	1
Germany	1.42238	2	0.474411	2	2.7E+13	2	6	2	
Netherlands	1.30139	3	0.735002	5	6.6E+12	4	12	3	
Denmark	1.28130	4	0.771629	7	9.0E+12	3	14	4	
France	1.01362	7	0.498178	3	3.5E+12	6	16	5	
Ireland	1.12612	5	0.809020	13	2.6E+12	7	25	6	
Belgium	0.90932	8	0.793274	9	9.3E+11	9	26	7–8	
Czech Republic	1.12394	6	0.819970	15	3.7E+12	5	26	7–8	
Finland	0.72994	11	0.796202	10	5.6E+11	10	31	9–10	
Sweden	0.70094	12	0.777868	8	4.9E+11	11	31	9–10	
Poland	0.70062	13	0.797645	11	2.5E+12	8	32	11	
Spain	0.57529	17	0.719001	4	2.9E+11	12	33	12	
Italy	0.56247	18	0.739501	6	2.4E+11	13	37	13	
Austria	0.62160	15	0.799513	12	1.6E+11	14	41	14	
Slovakia	0.78758	10	0.834485	19	3.3E+10	17	46	15	
Estonia	0.79948	9	0.836649	25	4.0E+10	16	50	16	
Lithuania	0.60901	16	0.835524	20	1.5E+10	20	56	17	
Hungary	0.51374	21	0.831047	18	2.9E+10	18	57	18	
Greece	0.46609	23	0.818909	14	1.1E+10	21	58	19–21	3
Portugal	0.38875	27	0.820309	16	4.7E+10	15	58	19–21	
Romania	0.49893	22	0.827100	17	2.1E+10	19	58	19–21	
Slovenia	0.64859	14	0.836437	23	7.3E+09	22	59	22	
Bulgaria	0.55939	19	0.835546	21	5.0E+09	24	64	23	
Latvia	0.53177	20	0.836479	24	5.1E+09	23	67	24	
Croatia	0.44413	24	0.836080	22	3.0E+09	25	71	25	
Malta	0.44356	25	0.837542	26	1.1E+08	26	77	26	
Cyprus	0.41710	26	0.837568	27	5.3E+07	27	80	27	

Foundation, the United Kingdom has the largest share of the global market for e-trade, with sales of €197 billion in 2019. Germany is in second place, with sales of €85.60 billion, followed by France with €82 billion. The United Kingdom is the market leader and also leads in terms of E-GDP.

The second group is made up of Sweden, Poland, Spain, Italy, Austria, Slovakia, Estonia, Hungary and Lithuania. Although Spain and Italy are old and strong members of the EU, they may have been in the middle group because of cultural differences: especially in southern Europe, direct communication and contact with the seller or the consumer is very important. For this reason, e-trade is still less popular in these countries.

In the third group, the countries with the slowest progress towards e-trade are the Southern European countries: Greece, Portugal, Malta, Cyprus, the new EU Member States Romania and Bulgaria, which joined the EU in 2007, and Croatia, Latvia and Slovenia in 2013. Although Romania is not the best performer, according to the Ecommerce Foundation (2017) it is the fastest growing market in Europe in recent years.

When looking at emotional indicators (consumer trust and satisfaction with e-trade), the lowest scores were found in the southern European countries: Portugal, Spain and France. In these countries, e-trade is unpopular due to cultural differences specific to Southern European countries. Online shopping is less common in these countries, where communication and physical contact with the interlocutor or seller is very important. The analysis of technological factors has made it possible to assess the number of potential buyers (internet accessibility), the number of secure internet servers and the level of online security and consumer data privacy protection.

The results show that the Netherlands and the UK are the leading countries in terms of internet accessibility, while Bulgaria, Greece and Lithuania have the lowest levels of internet accessibility. Denmark and the Netherlands are the leading countries in terms of the number of secure web servers, while the countries with the lowest number of secure servers are Greece, Cyprus, Spain and Italy, all in Southern Europe. In the Global Cyber Security Index, the UK and France are the leading countries with the lowest scores in Malta and Cyprus. The analysis of financial factors allowed the performance of the e-trade sector to be measured in monetary terms or as a percentage contribution to a country's economy or to a company's profits. The results showed that Ireland and Belgium were the leading countries in terms of the share of turnover generated by e-trade revenues, while Malta and Cyprus had the lowest share. The UK, Denmark and Sweden are the market leaders in terms of their contribution to national GDP. The analysis of the tax environment factors allowed to assess the attractiveness of the country for e-trade development. The lowest VAT rates are found in Malta (18%), Cyprus, Romania and Germany (19%). The highest rates are found in Hungary, where the VAT rate is as high as 27%, and in

Denmark, Croatia and Sweden, where it is 25%. Social factors (internet usage and online shopping) have helped to assess the current situation and to identify untapped market opportunities. The leading countries in terms of the highest number of internet users and online shoppers were found to be the United Kingdom, the Netherlands and the Scandinavian countries Denmark and Sweden. Romania and Bulgaria, which joined the EU in 2007, have the strongest growth rates. The results of the multi-criteria assessment have allowed the 27 EU countries to be divided into three groups: from the market leaders to the laggards. The results showed that the market leaders are the old EU countries: the UK, Germany and the Netherlands, which account for more than half of the global market. The countries in the first group are almost all old EU Member States (those that joined the EU between 1957 and 1973). Lithuania is in the middle group, which may be influenced by the fact that internet access, consumption and purchase rates, while improving, are still low in the context of other countries, which affects the overall e-trade revenue figures. The strongest growth rates were found only in Romania and Bulgaria, which joined the EU in 2007. It is worth noting that e-trade is also unpopular in Southern European countries (Greece, Portugal, Spain, Italy, Malta, Cyprus). The main reason for this is the cultural differences that characterise Southern European countries.

Conclusions

The analysis of e-trade evaluation models shows that most of the models described in the literature have a number of limitations. One of the main ones is that they are only applicable at the company level without taking into account national or global indicators. It was observed that most models only look at the technical characteristics of an e-trade website or at indicators describing the state of the consumer (satisfaction, trust), which help to evaluate e-trade only from the point of view of the consumer or the seller, but do not take into account all the actors involved in the sector: the consumers (buyers), the organisations (sellers) and the government.

Taking into account the shortcomings observed, the authors propose to classify the constituent factors into five dimensions when developing an e-trade evaluation model: emotional (customer trust and satisfaction with e-trade), technological (internet accessibility and security, privacy), financial (impact of e-trade on business turnover, contribution of e-trade to the country's overall GDP, and the scale of e-trade sales), tax environment (government regulation, influence of international e-trade standards), and social (scale of internet usage and purchases). This assessment model allows for an analysis of e-trade at national and global level, comparing countries with each other.

The empirical research was based on a model of e-trade evaluation and looked at the factors that affect its evaluation, which were divided into five dimensions:

emotional, technological, financial, social and tax environment. The results of the multi-criteria assessment allowed European countries to be classified into three groups: from market leaders to the most laggard countries. The results showed that the market leaders are: United Kingdom, Germany and the Netherlands. Lithuania was in the middle group, which could be influenced by the fact that, although improving, internet access, consumption and purchase rates are still low in the context of other countries, which has an impact on the overall revenues generated from e-trade.

The strongest growth rates are found in Romania and Bulgaria. It is worth noting that e-trade is also unpopular in Southern European countries (Greece, Portugal, Spain, Italy, Malta, Cyprus). The main reason for this is the cultural differences that characterise the Southern European countries.

It is proposed that the e-trade assessment model should not only be used to analyse the performance of e-trade in European countries (in a given year), but that the assessment of the relevant e-trade indicators for different periods would allow the level of progress of the countries analysed to be assessed in a given period. It is recommended that the e-trade measurement model be used to analyse different countries or regions of the world. It is proposed to use the results obtained from this assessment for a detailed analysis of countries at a similar level. This would lead to an action plan to improve e-trade performance in a given country or region. It would also help to identify the specificities of the e-trade sector in particular countries or regions that influence the indicators of the assessment.

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