

INTERPLAY BETWEEN COMPETITIVENESS, QUALITY OF LIFE AND CORRUPTION: EMPIRICAL EVIDENCE FROM EUROPE

Bianca Andreea CĂLIN¹ & Valentin Partenie MUNTEANU²

DOI: 10.2478/tjeb-2021-0006

National competitiveness and citizens' happiness are important goals for political leaders. Thus, the need to create and implement systems and processes is arises to ensure public policies, thereby contributing to the sustainable development of a country or community. Globally, despite attempts to achieve satisfactory results on improving living standards, arise obstacles that may alter the finality of the desired results. This paper examines, first of all, the influence of one of the most significant such obstacles, corruption, by examining its relationship with competitiveness. A second direction of analysis is focused on studying how the effects of happiness contribute to the development of national competitiveness. Specifically, the analyses performed on corruption and happiness include various indicators of a political and social nature, being achieved at European Union level and on geographical clusters. The article highlights the importance of the influence of the role of corruption in economic and social life with a strong impact on competitiveness and the level of happiness shown. Corruption, as a mode of action of public institutions, will influence and affect economic results, resulting in the decline of national competitiveness. The analysis of competitiveness data is based on the Global Competitiveness Report for the period 2015 – 2019, the data on the perception of corruption come from the analysis of the Corruption Perception Index and the data on the global happiness from the Global Happiness Report for the same periods. The results show that most of the case, the nations with a low degree of corruption are the most competitive, at the same time showing a high level of happiness of the population.

Keywords: Competitiveness, corruption, happiness index, quality of life

JEL Classification: I15, I25, J17, O44, P51

¹ PhD Student, West University of Timisoara, Romania

² Professor, Department of Management, West University of Timisoara, Romania

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

1. Introduction

“No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable” (Smith, 1776). The expression used by Adam Smith in the "Wages of Labour" chapter of the fundamental work "Wealth of Nations" had the meaning of a paradigm shift in the assessing the workforce and the quality of a society's economy: the wealth of this society is not limited to the quantities of precious metals it holds, but is an image of the overall level of well-being. Thus, the measurement of a nation's prosperity and happiness have become benchmarks by which the level of development of a state, that is national competitiveness, can be determined, which thus depends on a complexity of factors, not just some with exclusively economic content.

National competitiveness, as an essential indicator in the characterization of a national economy, reflects generally the actions of institutions transposed into policies that train the trajectory of the economy. According to the OECD (1996), national competitiveness is given by “the degree to which a country can, under free and fair market conditions, produce goods and services that meet the requirements of international markets, while maintaining and increasing the real income of its population in the long term”.

The major role of public institutions in generating national competitiveness is obvious. Of particular importance is the way in which these institutions direct their activities, with decisions transposed into crucial actions for economic well-being. The modalities in which these activities are carried out depend on the quality of the social, political, economic and institutional environment, and their success is also the result of the way society trusts these institutions and considers itself the beneficiary of their action.

A measure of the quality of the ecosystem is the perceived level of corruption, which will influence and affect economic outcomes, a high level of corruption will lead to a decline in economic performance and a decrease in prosperity, well-being and living standards. The impact of corruption on competitiveness indicators has been empirically examined in numerous studies, with a major negative influence on how corruption affects the whole of economic activity (Mauro, 1995; Tanzi & Davoodi, 1997; Subarna & Rajib, 2010).

On the other hand, the actions of the institutions should maximize or at least increase the well-being of the members of society as measured by a qualitative indicator, happiness. In turn, it will positively influence the competitiveness of a nation, as measured both by the

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

economic component (GDP/capita) and by the social component (Human Development Index).

The paper specifically highlights the intensity of correlations between the three indicators at European level, but also by groups of countries. So far, studies have been carried out on the correlation between competitiveness (as a dependent variable) and corruption (independent variable) (Ulman, 2013) or between the level of happiness of the population (dependent variable) and corruption (independent variable) (Arvin & Lew, 2014). The thesis analyzes the intensity of the correlation between the dependent variable (competitiveness) and the two independent variables (level of happiness and corruption) applied to some groups of countries at European level constituted from a historical, geographical, cultural, economic perspective. The issue of economic inequalities between European countries has taken on increasing importance in the public and political agenda; thus, important disparities were noticed between the countries of the northern, western and southern regions (considered regions with a high and very high level of economic development) and the countries of the eastern region (countries of the former communist bloc that have not yet reached the European average of economic development). In this regard, the paper aims to analyze the intensity of the correlation between the three indicators applied at the level of four groups of countries in the context in which it is desired to research the influence of some social-economic indicators on the level of development of a country.

The aim of this work is to analyze, at pan-European level, the interdependence between three concepts that reflect the quality of the social, economic, political and institutional environment – competitiveness, happiness and perceived corruption.

The main objective pursued in the analysis is to highlight correlations for a limited period of time in the European space and on the geographical clusters between national competitiveness and the corruption perception index, respectively the happiness index.

2. Literature Review

According to Michael E. Porter (1990), national prosperity is created and isn't inherited. Prosperous societies in various historical eras slowed the growth, stagnated, then began the decline, culminating in the state dissolution (numerous examples cover, historically, a multimillennial period, from the Babylonian Empire to the Soviet Union). A nation's competitiveness depends to a large extent on its economy's ability to transform itself, to innovate in an ongoing process. National competitiveness is a measure of a nation's relative ability to create and maintain an environment in which businesses can compete so that the level of prosperity is improved (Kao et al., 2008). At the microeconomic level, private companies gain advantages over direct competition, leveraging the challenges of an increasingly competitive environment. Against the backdrop of increasing global competition,

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

the relative position of nations towards each other has become increasingly important. The differences between cultural values, economic structures, institutions, also contribute to differentiation and competitiveness. No nation can be competitive in all possible industries. Finally, nations specialize in key industries becoming increasingly competitive in specific areas (an eloquent example being the Nordic countries, which specialize in the competitiveness of health services or the education sector).

National competitiveness is an important element in generating economic progress. According to the World Economic Forum, national competitiveness includes "the set of institutions, policies and factors that determine the level of productivity of a country" (Schwab et al., 2007). This definition has led to debates as European states adopt different policies that support the internal macroeconomic environment. According to Meyer-Stamer (2008), "(systemic) competitiveness can be defined as the local or regional capacity to increase the level of income and improve the satisfaction of the lives of the citizens living in that area." National competitiveness is the ability of a country to provide an attractive and sustainable environment for businesses and residents to live and work. (Dijkstra et al., 2011) In recent years, the concept of competitiveness has evolved towards a new paradigm in economic development given the cultural, geographical, economic heterogeneity of European states. Although most European countries are economically interconnected and globalisation is increasingly accelerating the process of technology transfer and digitalisation, the level of competitiveness is propagating differently in different regions, which also leads to different levels of citizen satisfaction. According to a study conducted in 2015 (Djankov et al.) the citizens of Eastern Europe are less satisfied with their lives compared to the inhabitants of the other regions. This gap in happiness levels has persisted over time, despite predictions to the contrary from previous research. This gap is largely supported by the way in which the citizens of post-communist countries perceive governance. (Djankov et al., 2015). Thus, the level of satisfaction of Eastern Europeans is inversely proportional to the level of perception of corruption and poor government performance.

Although numerous studies have been carried out on the cause-effect relationship between corruption and the performance of the economic environment, one aspect that still needs clarification concerns the direct effect of corruption on the competitiveness of a national economic system. The fight against corruption has been and will continue to be the main topic of debate on the agendas of governments, non-governmental organizations, investors and private economic actors (OECD, 2000). According to Anderson and Gray (2007), there is sufficient evidence to consider that the starting point of corruption is the behavioral attitude of employees in close connection with their position in a key organization. Corruption is a problem that arises mainly at the intersection of government and the market economy, where the government itself must be considered an endogenous factor. Interpreting corruption from a theoretical perspective is a complex and difficult step. This difficulty is underlined by the fact that data is difficult to collect and, if available, is often unsafe and masked. On the other hand, corruption is an extremely sensitive subject in public debate, and data on the scale and trends of growth are controversial. Many surveys are being carried out in an increasing

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

number of countries. So far, however, the only relevant periodic surveys covering a large number of countries (globally) are those conducted by Transparency International and the World Bank.

"Economic growth without investment in human development is unsustainable – and unethical" (Sen, 2013). According to Bekhet (2008), the term "happiness" is often used as a synonym for quality of life, individual/collective well-being, life satisfaction, wealth of experiences and health. According to John Stuart Mill (1863), ethical utilitarianism has at its conceptual center the maximization of happiness. Neoclassical economic theory assumes that higher income correlates with higher levels of utility and economic well-being. Rising incomes allow a person to buy goods and services considered essential for life (food, shelter, health care and education), as well as others to increase their comfort level. Therefore, according to traditional economic theories, the link between income and utility (as a quantitative expression of happiness) is relatively strong. On the other hand, according to Richard Easterlin (2005), the increase in average income per capita in a developed country does not implicitly (causally) mean a proportionate increase in citizens' happiness. For developed countries, higher levels of GDP per capita did not result in higher levels of happiness reported by citizens, with Easterlin noting that GDP growth per capita is not correlated with increased happiness levels. These conclusions were disputed by Stevenson and Wolfers (2008), who argued that there was a link between happiness and real levels of GDP. These difficulties in interpreting the link to economic performance - happiness are given, first of all, by the fact that richer countries do not all have the same level of social cohesion, trust between citizens and authorities. Thus the Nordic countries occupy the top positions in the analyses on competitiveness, the degree of perception of corruption and the index of happiness, the eastern ones occupying the diametrically opposite position.

National competitiveness is an increasingly debated topic, both at the academic level and at the level of public policy makers, as governments around the world compete with each other to attract capital and resources from abroad, as well as to access external markets. However, there is no clear and complete definition for national competitiveness that reflects how countries can become more competitive in the global market. If in the past a nation was considered competitive if it had natural resources, today national competitiveness is measured in indicators related to innovation, technological level and digitalization, human capital skills, infrastructure. The increasingly sophisticated demands of citizens can become an obstacle to competitive advantage or, on the contrary, an opportunity for nations that succeed in responding to the demand of the global market. Competitiveness is often defined as a multivalent concept that engages a multitude of economic, political, social, financial indicators in a comprehensive analysis (Waheeduzzaman & Ryans Jr., 1996). It can also be described as a complex, multidimensional term, a relative concept, continuously adaptable to environmental changes (Chaudhuri & Ray, 1997). Although the research carried out to date on competitiveness brings different perspectives of specialists, a generally accepted perspective is that it remains a fluid term due to its ability to adapt continuously. (Banwet et al., 2002).

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

There is a lot of research and models for analyzing national competitiveness. One of the reference models is currently contained in the Global Competitiveness Report, produced annually by the World Economic Forum. This model gives analysts the certainty of the information collected and verified in interpreting the results according to the internal environment in each country. In this document, competitiveness is analyzed against the background of the process of globalization accentuated by the fourth industrial revolution, which creates new opportunities, but also disruptions in an economy. In this context, World Economic Forum introduced in 2018 the new Global Competitiveness Index (GCI 4.0), which presents a new approach based on 40 years of experience in the comparative analysis of the factors that determine long-term competitiveness (World Economic Forum, 2019). This annual index can be a support for policy makers in medium and long term actions. The analysis of the index is measured in 12 pillars: Institutions; Infrastructure; ICT adoption; Macroeconomic stability; Health; Skills; Product market; Labor market; Financial system; Market size; Business dynamism; and Innovation capability.

The results of GCI 4.0 in 2019 show that most countries still fail to achieve a high level of competitiveness. The report focuses in particular on a specific issue to the third decade – the joint development of strategies to support the transition to an economically sustainable environment. Given the existence of only a few economies implementing such an approach, it has become imperative for all economies to develop new inclusive systems and sustainable paths to economic growth. The report provides support by identifying a common global benefit, focusing on the decisions leaders need to make in line with the three objectives: growth, inclusion and sustainability. In the Global Competitiveness Report, more than 200 local business managers, governments and organizations work together to study in depth the challenges found in local markets. At the same time, the participants in the study offer solutions, establish new models and standards to improve the level of competitiveness specific to each country. (The Global Competitiveness Report, 2019)

Corruption, characterized as a malignant body infiltrated into the institutional national body that damages the moral and professional behavior of key employees in public institutions, consumes community resources and profoundly affects the way of life of citizens (Rotberg, 2017). Similar to biological tumors, corruption can be invasive and unforgiving. As it spreads, it degrades governance, distorts and upsets national priorities. Access to privileges is conditional on the evading of public resources, personal gains being illicitly extracted from community assets. Corruption is one of the main public issues of the contemporary era. Its approach, theoretically and practically, must be carried out by experts of diverse professional profile to outline solutions and obtain the necessary support from the authorities. Effective fight against corruption can ensure a relatively advantageous position in global competition, strengthening a nation's sustainable growth prospects. Robert Williams (1999) considered that the definitions and concepts built around corruption are restricted to consequences and how it can be minimized. At the same time, it placed more emphasis on the causes that can cause corruption than on corruption as an action in itself. Filgueiras (2006) associates the behavior of corruptible actors with the influence of the national past, advocating the

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

prevalence of ethical and moral principles for the proper functioning of institutions. On the same reasoning Agatiello (2010) identifies difficulties in resource management, proposing the implementation of favorable actions, focusing mainly on political integrity while noting that there is no mathematical formula that can accurately measure the social cost caused by corruption. These attempts to clarify the semantics of corruption raise the question: Can corruption be used as a tool for fraud in order to gain benefits?

It can be considered that the perceived level of corruption has increased since the end of the Cold War, but the evaluation is more qualitative than quantitative. Rotberg claims that 1.6 billion citizens worldwide are affected annually by bribery and corruption (Rorberg, 2017). The World Economic Forum foresees an annual global corruption cost of approximately 5% of total global GDP (\$2.6 trillion), Global Financial Integrity estimates that \$7.8 trillion was illegally hijacked from emerging economies between 2004 and 2013 due to tax evasion, corruption and other criminal activities, and the World Bank believes that more than \$1 trillion is paid a year in bribes (World Bank Bank, 2020). Whatever the actual figures, the number of people and the amounts involved are substantial, with social damage reflected in citizens' happiness levels.

Having a qualitative - subjective character, corruption is difficult to translate into a quantitative indicator. For quantitative analysis of corruption, an indicator proposed by Transparency International, the Corruption Perception Index (cpi), was developed, determined annually. The most recent, 2019, shows a large number of countries that show no improvement in the fight against corruption. Despite some progress, most countries have failed to effectively address and minimize corruption in the public sector.

This article examines the link between competitiveness and corruption, two antagonistic challenges increasingly representative of contemporary society. Research to date provides a different perspective on a possible correlation between them. Although the macroeconomic environment is not the only determining factor that accelerates economic growth, it is a basic condition in improving a country's competitiveness (World Economic Forum, 2017). The institutional environment is part of the macroeconomic environment, therefore an influencer in the sphere of the business environment. The efficiency of the public sector also has a significant impact on the business environment and is mainly reflected in the effectiveness of administrative services. Administrative efficiency is also significantly reflected in the quality of business. A fundamental role of the State is to ensure security and equity in the relationship between citizen and authority respectively consumer – economic operator. The quality of the business environment is significantly influenced by the degree of corruption. A public sector employee who abuses power for private purposes can generate a chain imbalance. Thus, corruption affects competitiveness in the following ways: it minimizes investors' willingness to invest, because economic actors see corruption as an "additional tax" (another form of tax); corruption leads to irrational public expenditure, because public representatives allocate insufficient funds for public services needed by citizens, reduced in favor of

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

opportunities that have added value to their personal financial situation; corruption qualitatively reduces infrastructure projects through inadequate public contracts; the voluminous and corrupt bureaucratic process demotivates investors (complex judicial system, difficulties in obtaining the necessary authorizations, etc.). (Stanojević, 2018)

Happiness, used as a synonym for "positive attitude" or "the way in which quality of life is measured" signifies both individual and collective well-being through the prism of lived events (Veenhoven, 2012). A concept analyzed until recently from the perspective of specialists in sociology, psychology or anthropology its study has under over time undergone a remarkable change: from the simple emotional state of the individual to a variable that significantly influences the socio-economic branch of a society. This change is reflected in analyses by numerous organizations and researchers, who follow the evolution of a nation's well-being through indicators other than consecrated ones. In general, at the microeconomic level, individual well-being has been found to be largely dependent on comparison with other individuals. As such, well-being depends on how individuals assess their income, professional achievements, and other measurable elements of their lives compared to other people. Individuals assess their income both in relation to what has happened in the past and the income they can generate in the future. Income growth does not influence people's long-term happiness but rather compares personal satisfaction levels with other people's satisfaction levels. Individuals will adapt their new living standards to the level of aspiration they propose. By comparing income with those of co-workers, acquaintances, family members, they develop the competition (Senik, 2014) towards well-being and implicitly towards happiness.

At the macroeconomic level, happiness has become an important variable in current economic research, being a strong benchmark for investors and beyond. Over time, indicators were built to quantitatively express this variable with a predominant qualitative content. The World Happiness Report (World Happiness Report, 2019) is published annually by the Sustainable Development Solutions Network, ranking 156 countries according to how happy their citizens perceive themselves. In recent years, the focus has been on how happiness has evolved over time, with a focus on technologies, social norms, conflicts and government policies, with the report built on six indicators/sizes: GDP/capita, social support, healthy life expectancy, freedom, generosity and absence of corruption.

The present article examines the correlation between happiness and competitiveness. Often competitiveness is defined as the activity of gaining resources or a competitive advantage by overcoming the opponent directly. In support of economic growth, measuring economic progress is no longer the only relevant factor. Indicators measuring the population (for example happiness) have become referential in national economic development. Happiness is now an important indicator in reflecting social progress and economic development (Brandts et al., 2005). There are several reasons why it is important to investigate the relationship between competitiveness and happiness. Kahneman, Diener and Schwartz (1999) offer numerous arguments about the importance of happiness from a socio-economic

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

perspective. Recent studies on happiness research and its relationship with the economy are provided by Frey and Stutzer (2002), Krueger (2005) and McFadden (2005). Happiness is undoubtedly one of the central objectives of a person's life, which is a good reason to study their relationship with different economic indicators.

3. Research methodology

This article aims to examine the link between two input variables (independent), the happiness index and the corruption perception index, and the exit index, the competitiveness index, at the level of the states in the European area. The analysis took into account the benchmark data provided by Transparency International on the Corruption Perception Index, the Global Happiness Report prepared by UN Sustainable Development Network Solution for the Happiness Index and the Global Competitiveness Report for the Competitiveness Index. The type of research is exploratory in nature, namely the confirmation or disprover of a correlation of independent variables with the dependent variable applied to four geographical clusters in Europe. The study focused on data provided by the 3 organizations mentioned above for 30 countries in the European area. In order to explicitly highlight the correlation between the two independent factors and the dependent factor, the division of the 30 countries in the European area was considered as follows:

- Western Europe Cluster (Austria, Belgium, France, Germany, Ireland, Italy, Luxembourg, Netherlands and Switzerland)
- Central and Eastern Europe Cluster (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia)
- Northern Europe Cluster (Denmark Finland, Iceland, Norway and Sweden)
- Southern Europe Cluster (Cyprus, Greece, Malta, Portugal and Spain)

The classification was made from a geographical, historical, cultural and economic perspective, aiming to identify and interpret possible differences in results between the four clusters. Exposing examples of good practice implemented by some European countries and regions may be models to be followed by other European countries that still fail to exceed the limits necessary for economic development.

For Western Europe, were considered geographically states established in this part of the continent, including Italy, this cluster therefore bringing together the founding members of the European Community (Belgium, France, Germany, Luxembourg, the Netherlands, Italy), as well as countries historically and culturally connected to them (Austria, Switzerland and Ireland). In addition to being the historical foundation of the European Union, the Western cluster is one of the richest regions in the world: Germany has the largest Gross Domestic Product in Europe, Luxembourg the highest GDP/capita in the world, and, nominally also in the PPP, Switzerland and Luxembourg have the highest average wage in the world. The

CĂLIN B. A. & MUNTEANU V.P. (2021).

Evidences on correlations at European level between competitiveness, quality of life and corruption

financial market, multiculturalism, relatively stable economic and political structures, the specialized workforce due to the high-quality education system are just some of the competitive advantages that the Western European States have. In terms of competitiveness, Western European countries excel according to the 2019 competitiveness ratio in economic macrostability, investments in the health system, infrastructure, skills and skills of the population.

Central and Eastern Europe geographically includes Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. What do the 11 nations have in common? Beginning in 1945, Eastern Europe meant the countries occupied by the Soviet army. All the countries of Eastern Europe were the old Soviet communist bloc. With the fall of the Iron Curtain in 1989, the entire landscape of the Eastern Bloc changed radically, countries gradually regaining their independence by joining the European Area. However, the transition from the communist to the democratic system didn't bring the best performance in terms of competitiveness, neither also in terms of happiness and corruption. The Central and Eastern region haven't yet discovered the best strategy for aligning with the results achieved by other European states, and nationalist-conservative skids in recent years are not encouraging.

Northern Europe includes Denmark, Finland, Iceland, Norway and Sweden. The Nordic model is distinguished from other types of states by its emphasis on maximizing labor participation, promoting gender equality, extended social benefits, the importance of trade unions. The latest global analyses found in the rankings by international organizations highlight the performance of the northern region. For example, the Global Happiness Report and the Competitiveness Report rank the Nordic countries in the top 10 places. The Nordic countries are characterized by a set of key institutional and cultural indicators that contribute massively to the efficient functioning of democracy, generating generic benefits, low levels of crime and corruption, increased trust in state institutions.

Southern Europe includes Cyprus, Greece, Malta, Portugal and Spain. What do the countries of Southern Europe have in common? Agriculture and tourism were the main sources of income in most southern European nations. Olives, citrus fruits, grapes, wheat, figs grow very well in the Mediterranean climate. Southern and northwestern Spain, Greece and Portugal, especially low-lying coastal areas, are agricultural areas. Farmers supply much of the food supply to European countries, especially wines and olives. As far as that goes to competitiveness, the countries of Southern Europe remain in the group of nations that should revise their national competitiveness strategy.

The present study examines the correlation between competitiveness, corruption and happiness at European level, following the same calculation method for each group of countries.

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

The working hypothesis starts from the premise of a positive correlation between independent and dependent variables. In order to determine the validity of the research hypothesis, the statistical correlation between the three variables shall be analyzed. The analyzed data are for the period 2015 to 2019 and the general context of the discussion and outcome justifies future research in the nature of the perspective of the correlation between competitiveness and the two independent variables (corruption, happiness) and their implications respectively in addressing opportunities for well-being and happiness among European citizens and beyond.

4. Data collection and pre-processing

The analysis of competitiveness data was taken from the Global Competitiveness Report, corruption data from the Corruption Perception Index analysis, and Global Happiness data from the Global Happiness Report, all of them for the period 2015 to 2019. The type of research is exploratory in nature, seeking to confirm or disprove the existence of a correlation between the independent variables "Corruption Perception Index" and "Happiness Index" and the dependent variable "Competitiveness Index", both at the level of the European area geographical clusters - four regions of Europe (Western, Central and Eastern Europe, Northern Europe, Southern Europe).

5. Results and discussions

National identity is defined by history and culture, political system and its own level of social and economic development. There are important differences from country to country, and most of them are the result of cultural differences. One cannot create a single successful model which, applied to one country and generating favourable results, can guarantee success in another country. One of the main obstacles to economic and social development is corruption, which over the last decade has generated increasingly worrying consequences in developing countries. (Emerson, 2006). There are studies that have shown that the level of corruption is lower in countries that do not impose financial/non-final barriers to imports, countries with longer exposure to democracy; countries with greater political stability and greater freedom of the press (Clarke & Xu Colin, 2002). For these reasons, corruption is a benchmark in carrying out a country assessment. Although the relations between corruption and economics are studied, its effect on life satisfaction is less studied. Given its effects on the economy, to what extent does corruption permeate the private spheres of life? In the literature, a negative relationship between corruption and well-being was found (Arvin & Lew, 2014) in complementarity with the level of economic development. The correlation between the perception of corruption and the level of satisfaction of life is stronger in developed countries and regions compared to developing countries. Is competitiveness the right glue in boosting happiness levels and reducing the perceived level of corruption? Competition is

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

generally seen as the key stimulus for increased efficiency and well-being. There are several reasons why it is important to investigate the relationship between competition and well-being. Well-being and happiness are undoubtedly central goals in the life of each individual. Kahneman, Diener and Schwartz (1999) provide important sources of information about the importance of well-being and the factors that positively influence the level of life satisfaction. This analysis proposes a different perspective of what has been studied so far. The study focused on the analysis of the correlation between competitiveness – corruption, competitiveness – happiness at European level. The results show that the more competitive a country is, the level of corruption decreases and the degree of happiness and satisfaction of life increases. A conclusive result in the research also shows that the European countries in the eastern region where the level of competitiveness is low, the acts of corruption are increasing, limiting the happiness of the citizens.

In the elaboration of the article were analyzed the data provided by the World Economic Forum on the Global Competitiveness Index; Transparency International for the Corruption Perception Index and the Global Happiness Report for the Happiness Index.

We considered the *Competitiveness Index (GCI)* as a dependent variable " Y ", the *Corruption Perception Index (CPI)* the explanatory variable (independent) " X_1 " and the *Happiness Index (HI)* being the second explanatory variable (independent) " X_2 ".

5.1 Description of indices:

The Global Competitiveness Index (GCI) is a comparative measure of 12 pillars – Institutions; Infrastructure; ICT adoption; Macroeconomic stability; Health; Skills; Product market; Labor market; Financial system; Market size; Business dynamism; and Innovation capability. GCI can also be considered as a quantitative measure that attracts investment with foreign capital. (The Global Competitiveness Report, 2020: 10). The annual report "assesses the ability of countries to provide their citizens with high standards of prosperity" (The Global Competitiveness Report, 2020: 10) This, in turn, depends on a country's productivity and the efficiency of which it uses its available resources. Therefore, the level of the Global Competitiveness Index is the result of the quality of the set of policies and factors that determine medium and long-term economic prosperity.

According to the Global Competitiveness Report, the results confirm an often sharp contrast within the European regions: for example, Germany's (Western Europe) overall competitiveness score (82) is almost 20 points higher than Greece's (South Europe) (63). The most competitive countries include those in the Northern and Western regions: the Netherlands, Switzerland, Germany, Finland, Norway, Sweden and Denmark. They excel through a stable, dynamic macroeconomic environment in the labor market and an efficient administrative system. On the other hand, the countries of Southern Europe (Greece), and Eastern Europe (Bulgaria, Hungary, Croatia, Romania) are still working to strengthen the

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

efficiency of public institutions, given the low confidence of citizens in them, and the macroeconomic environment doesn't add enough dynamism to business and openness to innovation.

The Corruption Perception Index (CPI) is a referential index published in an annual ranking of Transparency International. It measures the perceived level of corruption in a country, established by expert assessments and opinion polls. " The CPI defines corruption as the misuse of public influence for the private benefit. Currently, the CPI measures the level of corruption in 176 countries, with a score of between 0 (maximum perceived level of corruption) and 100 (perceived minimum level of corruption). The CPI can also be considered a benchmark for both governments and investors. At European level there is still a discrepancy between the Nordic region (Scandinavian countries, an example of good practices to follow in limiting corruption being Denmark) and the eastern region (the countries of the former communist bloc). According to Transparency International's Annual Report, the eastern countries of the eastern region still present a complex bureaucratic system, with bribery and fraud present at the highest levels in the administrative hierarchy.

The Happiness Index (HI) is a composite index of several socio-economic factors represented in a ranking based on ratings given by respondents for their own quality of life in their own country, also correlated with various factors that more or less influence quality of life. Between 2016 and 2019, Finland was ranked as the happiest country in the world in each of these. The national happiness ranking is based on a national survey: the people in the representative samples analyze on a scale of 1 to 10 quality of life, 10 being the best rating and 0 the lowest. The report correlates the results of the assessment of the perceived quality of life with various factors such as GDP/capita, social support, healthy life expectancy, freedom, generosity and absence of corruption. And in this case, there is a discrepancy between the Nordic countries and those of the former communist bloc. Given the low confidence in the institutions and the low level of perception of corruption, countries in the eastern region of Europe are expected to show a low degree of happiness.

5.2 Preliminary data verification

The validity of the model is confirmed by the numbers of data expressed in the sample. For a model to be valid, the sample must contain a minimum of 30 data, therefore the model is valid due to the 150 data analyzed.

CĂLIN B. A. & MUNTEANU V.P. (2021).

*Evidences on correlations at European level between competitiveness, quality of life and corruption***Table 1. Descriptive statistics**

	GCI (Global Competitiveness Index; Y)		CPI (Corruption Perceptions Index; X1)		HI (Happiness Index; X2)
Mean	70.37	Mean	66.05	Mean	63.97
Standard Error	0.59	Standard Error	1.20	Standard Error	0.70
Median	69.90	Median	62.00	Median	64.2
Mode	74.28	Mode	85.00	Mode	74.9
Standard Deviation	7.20	Standard Deviation	14.65	Standard Deviation	8.52
Sample Variance	51.87	Sample Variance	214.65	Sample Variance	72.55
Kurtosis	-1.19	Kurtosis	-1.35	Kurtosis	-0.86
Skewness	0.08	Skewness	0.05	Skewness	-0.26
Range	26.57	Range	50	Range	35.5
Minimum	57.14	Minimum	41	Minimum	42.10
Maximum	83.71	Maximum	91	Maximum	77.60
Sum	10555.41	Sum	9907	Sum	9594.8
Count	150	Count	150	Count	150

5.3 Three – Sigma rule

Knowing a distribution is useful because we can check and remove extreme values, also we can check the limits of normality. If we know that a variable has a Gauss distribution with the average μ and the standard deviation σ , then about 99.5% of the values of that variable are in the range $(\mu-3\sigma, \mu+3\sigma)$.

Table 2. Three – Sigma rule

GCI (Y)	CPI (X1)	HI (X2)
$Y_i \in (Y \pm 3\sigma)$	$X_{1i} \in (X_1 \pm 3\sigma)$	$X_{2i} \in (X_2 \pm 3\sigma)$
$48.76 \leq Y_i \leq 91.97$	$22.09 \leq X_{1i} \leq 109.99$	$38.41 \leq X_{2i} \leq 89.51$

✓ Correct data according to the three sigma rule

Since no value in the sample exceeds the lower and upper thresholds of the three sigma rule it is acceptable to maintain all data.

CĂLIN B. A. & MUNTEANU V.P. (2021).

Evidences on correlations at European level between competitiveness, quality of life and corruption

5.4 Defining the regression model

Table 3. Regression between the dependent variable and the independent variables

Regression Statistics		
* Multiple R	0.902845679	* There is a strong link between the parameters
** R Square	0.81513032	** The model is valid
* P - value		
Intercept	2.68408E-32	* The regression pattern is significant because the value is less than 0.05
CPI	1.99751E-15	
HI	4.61954E-06	

✓ Form, variables and parameters of the regression model

- Theoretical basis:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \varepsilon_i \quad (1)$$

$$Y_i(GCI) = \beta_0 + \beta_1 \cdot \text{Corruption Perception Index} + \beta_2 \cdot \text{Happiness Index} + \varepsilon_i \quad (2)$$

Where:

Y_i – Global Competitiveness Index (GCI)

X_1 – Corruption Perception Index (CPI)

X_2 – Happiness Index (HI)

- În the sample of the 30 countries:

$$Y_i = b_0 + b_{1X1i} + b_{2X2i} + \varepsilon_i \quad (3)$$

$$Y_i(GCI) = 33.00498225 + 0.299102748 \cdot \text{Corruption Perception Index} + 2.753004307 \cdot \text{Happiness Index} + \varepsilon_i \quad (4)$$

If the corruption perception index increases or decreases by 10 points then the GCI changes by the value of the coefficient X_1 , which means $0.299102748 \cdot 10 = 2.9910274$, while the other factors remain constant.

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

If the happiness index increases or decreases by 10 points then the GCI changes by the value of the coefficient X_2 , which means $2.753004307 \cdot 10 = 27.53004307$ when the other factors remain constant

Based on the above information, we wonder if competitive countries have high/low levels of corruption and high/low levels of happiness. In this regard, we want to calculate the correlation that analyses the impact of corruption and happiness on national competitiveness.

In the DataAnalysis menu in MicroSoftExcel, the regression coefficient was calculated for determining the correlation between these indicators, based on data for 2015 - 2019, both at EU-27 and at the level of the geographical clusters mentioned. As can be seen the level of the link between the parameters is strong.

Table 4. The level of connection between the parameters

Region	Coef. Multiple R	
	Corruption Perception Index	Happness Index
UE - 27 (+3)	*0.8869	*0.8459
West	*0.8433	***0.8133
East	*0.6176	*0.5138
North	***0.6083	***0.1156
South	**0.5708	*0.5077

*P – value < 0.001 – the statistical link is highly significant (confidence 99,9%)

**P – value < 0.01 – the statistical link is significant (confidence 99%)

***P – value < 0.05 – the statistical link is significant (confidence 95%)

Values are statistically significant at $p < 0.05$, with one exception: the correlation of the happiness index – the competitiveness index in Northern Europe.

At European level the analysis shows a strong and statistically significant link between variables. On the other hand, the situation region differs from that at European level. For the Nordic and Southern Regions, the link between parameters decreases significantly due to the total number of observations. Therefore, in the general European context, the corruption perception index and the happiness index have a strong influence in a country's overall competitiveness. In Western Europe, there is the same strong influence of corruption and happiness on the competitiveness of a state. Unlike results at the level and the Western region, Eastern Europe (former communist countries) and Southern Europe have a medium-intensity correlation of corruption and happiness with competitiveness. In Northern Europe (Scandinavian countries) the average level of corruption-competitiveness correlation and the

CĂLIN B. A. & MUNTEANU V.P. (2021).

Evidences on correlations at European level between competitiveness, quality of life and corruption

low level of happiness-competitiveness correlation (with lower statistical significance) demonstrates to us the high level of competitiveness of the Nordic countries has much deeper, more complex causes.

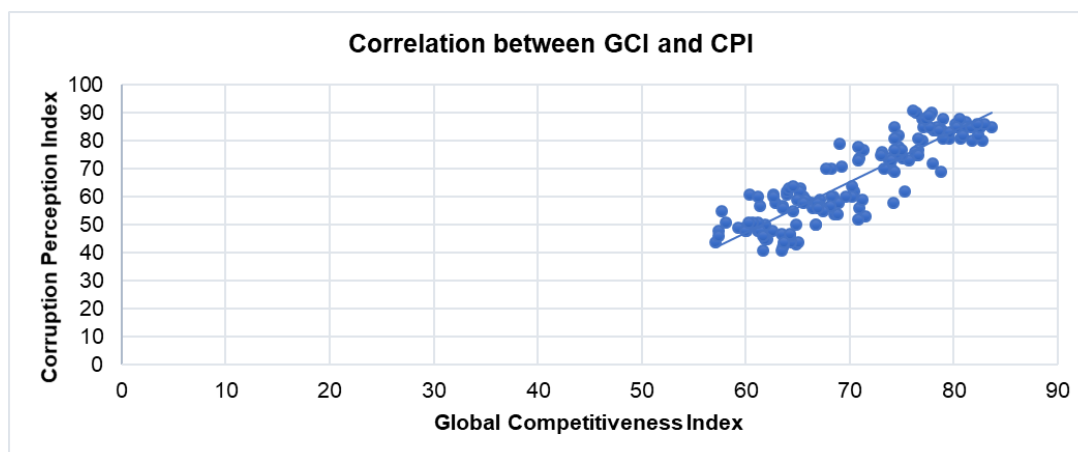
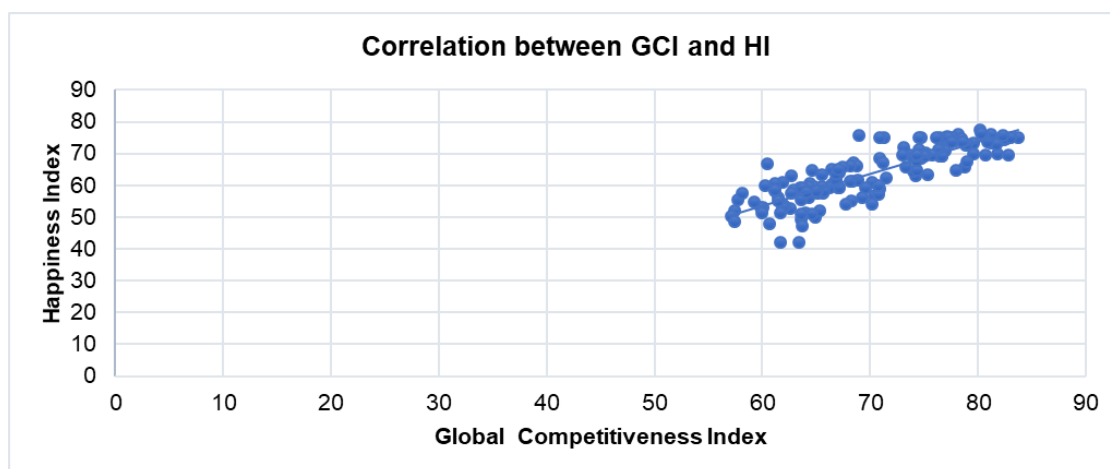


Figure 1. Correlation between GCI and CPI

Graphically representing the correlation between corruption and competitiveness at European level it is observed that there is a direct dependence between the dependent variable Y (GCI) and the independent variable X1(CPI): The regression line highlights the increase in competitiveness with the improvement of the corruption perception index.

These results show a significant at least average link between corruption and competitiveness in most European countries, which makes it necessary to adopt measures to combat it. Transparency International suggests some measures and recommendations that governments should consider and implement to combat corruption: controlling political funding to prevent excessive flow of money into politics, avoiding preferential treatment, managing conflicts of interest, promoting transparent and wide access to decision-making processes, strengthening electoral integrity, preventing and punishing misleading campaigns, empowering citizens, protecting activists and journalists, strengthening control systems and promoting the separation of powers.

CĂLIN B. A. & MUNTEANU V.P. (2021).

Evidences on correlations at European level between competitiveness, quality of life and corruption**Figure 1.** Correlation between GCI and HI

Graphically representing the correlation between happiness and competitiveness at European level it is observed that is a direct dependence between the dependent variable Y (GCI) and the independent variable X2 (HI): the regression line highlights the increase in competitiveness with the improvement of the in the happiness index.

From 2015 to nowadays, in every annual report prepared by the World Happiness Report's specialists on the happiness of countries, the five Nordic countries - Finland, Denmark, Norway, Sweden, and Iceland - are always present in the top ten. Clearly, when the subject of quality of life is debated, the Nordic States are recognized for their involvement in the health system, education, technological infrastructure, robust systems of social cohesion between citizens.

The hypothesis of a positive correlation between the Corruption Perception Index, the Happiness Index and the Global Competitiveness Index at European level is thus confirmed. Thus we note that the higher the perception index of corruption in European states (equivalent to perceived corruption) the greater the level of competitiveness of a state. By comparing the eastern part of Europe (formerly communist countries) and the northern part of Europe (Scandinavian countries), we see a significant discrepancy between them. Why is there such a discrepancy? Clearly, with regard to national competitiveness, the Nordic States are acting correctly, but Nordic exceptionalism is not limited to the effectiveness of the macroeconomic environment. Whether we look at the level of democracy and political rights, lack of corruption, trust between citizens, security, social cohesion, gender equality, equal distribution of income, the human development index or many socio-economic indicators, the Nordic countries often come first in the world. What makes Northern citizens so happy with their lives? By reviewing existing studies, theories and data, the Global Happiness Report, it is found that the most plausible explanations include factors related to the quality of

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

institutions, social support, low corruption and democracy. Moreover, Northern citizens experience a high sense of autonomy and freedom, as well as a high level of social trust towards each other, which plays an important role in determining life's satisfaction.

6. Conclusions

Can be identified factors that determine a generally valid definition of the well-being of a population. The degree of well-being acquires new meanings from year to year depending on fluctuations in the economic climate. If in the past competitiveness only related to elements as country's productivity, today it is measured in socio-economic indicators such as: human capital, the innovation ecosystem, market freedom, etc., relevant links can also be highlighted in relation to quality of life or the institutional environment. Economic development and implicitly the well-being of the population are essential elements with the role of improving national competitiveness through sustainable methods.

As limitations, only the data provided over the last 5 years (2015-2019) are taken into account in the current study, the analysis being applied at the level of the European area. It is not possible to identify precisely the general implications of corruption as the data provided do not reflect the financial losses caused by the high degree of corruption. Thus correlated with the level of economic development, the profile of cultural identity, the quality of the social, political environment, the results show that some countries are true promoters in terms of competitiveness and satisfaction of the lives of citizens, while others need strategies for economic recovery. As future research the study can expand globally by analyzing correlations at the intercontinental level (South America, North America, Europe, Asia, Africa, Australia).

In the current economic context, social indicators were often not considered an investment reference for successful entrepreneurs compared to financial indicators. This study dealt with one of the most controversial topics, corruption, and its influence on the level of national competitiveness. From another perspective, the present study sought the answer to the question: can happiness be the source for the competitive advantage of a competitive state?

The results show that countries classified as having a low rate of national competitiveness are perceived to be more corrupt than countries with high competitiveness. Referring to Rosa Ackerman's (1996) claim "In general, any reform that stimulates increased competitiveness significantly reduces corruption", corruption is supported by a lack of competitiveness. An edifying example of this is the Nordic Region, which is performing in terms of happiness and national competitiveness, succeeding through reforms that further restrict corruption and increase citizens' confidence in state institutions. Unlike the Nordic states, the states of the old communist bloc still have low levels of trust in state institutions, and the bureaucratic process only hinders entrepreneurship. The results of the study also show that the happiest

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

nations in the European area also have the highest levels of competitiveness. Considering the analyses carried out so far by the World Happiness Report, the new paradigm of economic growth also translates into the happiness of citizens. Thus, according to the study, the Nordic countries consistently have the highest degree of happiness in Europe but also around the world, unlike the countries of the Eastern region (located on the bottom of the European and middle-world rankings).

The results also highlight a major gap between countries with different stages of economic development. In this way we can discuss the limit of corruption in the implementation of a successful model that can give nations the chance to perform in achieving competitive nation status. Unlike corruption, happiness can be the direction in which nations should direct some of their resources in order to facilitate the quality of life of citizens.

References

- Ackerman, R., (1996). *The Political Economy of Corruption: Causes and Consequences*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/11629>
- Agatiello, O. R., (2010). Corruption not and end. *Management Decision*, 48(10), 1456-1468
- Anderson, H. J., & Gray, W. C., (2006). *Anticorruption in Transition 3. Who is Succeeding...and Why?* Washington DC: The World Bank
- Arvin, M. & Lew, B. (2014). Does income matter in the happiness – corruption relationship? *Journal of Economic Studies*, 41(3), pp. 469 – 490
- Banwet, D. K., Momaya, K., & Shee, H. K., (2002). Select Issues of Competitiveness: Perceptions, Reflections and Directions. *Global Business Review*, 16(4), 665 - 679
- Bekhet, A. K., Zauszniewski J. A., & Nakhla W. E., (2008). Happiness: Theoretical and Empirical Considerations. *Nurs Forum*, 43(1), 12 – 23
- Brandts, J., Riedl A., Winden, F., (2005). *Competition and Well-Being*, Discussion Paper no. 1796
- Chaudhuri, S., & Ray, S., (1997). The competitiveness Conundrum: Literature Review and Reflections. *Economic and Political Weekly*, 32(48), M83 – M91
- Clark, A. E. & Senik, C., (2015). *Happiness and Economic Growth*. Oxford: Oxford University Press, page 1 – 32
- Clarke, G., Xu Colin, L., (2002) *Ownership, Competition and Corruption. Bribe Takers versus Bribe Payers*. The World Bank Development Research Group Regulation and Competition Policy
- Dijkstra, R. B. et al., (2011) Environmental Regulation: An Incentive for Foreign Direct Investment. *Review of International Economics*, 19(3), pp. 568 – 578
- Djankov, S. et al., (2015) The happiness gap in Eastern Economics. *Journal of Comparative Economics*, 44(1), pp. 108 – 124
- Easterlin, R., (2004), The Economics of Happiness. *The MIT Press*, 133(2), 26-33
- Emerson, P., (2006) Corruption, competition and democracy. *Journal of Development Economics*, 81(1), 193 – 212

CĂLIN B. A. & MUNTEANU V.P. (2021).*Evidences on correlations at European level between competitiveness, quality of life and corruption*

- Filgueiras, F., (2006). A corrupcao na politica. *Perspectivas Teoricas e Metodologicas. Utopia y Praxis Latinoamericana* 11(34), 1-29
- Frey, B. & Stutzer, A., (2002). What Economists Can Learn from Happiness Research. *Journal of Economic Literature* 40(2), 402 - 435
- Helliwell, J.F., Layard, R. & Sachs, J.D., (2019). *World Happiness Report*. Retrieved from <https://worldhappiness.report/>
- Kahneman, D., Diener E. & Schwartz, N., (1999). *Well-Being. The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation
- Krueger, A. B., (2005). *Well-Being and Policy Evaluation*, Paper presented at the Econometric Society World Congress London. Retrieved from <https://authors.library.caltech.edu/21990/>
- Mauro, P., (1995). Corruption and Growth. *The Quarterly Journal of Economics* 110(3), 681 – 712,
- McFadden, D., (1989). *The New Science of Pleasure*. Frisch Lecture, Presented at the Econometric Society World Congress London
- Meyer – Stamer, J., (2008) *Systemic Competitiveness Revisited*. Mesopartner Working paper 14. Retrieved from https://www.mesopartner.com/fileadmin/media_center/Working_papers/mp-wp14_01.pdf
- Mill, J.S., (1863). *Utilitarianism*, London: Parker, Son and Bourn, West Strand (Romanian Edition: Mill, J.S., (2014), ALL Publishing House, Translator Valentin Mureșan)
- Porter, M., (1985). *Competitive Advantage*, New York: The Free Press (Romanian Edition: Porter, M., 2000, Teoria Publishing House)
- Rotberg, I.R, (2017). *The Corruption Cure. How Citizens and Leaders can combat graft*, New Jersey: Princeton University Press
- Schwab, K., (2019). *The Global Competitiveness Report*, Retrieved from http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- Schwab, K., et al., (2007) *The Global Competitiveness Report 2007 – 2008*, Retrieved from https://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2008-09.pdf
- Sen, A., (2013). *India's dirty fighter*, Retrieved from <https://www.theguardian.com/world/2013/jul/16/amartya-sen-india-dirty-fighter>
- Smith, A., (1776), *The Wealth of Nations*, London: W. Strahan and T. Cadell (Romanian Edition: Smith, A., (2011), Publica Publishing House, Translator Monica Mitarcă)
- Stanojević, M., Bošković, & B., Bugarinović, M., (2018). *Competitiveness of rail freight corridors – case study: corridors X and IV*, Retrieved from https://www.researchgate.net/publication/334247046_Competitiveness_of_rail_freight_corridors_-_case_study_corridors_X_and_IV
- Stevenson, B., and Wolfers, J. (2008). *Economic Growth and Subjective Well – Being: Reassessing the Easterlin Paradox*. Retrieved <https://www.nber.org/papers/w14282>
- Subarna, K. S., & Rajib, N. S. (2010). National Competitiveness and Perception of Corruption. *Advances in Competitiveness Research* 18(1/2), 89-101
- Tanzi, V., Davoodi, H., (1997) *Corruption, Public Investment and Growth*, Retrieved from <https://www.imf.org/external/pubs/ft/wp/wp97139.pdf>
- Transparency International, (2019). *Corruption Perceptions Index 2019*, Retrieved from https://images.transparencycdn.org/images/2019_CPI_Report_EN_200331_141425.pdf
- Ulman, R. S., (2013). *Corruption and National Competitiveness in Different Stages of Country Development*. Paper presented at the International Economic Conference of Sibiu. Retrieved from <https://core.ac.uk/download/pdf/82220035.pdf>

CĂLIN B. A. & MUNTEANU V.P. (2021).

Evidences on correlations at European level between competitiveness, quality of life and corruption

Waheeduzzaman, A.N.M., & Ryans, J.K. Jr., (1996). *Understanding of international competitiveness: a quest for a common ground*, Retrieved from <https://www.emerald.com/insight/content/doi/10.1108/eb046333/full/html>
