

CAN CULTURAL DIMENSIONS EXPLAIN THE LEVEL OF SHADOW ECONOMY IN THE EU?

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Abstract: *Informal or shadow economy and its multiple determinants have gained the attention of economic research, benefitting from a vast body of literature in the field. Even so, the nexus between the expansion of the informal economic sector and institutions, perceived as good practices, has been less explored. If the formal institutional component is easier to quantify in terms of impact determined on the informal economy, things are totally different when emphasizing how the informal institutions cause the auspicious circumstances as to further escalate shadow practices. Starting from such premises, our paper investigates the nexus between informal institutions, traditions, culture, values, attitudes, beliefs, or mentality that define the basic identity of any society and the predisposition of those societies towards shadow economy, applied to the EU -28. In other words, by using a mixed methodological approach based on the cultural dimensions provided by Geert Hofstede and a unique dataset of variables representative for the shadow economy and quality of informal institutions, we employ a cluster analysis and panel data analysis for the EU countries, including the United Kingdom. As expected, the results have fully validated the imperceptible contribution of unofficial institutions to the amplitude and gravity of informal economy, thus affecting the long-term prosperity of the country.*

Keywords: *Informal institutions, informal economy, shadow economy, culture*

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Introduction

The omnipresent issue of shadow economy has raised the interest of numerous international organizations, national governments, but mainly of researchers for more than three decades. However, the extent of such a phenomenon, its causes, or the proper ways to estimate its extent are far from being reached. In general terms, when referring to the informal economy, some substitute concepts such as shadow economy, untaxed or undeclared economy, are also used. All these have a common denominator – they include economic activities which avoid government regulations, taxation and the income derived from them (European Commission, 2014: 1). Nevertheless, the unlawful economic pursuits of the informal household economy are not included (Schneider et al., 2010: 5). The attention paid to the study of the shadow economy is justifiable given the impact of such an informal sector on the economic output of the nations (Buehn et al., 2009; Feige & Urban, 2008; Schneider et al., 2010). Undoubtedly, a higher share of informal activities in the GDP of a country will affect both the economic dynamics and the social life. For example, from the perspective of the economic negative repercussions, we can point out severe imbalances of the economy, lower economic productivity, lower revenues collected by the state etc. Concerning the social dimension, we can nominate severe effects in terms of social equity (Tudose & Clipa, 2016), a poorer quality of life due to the insufficient public spending oriented towards education, health, infrastructure, services. Poverty will be accentuated, thus affecting the level of social safety (Mishchuk et al., 2020). The extent to which a country is affected by shadow practices highly relies on the level of its economic development. According to Elgin and Birinci (2016), the share of the informal sector tends to be more pronounced in the case of poor or developing economies, while in the case of highly developed economies, the informal activities are better controlled and limited. Obviously, such discrepancies can be explained through the fact that limited economic growth can be associated with less effective formal institutions which allow informal rules of the game to prevail, thus encouraging the expansion of the shadow economy. Poor countries do not benefit from a solid institutional background, able to provide the necessary incentives as to stimulate the efficient allocation of scarce resources to their most productive destinations, human capital development, competition, a free-market mechanism guided by the meta-institution of democracy (North, 1990). Therefore, their informal institutions are rather extractive than inclusive, paving the road towards shadow practices. Regardless of the measures undertaken to limit the shadow economy, this is a problem of the modern society that will never entirely disappear. The European Union countries try to control it through different means or even sanctions applied so as to discourage it, but less importance is paid to the informal institutional pillar. In such context, our paper aims to investigate the nexus between the informal institutions and the predisposition towards shadow economy at the EU 28 level.

The remaining of the paper is structured as follows: section 2 presents the most relevant particularities from the vast body of literature on the relationship between informal institutions and shadow economy. Section 3 highlights the details concerning the data and methodology used as to shape our analysis. Section 4 reveals the results and discussions on the topic approached. Section 5 concludes.

Literature review

Although over the years there has been a well-defined tendency towards the decrease of the shadow practices as share in the GDP of the countries worldwide, a simple analysis applied to the European nations will point out the existence of shadow economy even since the late 1980s (Feige, 1979). The latest estimates for the European Union member states have emphasized a reduction of the average level of shadow economy as share in GDP from 22.6% in 2003 to 16.8% in 2018 (Schneider, 2019). Even so, the statistical scenarios for the future provide information with respect to two separate dynamics. On the one hand, for the case of most EU countries, the share of informal economy in their GDP is expected to diminish. On the other hand, for countries such as Bulgaria, Croatia, Hungary, Romania, and even outside the EU, in the United Kingdom, this phenomenon is expected to become more intense (Schneider, 2019).

The analyses of the shadow economy determinants are abundant and provide generous literature in the field (Feld and Schneider, 2010; Schneider and Enste, 2000; La Porta and Shleifer, 2008; Williams and Schneider, 2016; Schneider & Buehn, 2017). More recently, Chen et al., (2020) have pointed out several factors which stimulate the underground economy, namely: institutional quality, tax structure, tax burden, the level of intensity of the government regulation, government decentralisation, unemployment, official income, globalization, and openness. According to the general perspective of the analyses provided in the literature, there is a wide consensus today with respect to the fact that the shadow economy determinants have economic, political and institutional origins (La Porta and Shleifer, 2014; Williams & Schneider 2013; Schneider & Buehn, 2017; Medina & Schneider, 2018). Analysing the origins of shadow practices from the perspective of institutional economics, among the main causes of informal economy, we may identify elements belonging to the formal institutional area, such as: quality of public institutions, regulations, peculiarities of local governance, fiscal pressure, and factors that derive from the informal institutional background, such as: the social and cultural system, fiscal morals (Iacobuță et al., 2014).

Several studies, circumscribed to the theoretical background provided by the New Institutional Economics (Feige, 1997; Gerxhani, 2004; Iacobuță et al., 2014; Iacobuță & Pohoată, 2015; Williams et al., 2015), provide pertinent reasons for the existence and manifestation of the informal economy. According to Douglass North's paradigm (1990), institutions illustrate the proper way to diminish uncertainty because they create predictability and a stable structure for our everyday life. While formal institutions are represented by laws and written political, economic, and social regulations, the informal or unofficial rules are reflected by culture, traditions, codes of conduct, norms of behaviour, mentality, religion, morals (ethics), trust. In most research papers, the variables often used to explain the grounds of participating in the informal economic sector belong to the formal institutional area. For instance, some researchers have shown that the informal activities are less intense in those countries where government effectiveness, regulatory quality, business freedom, fiscal freedom and labour freedom are high (Iacobuță et al., 2014; Elgin & Öztunali, 2014; Maulida & Darwanto, 2018). Even so, for those societies where the formal institutional background is inefficient, the informal rules of the game will become a second-best landmark by structuring anachronist behaviours focused on opportunism

within social and economic relations between individuals and organizations (Bostan et al., 2016).

In our paper, we intend to analyse the impact of informal institutions perceived as rules of the game or constraints inherited from the past or perpetuated from a generation to another through culture, learning and imitation (North, 1990) on the shadow economy phenomenon in the 28 European Union countries, including the United Kingdom. According to Achim et al., (2019) or Pukin (2020), the fundamental contribution of informal rules of the game reflected by culture, mentality of a people or even religion cannot be neglected when explaining the affinity of individuals towards shadow practices. Irrespective of its multiple informal institutional underpinnings, our perspective is on the same wavelength with the one fairly pointed out by Alarcón-García et al., (2020), according to which it is extremely important to always frame and interpret shadow economy by considering the national dimension and context because the informal institutional determinants are always circumscribed to that particular national background.

Data and methodology

Data

Our empirical investigations based, on the one hand, on a hierarchical and k-means cluster analyses and, on the other hand, on a panel data analysis were applied on some specific dataset. Concerning the cluster analyses, we have chosen the six cultural dimensions provided by Geert Hofstede, respectively: Power distance, Individualism/Collectivism, Masculinity/Femininity, Uncertainty avoidance, Long-term/Short-term Orientation, Indulgence and the shadow economy for the year 2016, as most recent landmark, because cultural dimensions are presented as cross-section data, not as time-series one. It is important to mention that Cyprus was not present on the list of countries analyzed by Hofstede, so it is missing from our clustering endeavour.

Regarding our second analysis, the panel data, we deal with time-series. Consequently, our dependent variable is shadow economy as share of GDP provided by Schneider analyses. The independent variables that we have selected are Government integrity – a component of the Index of Economic Freedom provided by Heritage Foundation. Such variable surprises the predisposition of a society towards political corruption, nepotism, bribery, embezzlement and provides important information concerning the dominant attitudes which guide a specific nation, whether people have trust in politicians, whether they are willing to tolerate irregular payments and perceive it as normal behaviour or, on the contrary, they sanction immediately such deviant actions and demand for transparency, correctness, and trust. The second variable is Fundamental Rights, a component of the Global State of Democracy Indices provided by the International Institute for Democracy and Electoral Assistance. This main attribute of Democracy index is extremely representative for our analysis because it captures some fundamental features with respect to the informal institutional background existing in every country. Namely, it provides valuable information about civil rights and liberties, if they are respected or not, freedom of religion, of association and assembly, fair access to justice for all citizens, irrespective of their political affinities, their social or economic position, level of education, details regarding personal integrity and security of citizens. In other words, good informal institutions which were decanted in time should defend such

fundamental civil rights. Civilized nations, where democracy is at high standards, are fully based on equity and integrity, values that will inhibit shadow practices. The third variable is represented by Human Development Index provided by United Nations Development Programme (UNDP). It provides important information concerning the level of education, life expectancy and income per capita. This index indirectly assesses the quality of unofficial institutions. First, educated people value fairness, competition, trust, and equity and reject and sanction opportunistic behaviours or shadow activities that hinder economic development. Second, societies guided by good norms of behavior and positive mentality place the individual at the centre of economic evolution, taking care of the population's education, health, and longevity, but also of their standards of living. This is the case of countries guided by inclusive institutions. At the other end, we find countries guided by extractive institutions, where the political class and the perpetuation of power is the priority while the rest of the society remains sentenced to poverty, illiteracy, and premature deaths. Our series contain data available between 2000-2016, except for Fundamental Rights, which has a limited availability for the period 2000 - 2015.

Methodology

To capture the major influence of informal institutions on the level of shadow economy, our research is based on a mixed methodological approach comprising two parts. First, a Hierarchical Cluster analysis followed by the K-means Cluster analysis will be applied as to provide a comprehensive interpretation of the nexus between shadow economy and culture, identified in the cultural dimensions of Geert Hofstede for all EU countries, including the United Kingdom, but excluding Cyprus due to the lack of data. While the hierarchical cluster analysis will provide us with significant information with respect to the number of clusters, the second one, the K-means clustering will effectively group the EU countries in those specific clusters.

Secondly, a Panel Data analysis will be employed to examine the relationship on the long run between the level of shadow economy as share of GDP and the variables highlighting the quality of people's mentality, values, behaviour, codes of conduct, in other words, the quality of informal institutions. All series were tested for stationarity by using panel unit root test Levin, Lin & Chu and the individual unit root test, Im, Pesaran & Shin as a check for robustness. Given the large variety of data, a first difference was applied to the raw data in order to run the analysis. According to the literature in the field, an important advantage panel data analysis resides in the possibility to analyze large datasets, with N cross-sections, in our case the 28 EU countries, with large T time periods, 17 in our case. Moreover, this method allows to control the individual heterogeneity (Baltagi, 2005: 4). The general equation model of panel data is:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + u_{it} \quad (1)$$

Where: $i = 1, \dots, 28$ illustrate the 28 EU countries, including the United Kingdom;
 $t = 1, \dots, 17$ is the selected time span;

If the variables within the model are replaced, it will become:

$$SHE_{it} = \alpha + \beta_1 GI_{it} + \beta_2 FR_{it} + \beta_3 HDI_{it} + u_{it} \quad (2)$$

Where: SHE_{it} is the level shadow economy of country i in year t ;

GI_{it} reflects the government integrity of country i in year t ;
 FR_{it} highlights the fundamental rights of country i in year t ;
 HDI_{it} is the human development index of country i in year t ;

For choosing the best estimation model of the panel data analysis, we employ all three existing methods and their related tests. The first one is *the common constant method* (OLS method), that has the assumption that data set is a priori homogenous. Second, *the fixed effects method* (Least Square Dummy Variable - LSDV) is applied. Here, a dummy variable is included for each section, consequently implying different constants for each section.

In this case, the matrix becomes $Y = D\alpha + X\beta' + u$, where D is the dummy variable created for each section, as noted below.

$$Y = \begin{pmatrix} Y_1 \\ Y_2 \\ \vdots \\ Y_N \end{pmatrix}_{NT \times 1} \quad D = \begin{pmatrix} i_T & 0 & \dots & 0 \\ 0 & i_T & & 0 \\ \vdots & \vdots & & \vdots \\ 0 & 0 & & i_T \end{pmatrix}_{NT \times N} \quad X = \begin{pmatrix} x_{11} & x_{12} & \dots & x_{1k} \\ x_{21} & x_{22} & & x_{2k} \\ \vdots & \vdots & & \vdots \\ x_{N1} & x_{N2} & & x_{Nk} \end{pmatrix}_{NT \times k} \quad \alpha = \begin{pmatrix} a_1 \\ a_2 \\ \vdots \\ a_N \end{pmatrix}_{N \times 1} \quad \beta' = \begin{pmatrix} \beta_1 \\ \beta_2 \\ \vdots \\ \beta_k \end{pmatrix}_{k \times 1} \quad (3)$$

In this case, a Fisher test is necessary to decide what method is the best. The redundant Fixed Effects test will indicate if the fixed effects method can be applied or not. Third, a *random effects model* will be applied. The novelty here is that, in this latter model, the constant of every section is perceived as random parameters (Asteriou & Hall, 2011). Therefore, the model becomes:

$$Y_{it} = (\alpha + v_i) + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + u_{it}, \quad (4)$$

or

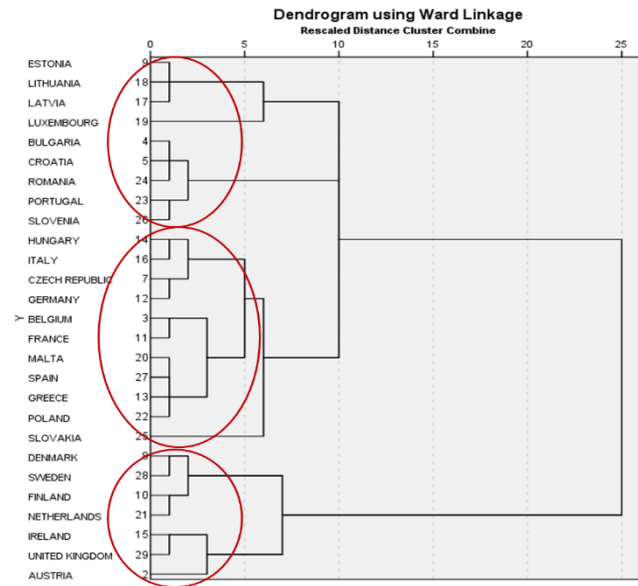
$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + u_{it} + v_i \quad (5)$$

Where: $\alpha_i = (\alpha + v_i)$ illustrates the variability of the constant, v_i - is a standard random variable with a zero mean. In such case, the Hausman test must be used to choose between the fixed effects model and the random effects one.

Results and discussions

The results obtained after applying hierarchical clustering are presented in Figure 1 below.

Figure 1. Hierarchical Clusters on cultural dimensions and shadow economy EU 27 – 2016



(Source: Personal assessment of data in SPSS)

As presented above, the countries can be grouped into three separate clusters. We will maintain this number of three clusters when applying the K-means clustering, which will tell us if the six cultural dimensions are representative for dividing the European countries in these three separate sets. The results are available in Figure 2.

Figure 2. Anova results – K mean Clusters

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Power_distance	2673,348	2	247,165	24	10,816	<.001
Individualism	1992,663	2	178,707	24	11,150	<.001
Masculinity	2718,321	2	427,723	24	6,355	,006
Uncertainty	3531,569	2	229,391	24	15,395	<.001
LT_orientation	720,817	2	240,546	24	2,997	,069
Indulgence	2665,780	2	197,796	24	13,477	<.001
Shadow_economy	1102,588	2	188,991	24	5,834	,009

Source: Personal assessment of data in SPSS

The K-means clustering reveals that all seven variables, namely Power distance, Individualism/Collectivism, Masculinity/Femininity, Uncertainty avoidance, Long-term/Short-term orientation, Indulgence and Shadow economy are relevant to discriminate across our three clusters. The size of clusters is as follows: cluster 1 contains 8 countries, cluster number 2 contains 7 countries and cluster number 3 has 12 countries, but a more comprehensive perspective is highlighted in Table 1.

Table 1. Cluster membership

CLUSTER 1	CLUSTER 2	CLUSTER 3
<ul style="list-style-type: none"> ▪ Belgium ▪ Czech Republic ▪ France ▪ Germany ▪ Hungary ▪ Italy ▪ Poland ▪ Slovakia 	<ul style="list-style-type: none"> • Austria • Denmark • Finland • Ireland • Netherlands • Sweden • United Kingdom 	<ul style="list-style-type: none"> • Bulgaria • Croatia • Estonia • Greece • Latvia • Lithuania • Luxemburg • Malta • Portugal • Romania • Spain
<ul style="list-style-type: none"> • High power distance • Rather high individualism • High masculinity • Moderate uncertainty avoidance • High long term orientation • Moderate indulgence • Low shadow economy 	<ul style="list-style-type: none"> • Low power distance • Rather moderate individualism • Rather moderate masculinity • Rather low uncertainty avoidance • High indulgence • Rather moderate shadow economy 	<ul style="list-style-type: none"> • Average power distance • Low individualism • Rather low masculinity • High uncertainty avoidance • Rather low long term orientation • Low indulgence • High shadow economy

Source: Personal assessment of data

According to Table 1, the most efficient countries in terms of shadow economy (Cluster 1) are Belgium, the Czech Republic, France, Germany, Hungary, Italy, Poland and Slovakia. These countries have the lower levels of shadow economy as shares in their GDP. Cluster 2 groups nations characterised by a rather moderate level of shadow economy, namely: Austria, Denmark, Finland, Ireland, Netherlands, Sweden, and United Kingdom. In the third group, those nations dealing with the highest levels of informal economy are included: Bulgaria, Croatia, Estonia, Greece, Latvia, Lithuania, Luxemburg, Malta, Portugal, Romania, and Spain. The institutional explanation for the results that we have previously obtained, from the particular perspective of culture as an informal institutional exponent are presented in Table 2 below.

Table 2. An informal institutional interpretation of Shadow economy in EU 28

Cluster 1 – LOW Shadow economy	Cluster 2. MODERATE Shadow economy	Cluster 3 HIGH Shadow economy
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<ul style="list-style-type: none"> ▪ High attachment to following rules. ▪ Competition and performance through hard work, high work ethics. ▪ Problems solved with the application of clear rules! ▪ Traditions and good practices serve as solid landmarks in decision making. ▪ People fight for their desires. 	<ul style="list-style-type: none"> • People take on responsibility for their decisions. • Moderate competition among people. • Problems are solved by following rules, but sometimes compromises are accepted. • No fear of new situations – have beliefs and an appropriate mentality. • People are free to accomplish their objectives! 	<ul style="list-style-type: none"> • Obedience (ex-USSR space) • Limited competition, innovation. • Problems solved by compromise, rules are avoided. • Fear of new situations, not confident in the future. • The culture of immediatism – no thinking on the long run. • Restraint culture – people are obedient, they accept what it is given and do not fight for their needs.
<ul style="list-style-type: none"> • <i>High power distance</i> • <i>Rather high individualism</i> • <i>High masculinity</i> • <i>Moderate uncertainty avoidance</i> • <i>High long term orientation</i> • <i>Moderate indulgence</i> • <i>Low shadow economy</i> 	<ul style="list-style-type: none"> • <i>Low power distance</i> • <i>Rather moderate individualism</i> • <i>Rather moderate masculinity</i> • <i>Rather low uncertainty avoidance</i> • <i>High indulgence</i> • <i>Rather moderate shadow economy</i> 	<ul style="list-style-type: none"> • <i>Rather high power distance</i> • <i>Rather collectivist</i> • <i>Low masculinity</i> • <i>High uncertainty avoidance</i> • <i>Short term orientation</i> • <i>Low indulgence</i> • <i>High shadow economy</i>

Source: Personal assessment of data

Several main ideas can be pointed out based on the information in Table 2 above. First, rather individualistic, masculine, with moderate indulgence countries are more attached to effective rules and their precise application, especially in solving conflicts. They benefit from a good informal institutional basis that shapes a proactive mindset focused on work ethics, trust, discipline, and order; consequently, they will not tolerate opportunism and shadow practices. In the middle, there are the countries from the second cluster, characterized by a low power distance, but in a combination with a rather moderate individualism and masculinity, meaning that, in solving conflicts, compromise can be admitted sometimes; however, moderate competition and relative attachment to following rules and order can explain their higher predisposition towards a more intense shadow economy compared to the first group. Thirdly, countries which belong to cluster number 3 are the most exposed to shadow or informal economic practices, undermining their own economic development. The cultural profile of these countries consists in low individualism and masculinity, short term orientation or the so-called immediatism, and high power distance. Most of these countries experienced the centralized planning system in the past, which highly vitiated their informal institutional background through the coercion and the forced obedience in front of the regime, or due to limited experience related to competition and innovation, to fear when dealing with uncertainty and a rather collectivist mentality, where the rules did not equally protect all the individuals but favoured those who had the power to the detriment of the rest. Countries with such cultural specificities have a higher predisposition to tolerate and moreover, to apply and perpetuate shadow practices because they take advantage of the compromise culture and are not afraid of rules. Such results are on the same wavelength with the existing body of literature in the field and, moreover, with the perspective promoted by the New Institutional Economy.

When addressing the first step of our analysis, a cultural feature such as power distance highlights the existing inequality among society members. The attitude of the country's specific culture towards these inequalities will provide significant information with respect to the affinity of the people towards obedience and acceptance of the fact that power is unequally distributed. Individualism or collectivism will point out the degree of interdependence maintained between the members of a society or, on the contrary, the long-term commitment to a certain group in exchange for loyalty. Masculinity versus femininity provided relevant information concerning the focus of society members on competition, achievements, and success, or on being satisfied with what they have. Generally, in a masculine society, conflicts are solved by fighting them out, while in a rather feminine society, compromises are preferred. Uncertainty avoidance tells us how societies deal with ambiguity, but this cultural dimension also provides some interesting and extremely important insights with respect to the mentality of the people and their ability to remain attached to rigid codes of belief and behaviour or, on the contrary, to cope with challenges and act flexibly. Long versus short term orientation is a dimension revealing the way in which past experiences, traditions and norms are kept alive and serve as a landmark for the current and further challenges. Consequently, it highlights the affinity of a society to perpetuate the so-called path dependence phenomenon or, in other words, to allow pre-existing mental constructs, occurred based on past events, to shape current decisions and even to decide further outcomes. The last dimension, indulgence or restraint, emphasizes people's capacity to control their intentions and wishes (Geert Hofstede, 2021). In different terms, it reflects the optimism or, on the contrary, the level of pessimism derived from the wrong perception that human actions must be circumscribed to the existing body of social norms.

The results of the panel data analysis after applying the first estimation method are pointed out in Table 3.

Table 3. Common Constand Method

Variable	Coefficient	Probability
C	23.78992	0.0000*
GI	-0.000146	0.0335**
FR	-0.002881	0.0066*
HDI	-0.000194	0.07125***
R² = 0.147763		DW = 0.694607

Note: *Statistically significant at 1%; **Statistically significant at 5%; ***Statistically significant at 10%.

Source: Personal assessment in EViews

The R-square value indicates that the variation of the shadow economy is explained by the selected independent variables in a proportion of 14.77%, which is not satisfying enough. Moreover, there may be some autocorrelation problems but, even so, the independent variables are statistically significant. We will apply the Fixed Effects model but, before that, an F test is required to see if there is any variability of the constant.

Table 4. Redundant fixed effects test

F test value	Probability
16.910435	0.0000*

Note: *Statistically significant at 1%

Source: Personal assessment in EViews

The redundant fixed effects test is based on the null hypothesis according to which all the constants (for each section) are the same. The probability associated is lower than 5%, which indicates that we can reject the null hypothesis. In other words, the fixed effects model can be applied.

Table 5. Fixed Effects Method

Variable	Coefficient	Probability
C	36.62656	0.0000*
GI	-0.001617	0.0000*
FR	-0.005022	0.0012*
HDI	-0.001609	0.0230**
R² = 0.428546		DW = 1.9655106

Note: *Statistically significant at 1%; **Statistically significant at 5%;
 Source: Personal assessment in EViews

According to the fixed effects model, our variables: government integrity, fundamental rights and human development index are negatively correlated with shadow economy, an aspect which is correct and explains the shadow economy in a proportion of 42.85%. This is a good result for a heterogeneous panel analysis.

Table 5. Random Effects Method

Variable	Coefficient	Probability
C	24.46229	0.0000*
GI	-0.000794	0.0000*
FR	-0.003695	0.0042*
HDI	-0.000985	0.0620**
R² = 0.172933		DW = 1.623595

Note: *Statistically significant at 1%; **Statistically significant at 10 %;
 Source: Personal assessment in EViews

This estimation of the model is not satisfactory, given the lower R square which points out that the independent variables explain the variation of shadow economy in a proportion of 17.29%. The Hausman Test will be applied as to choose the best estimation model between the fixed and random effects ones.

Table 6. The result of the Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. df	Probability
Random effects	42.539026	4	0.0000*

Note: *Statistically significant at 1%;
 Source: Personal assessment in EViews

The probability associated to the test is lower than 5%, so we reject the null hypothesis and the fixed effects model remains the best to express the correspondence between the model and the data set. Given the fact that it essentially captures some specific features that vary between the 28 European countries, such a result was not surprising. As we have previously pointed out, these countries belong to distinct clusters, each group with

its own cultural specificity. Also, we can observe some distinctive approaches towards dealing with integrity, fundamental rights as pillars of democracy and human development among these countries. From this perspective, our results are on the same wavelength with the ones of Feige (1997), Elgin & Öztunali (2014), Achim et al., (2018) or Pukin (2020).

Conclusions and limitations

Shadow economy remains an important endogenous limitation on growth and prosperity. Despite all initiatives undertaken to limit and prevent such toxic practices, the human being will always be guided by bounded rationality, information asymmetry and risk. When opportunism enters the social game, the situation becomes even more complicated because transaction costs to reduce shadow activities are too high. In general, when adjusting to a situation, people need written rules that clearly state what is allowed and what is forbidden, but most of the analysis neglects the dominant role of the informal, unofficial rules of the game; some are so rigid that centuries or at least decades are required to change. This is culture, or the mentality of people, but it can also highlight a set of norms of behaviour, beliefs, attitudes, practically the most important prerequisites to shape a normal society. In our paper, we intended to provide evidence with respect to the major influence of such an informal sector on the level of shadow economy.

As our results have emphasized, a higher presence of the informal economy can be associated with some specific cultural features such as a high-power distance, a rather feminine and collectivist society, with a significant level of uncertainty avoidance, a lower indulgence level and a high to moderate level of long-term orientation. Such results may be regarded as an extension of the New Institutional Economy by shaping an even more precise profile guided by rather extractive than inclusive rules of the game and by creating the auspicious premises for opportunistic behaviours, corruption, and low ethical standards, etc. The results of our panel data analysis illustrate an extension of the cluster analysis because it once more provides support for the existing discrepancies between the EU 28 countries in terms of informal institutional contribution to the country-level extent of the shadow economy phenomenon. Consequently, those countries guided by ineffective mentality which tolerate or even encourage lower government integrity, nepotism, public money theft, low work ethics are the same countries with a higher level of illiteracy, poor education and living conditions, people that can be easily manipulated, those who accept limited fundamental rights and liberties. The lack of trust in a fair legal system does not bother them but is, on the contrary, perceived as an “open window” to opportunistic behaviour and informal economic activities implying gaining or hiding easy money without much effort.

Conversely, the countries with the lowest shares of informal economy in their GDP are the ones that serve as examples of good practices when cultural specificity is addressed. Practically, they have already benefitted from a solid inclusive informal institutional basis transposed into order, attachment to effective social, economic, or political rules, discipline, trust, work ethics, integrity, and equity. On such a fertile ground, the respective societies lead in terms of education, civilization, standards of living, government integrity, democracy, and fundamental rights, and therefore, informal practices are not welcome here. Precisely because people have higher living standards and feel protected within

society, they are not willing to avoid the legal system, to weaken their democracy and self-destroy what they have built in decades through collective efforts.

From a particular perspective, Romania is the country with the second highest level of shadow economy from the entire European Union and fully validates the result of our study. According to both cluster analyses, it belongs to the third group of countries confronted with higher shares of informal economic activities hindering growth and prosperity. In 2007, when the country joined the European Union, people believed that the new status would determine a sort of "great transformation" and the "European vaccine" would heal all the problems that could not be solved in more than two decades of transition. Unfortunately, Romania confirms that the changing process must come from inside the society and not from outside. While the mindset of the people is still harmed after the experience of centralized planning and coercion, while our most common values, beliefs and attitudes are vitiated by the extractive political and economic institutions which guided the country on its way to the market economy, these pre-existing mental constructs remained alive and have created an auspicious background for shadow activities. Many other EU countries are in a similar condition and, consequently, informal institutions do matter when fighting against shadow economy because the solutions are within us and our will to change the way we think and act.

Our study also has some limitations. First, we nominate the difficulty to find some relevant statistical variables able to capture the quality of informal institutions. Even though Geert Hofstede Institute provides six cultural dimensions, these can only be used as cross-section data and no series were available. Secondly, there is a limited availability of time series data. For instance, although the information provided by World Values Survey is representative for the quality of informal institutions, it is not available for a long period of time and not for all European Union countries. In the case of Romania, the data is available only for the short period of 2017-2020, which has not been useful for a panel data approach.

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