

# Perceived Corruption and Informality among Croatian Businesspeople\*

Barbara Frey, Bruno Škrinjarić, Jelena Budak\*\*

## Abstract

The pervasiveness of corruption in Croatia is documented by corruption perception indicators and surveys, yet there is no comprehensive knowledge about corruption and informality in the private sector. This quantitative study uses primary survey data of Croatian business actors to determine business perceptions and attitudes towards corruption and informality. The results show that Croatian businesspeople express low trust in institutions, but do not see them as obstacles to doing business. Similarly, Croatia's EU membership is perceived as insignificant in the fight against corruption and informality. The SMEs are allegedly suffering more due to corruption, whereas the large companies are seen as the main generators of corruption. Corrupt behaviour and informal practices in everyday business are more accepted and used by the owners and managers working in small and micro firms. This study thus contributes to research on doing business and managerial behaviour and offers policy recommendations to mitigate the harmful effects of corruption and informality.

**Keywords:** corruption, informality, perception, Croatia, business

**JEL Codes:** D22, D73

## 1 Introduction

Croatia is a country that went through the transition process by harmonising its legislation with relevant international documents and adopting the liberal market economy. As such, it 'returned to Europe' by joining the EU in 2013 (Šeperić 2011). However, due to the turbulent post-Yugoslav period and because of the rocky privatisation process and its impact on socio-economic structures (Domović 2013), the perception of corruption by Croatian citizens remains high (Transparency International 2021). Croatians see corruption as a remedy to an inefficient state and express very low confidence in public and state institutions as they have no faith in the state's willingness to decisively tackle the corrupt practices within its ranks (Jurić 2020). Similarly, an astounding 92 % of citizens perceive government corruption as a major problem in their country, which

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\*\* Barbara Frey (Corresponding author), MA, PhD Researcher, Faculty of Business, Economics and Management Information Systems, University of Regensburg. Email: barbara.frey@ur.de. Main research interests: corruption and informality in business, state capture and business, business history in Southeast Europe.

Bruno Škrinjarić, PhD, Research Associate, Institute of Economics, Zagreb. Email: bskrinjaric@eizg.hr. Main research interests: economics of education, applied econometrics, labor economics.

Jelena Budak, PhD, Senior Research Fellow in Permanent Position, Institute of Economics, Zagreb. Email: jbudak@eizg.hr. Main research interests: economics of corruption, institutions, public sector policies, privacy in an on-line environment, illicit behaviour.

places Croatia at the top of the list of the EU countries whose citizens are troubled by corruption (Transparency International 2021). The exhibited low levels of trust in political structures paints a picture of a society that is still not democratically consolidated and is burdened by corruption and informal practices. For this reason, research on corruption remains as relevant as ever.

Similarly, businesspeople in Croatia also have a bleak view of the domestic business environment. Namely, in the 2022 Eurobarometer Business Survey on Corruption, 93 % stated that corruption is widespread in Croatia (the highest perception level in the EU), and 66 % said corruption is a serious problem when doing business. These results also show a negative trend when compared with the 2019 Eurobarometer Business Survey on Corruption where Croatian businesspeople had a somewhat better opinion of the presence of corruption in their country. Previously, in the 2013–14 Global Competitiveness Report, corruption is cited as the third most problematic factor for doing business in Croatia (the first two were inefficient bureaucracy and political instability) (World Economic Forum 2013). When it comes to nepotism and patronage, in 2022, 60 % of Croatian businesspeople see these as serious issues for their company when doing business in their country (Eurobarometer 2022).

Corruption in Croatia is not just an issue of perception. The public is informed about real cases of corruption from affairs that were heavily covered by the media, and especially about corruption scandals in business, which certainly provides a basis for the perceptions of corruption among businesspeople in Croatia. The Croatian justice system has had to deal with several high-level corruption scandals, where those involved came from the very top of business and political structures: for example, the Agrokor affair, the Hypo-Alpe-Adria affair, the JANAF affair, and finally, the INA affair, which was first reported on just one month before data collection for this research began (Hina 2022).

The presence of informal institutions and practices in doing business in Croatia is another important phenomenon to explore as it is (still) prevalent in the country and in the whole Balkan region (Gordy/Efendic 2019). Between the legal framework and everyday business practices, there exists a gap characterised by informality, clientelist relations, and interactions built on strong personal relationships (*Ibid.*). These personal ties encompass the functioning of the entire public life, including the business sphere (Županov 2002; Cvijanović/Redžepagić 2011). For this reason, this research aims to contribute to better understanding of the aforementioned dissonance and asymmetry between formality and informality in order to identify the policy gaps.

To assess the presence and extent of corruption and informality in the private sector, this research will focus on the perception of business actors actively involved in everyday business in Croatia. The survey designed for the purpose of this research focused on the business to government (B2G) and on business

to business (B2B) manifestations of corrupt and informal activities. Given the target group of this research, it is important to survey the active participants in the field of focus (in this case, business environment) because the attitudes and circumstantial characteristics of businesspeople shape their perception of corruption beyond what could be rationalised by personal experience of corruption (Gutmann/Padovano/Voigt 2019). Moreover, those individuals that are more work engaged, and/or committed (this being the case particularly for company owners and senior managers—the target population of this research), and who were previously exposed to corruption, tend to perceive corruption as a greater obstacle than those respondents who are not involved in business dealings and do not have the aforementioned experience of corruption (Azfar/Murrell 2009). This study thus addresses the following research questions: i) what level of trust do Croatian businesspeople have in institutions, ii) what are the perceived obstacles to their business in terms of institutions, regulations, crime, and corruption, iii) what is the perceived role of the EU membership in curbing corruption and informality, iv) are SMEs more affected than large companies and v) do they play different roles in generating corruption and informal practices? Finally, we are interested in vi) whether there are differences between opinions expressed by different groups of business actors and, if so, vii) whether they are related to differences in socio-demographic attributes of businesspeople and/or the characteristics of the firms they represent.

This paper is structured as follows: after the introduction, an overview of the existing research and theoretical framework are presented. This is followed by a short breakdown of the Croatian political and economic context as well as the aspects important for understanding the potential prevalence of corruption and informality. Section 4 presents the data and methodology used. The results, which are presented in Section 5, are then discussed in Section 6, together with concluding remarks, policy and managerial recommendations, limitations, and avenues for further research.

## 2 Literature review

Transition is a process of transformation from central planning to a market economy, involving broad institutional changes and reforms at all levels of society. It is often labelled as the greatest social change in modern Europe (Hare/Turley 2013). This systematic transformation has undoubtedly created entrepreneurial opportunities that did not exist before, as evidenced by the fact that private sector accounts for a large share of the output in all of the Yugoslav successor states (Uvalić 2018). Thus, the market economy has been mainly achieved with heterogeneities between different countries. However, the expectations of long-term growth in living standards, as predicted by the World Bank in 1996, have only been partially achieved and some of the negative effects of capitalism

were not mitigated in a timely manner (Bartlett 2008; Milanović 2014; Uvalić 2018). Income inequalities, the poor quality of public services, inadequate tax systems, and administrative burdens are common to most of the post-transition countries in Europe.

The economic and political transition from socialist Yugoslavia to capitalism created opportunities for certain actors to achieve economic gains. This was possible due to the institutional void, which occurred in those changing times. Such a void refers to the limitations or absence of the institutional arrangements that would normally sustain a newly established capitalist market (Khanna/Palepu 1997). Institutional voids created by the transition open the pandora box of potential pitfalls for the criminalisation of businesses (Cavotta/Phillips 2022). These are mainly manifested in forging close ties with policymakers and in forming (business) alliances with family and friends (Ge et al. 2017; 2019). These two phenomena usually lead to business and/or state capture (Ateljevic/Budak 2010) and to the prevalence of nepotism (Šimić Banović 2019). So, during the transition, a small circle of people managed to tilt the playing field in their favour at the expense of the wider public.

As a consequence of unstable governance during the transition period was that informality and corruption became, or remerged, as important features in doing business in Southeast Europe (Efendic/Ledeneva 2020). Institutions in a society can be formal or informal, and as such they affect the behaviour and attitudes of businesspeople in ways that either constrain or enhance business activity (North 1990). While formal institutions are considered to reduce uncertainty and risks in doing business, informal ones are often regarded as underminers of efficiency, legal certainty (and legality), and competition (Welter/Smallbone 2011; Smallbone/Welter 2012). However, at times of disruption (like transition and/or war), informal institutions can also serve as a substitute for non-existent formal institutions, or as a supplement for formal institutions that lack quality and efficiency (Gordy/Efendic 2019; Horak et al. 2020; Ledeneva/Efendic 2021). In their desire to bear the burden of the uncertainty more easily and to cope economically with the new reality, individuals and entire social groups rely more and more on primary social ties—‘traditions, customs, moral values, religious beliefs and all the other norms of behaviour that have emerged spontaneously, survived the test of time, and served to bind the generations’ (Pejovich 2008:11). Despite this positive role that informality may play at the initial stages of transition, in the long run, it usually leads to the emergence of clientelism and corruption, which become critical obstacles to the establishment of an efficient state structure (Rose-Ackerman 1999). In the post-communist societies, both tensions and complementariness between formal and informal institutions exist and persist, despite political and administrative efforts to ‘formalise’ the informality (Šimić Banović 2015). This disharmony between the two types of institutions increases transaction costs for economic exchanges and thus hinder

the creation of wealth (Pejovich 2003; Williams/Franic 2016). The existence of strong informal institutions reveals the presence of political instability and cronyism, a system in which certain business elites benefit from nurturing close ties with political elites (Haber/Maurer/Razo 2002). These create unfair competition where links to politicians allow for lax law enforcement and corruption, to the detriment of other businesspeople and consumers (Krasniqi/Desai 2016; Rajwani/Liedong 2015; Frey/Lecić 2023). Such a situation can also be described as ‘business capture’ of a state (Bartlett 2021). In the high-context countries that are structured on the basis of interpersonal relations, such as Croatia, doing business tends to be regulated by informal rules (Šimić Banović 2015). Since they are informal, these rules and practices could also swiftly become corrupt, depending on the context in which they are played out. The cultural context thus blurs the boundaries between sociability and instrumentality, and as such it is almost impossible to determine when informality ends and corruption begins (Ledeneva 2014). Nevertheless, those who engage in corrupt and informal activities demonstrate low trust in formal institutions and perceive greater levels of corruption in their respective societies (Wallace/Latcheva 2006). Consequently, this leads to a vicious circle where operating outside of the law further decreases trust in the state institutions and increases ‘opportunities’ for corruption (Vorley/Williams 2016).

The perseverance of informality and corruption in the region of Southeast Europe can be attributed to many factors. Historians tend to take into consideration the following: century-long economic underdevelopment, social and cultural backwardness (e.g., religiosity, traditionalism, etc.), dictatorships, occupations/colonialism (Ottoman or Austro-Hungarian, or both), communism, transition, and wars (Petrovic 2008; Stulhofer et al. 2008). While we cannot ignore the role of history, the empirical data show that informality and corruption are predominantly rooted in the persistent economic underdevelopment, and the peripheral position in Europe (Cieślik/Goczek 2018; Uberti 2018). Thus, informality and corruption are therefore not a cultural phenomenon of this particular part of Europe, as they exist all over the world. (e.g., Christiansen/Neuhold 2012).

Finally, the role of the EU membership in relation to corruption and informality, is shown to be twofold. On the one hand, the EU's joint initiatives to combat illegal and unlawful practices are expected to reduce corruption, but on the other hand, there are reasons to believe that corruption may increase due to the lack of EU enforcement of the (national) anti-corruption institutions and policies (Alfano/Capasso/Goel 2021). Essentially, the EU has made effective corruption control a condition for membership, but it does not have the legal means to effectively sanction non-compliance once a country is an EU member (Lacatus/Sedelmeier 2020). The recent studies of the Eastern enlargement and the Croatian accession in 2013 have shown that after the accession of Croatia to

the EU, corruption actually increased (Kartal 2014; Alfano/Capasso/Goel 2021). These findings highlight the importance of the EU's political leverage and its pressure on respective governments to deliver reforms that decrease corruption *during* the accession process. After the accession, however, this pressure disappears and corruption re-emerges (Kartal 2014). This trend can be attributed to the general democratic backsliding in the new EU Member States (Eastern Enlargement), all of which share the common historical legacy of democratic and economic transition after the breakdown of socialism (Kotarski/Petak 2021).

### 3 Political and socio-economic context in Croatia

The transformation process that started in 1989 in Central and Eastern Europe (CEE) could be considered as 'Year One', or *tabula rasa* of 1989 (Elster et al. 1998). The countries of the former East Bloc and Yugoslavia had a historic opportunity to execute a successful transition towards a capitalist system. Fukuyama (1989) calls this historical moment 'the end of history,' when capitalism became the only game in town. While this claim and prediction could have been true for some of the CEE countries, the Croatian case was different, mainly because of the violent dissolution of the former Yugoslavia. Croatia's transition also differed from the other Eastern European countries due to the chosen privatisation model, which was launched in an unstable political and social context. A new political and economic elite, legitimised by the war and the struggle for independence, emerged from these factors (Grubiša 2005). For the current Croatian state and its economy, these have had significant, if not decisive, consequences.

With the fall of communism in the early 1990s, Yugoslavia fell apart along the former socialist republics that composed it, which mainly followed ethnic lines. This period was marked by wars, war profiteering, smuggling, the rise of the black-market economy, lack of rule of law and forced population displacement. These events led to a situation where the high levels of corruption perception persisted, despite the existence of anti-corruption laws and other legal instruments. The political elites and war profiteers who emerged victorious from the Croatian war for independence had an interest in maintaining the *status quo* (Elster et al. 1998; Van Duyne et al. 2009). Today, after more than 30 years of transition, democratisation and pacification of the Western Balkans region, Croatia remains a country characterised by high levels of corruption (Piplica/Čovo 2011), marked by crony capitalism (Franičević 2001; Franičević 2002; Ivanković 2017), and troubled by organised crime (Kmezić/Atanasijević 2019).

The corruption in Croatia is systemic. Although there is no consensus on the concept of systemic corruption (see Vergara 2020), it is commonly described as the pervasive, deep-rooted prevalence of a wide set of corrupt practices,

where corrupt practices are the expected behaviour rather than the exception (Persson/Rothstein/Teorell 2019). The previous studies conducted in Croatia mostly discuss political grand corruption, but since it is systemic, corruption encompasses administrative (petty) corruption as well, thus ‘contaminating’ the entire society. Consequently, the poor implementation of the rule of law further contributed to systemic corruption, despite the fact that strengthening the rule of law was one of the key factors in meeting the criteria to join the EU (Elbasani/Šabić 2018; Kmezic 2016; Von Bogdandy/Ioannidis 2014). Corruption in Croatia takes many forms: bribery, nepotism, clientelism and other forms of favouritism, embezzlement of funds, fraud, and trading services and influence (Grubiša 2010; Budak 2007). It persists for decades, and it is present in various sectors (see, for example, Vuković 2017 for systemic political corruption at the local level in Croatia, or Ateljević and Budak 2010 for corruption in public procurement). In recent times, emigration and a poor business climate have been seen as the most harmful effects of corruption in Croatia (Jurić 2018; Kurecic/Kokotovic/Haluga 2023).

At the same time, the Croatian society remains burdened with extensive informal clientelist and nepotistic networks (Šimić Banović 2019), and is afflicted by the neo-patrimonial political conditions (Beqiri 2020). Županov (2002) mentions two main socio-cultural continuities that came to the fore in the post-communist period in Croatia: communist heritage and elements inherited from the traditional society. From the communist period, Croatia inherited a preference for political loyalty over professional abilities. Political suitability is considered incomparably more important than professional competence and personal moral integrity. Such politicisation has continued after the first multi-party elections in 1990 until today (*Ibid.*). The prevailing issue when doing business in Croatia is the need to maintain close relationships with the incumbents (Šimić Banović 2015a). This is ‘almost considered to be a must for running a successful business, particularly when dealing with the State’ (Šimić Banović 2015b:195). The second aspect characteristic for the entire Southeast Europe is the existence of strong traditional culture, which can best be described as a set of traditional obligations towards local kinship or politically based social networks (Čaldarović et al. 2009), and as a synonym of the concept of collectivist culture (Šimić Banović 2019). The negative attitude towards any wealth accumulation within the national framework is part of a value orientation that Županov (2002) calls radical egalitarianism, a normative phenomenon, the essential components of which are anti-professionalism and anti-intellectualism. Burić and Štulhofer (2016:362) contributed further to this theory by pointing out that the egalitarian syndrome may be a hindrance for the country’s socio-economic development because ‘the negative associations were observed between the acceptance of values associated with the egalitarian syndrome and county-level development and competitiveness scores, GDP and early entrepreneurial activity’.

However, even though social and economic problems remain—particularly the faulty regulatory environment that is below the EU average, low skill levels, and limited access to finance (OECD 2020)—Croatia did make significant progress in terms of development and approximation to the Western European economies. Despite all the setbacks, Croatian society and the ruling elites did in fact reach a consensus on the necessity of Euro-Atlantic integrations at the beginning of the 2000s, which brought many legal, economic, and political obligations for the society (Bartlett 2002). Because of these efforts, the general conditions for entrepreneurship have improved over the last decade, and Croatia became an EU member in 2013, and a part of the Eurozone in 2023. Thus, on the one hand, there is the ongoing problem of systemic corruption in Croatia and on the other hand, the economy is doing well (Croatian National Bank 2023). It is thus very difficult to measure the direct and indirect impact of corruption on the real business results of companies, and studies to date have failed to reach a consensus on this matter (e.g., Van Vu et al. 2028; Nam et al. 2020; Williams/ Kedir 2016; Donadelli/Fasan/ Magnanelli 2014). Generally, it is considered in the literature that the harmful effects of corruption to business sector prevail over the possible positive ones when corruption may work as a ‘grease in the wheels’ (Dutta/Sobel 2016).

Croatia’s EU integration process yielded anti-corruption policies and strategies that mainly concentrated on political corruption. For example, public procurement is considered to be particularly vulnerable to corruption, so some direct measures have been put in place, such as the so-called ‘anti-corruption article’ in the law on public procurement (Gnip 2022). Preventing conflict of interest in public procurement legislation served more to raise awareness but proved ineffective (as evidenced by numerous scandals in public procurement procedures in Croatia).

This anti-corruption agenda has been the focus of previous research on corruption. Several studies on corruption in the private sector have been conducted in Croatia since its independence, and most of them found corruption to be widespread in the Croatian business environment. Budak (2007) showed that Croatian entrepreneurs make informal payments/bribes most frequently to public officials in order to obtain ‘protection’ of their business interests, or circumvent the burdensome regulations, i.e., to offset formal institutional inefficiency. These findings also show a high perception amongst businesspeople of the prevalence of corruption in Croatia. Businesspeople from the countries of the Western Balkans (and Croatia) understand corruption as helpful ‘grease in the wheels’ and as a government-related issue. On a positive note, they also believe individual action and firms’ internal code of ethics could contribute to restraining corruption (Budak/Rajh 2014). This study also revealed the importance of the institutional context and the citizens’ trust in the institutions. Characteristic for Croatia is the high level of citizen opportunism and the lack

of public trust in institutions, both of which could undermine anti-corruption efforts (Budak/Rajh 2012). As a result of the government's failure to solve the problem of corruption at the operational level, the private sector perceives public administration behaviour towards business entities as highly corrupt. As such, corruption is viewed as a prominent and significant issue for the economy (Pureta/Pureta 2019; Glavinja/Cerić/Nahod 2017; Botrić 2020). Similarly, firms tend to engage in B2B corruption to tactically counter perceived bureaucratic power (Rajeev/Budak/Rajh 2015). The prominence of informal networking between businesspeople in Croatia as well as among entrepreneurs throughout Southeast Europe (Ledeneva/Efendic 2022), is thus significant, especially in terms of time and money invested (Efendic/Ledeneva 2019; Budak/Vizek 2015).

## 4 Data and Methodology

Data for this research were collected through a survey designed for owners and/or managers in Croatian firms. The information collected was quantitatively processed by testing for scale reliability and assessing the validity of latent constructs and by conducting cluster analysis.

### 4.1 Questionnaire

Data were collected through a survey in the form of an online questionnaire administered from September to October 2022. The questionnaire was comprised of multiple-choice questions, open questions, and rating scales. The questionnaire was originally developed by the authors, based on the literature review on corruption and informality. The first extended version of the questionnaire was previously applied by the authors in the research focused on Serbia (Frey/Škrinjarić/Budak 2022). In Croatia, we used the shortened and adapted version of the questionnaire divided into three thematic parts. In the first section, the respondents were asked about acceptable business practices and about common gifts exchanged between business partners in Croatia. In the next section, respondents were presented with several hypothetical situations designed to probe their perceptions of corruption. A range of responses to these situations was offered, stretching from law-abiding to corrupt. These reactions were offered as nuanced choices that also included a grey zone between the two extreme answers. Thus, respondents could mark more than one answer because the hypothetical situations and their reasons for choosing a particular answer may overlap. The final part of the questionnaire applied the Likert scale to assess the respondent's perception of corruption in relation to public officials and institutions.

## 4.2 Sample

Following and adapting the sampling strategy of Iootty et al. (2014), the final questionnaire (representative in terms of firm size and Croatian NUTS2 regions) was sent out to 24,320 Croatian firms i.e., to their contact e-mail addresses. For each size category, a stratified sample was constructed within each region as a control variable. The first stage included the creation of a table containing data on the size of each region stratum. The share of each stratum in the population was then calculated and used to compute the number of firms from each stratum to be selected for the sample. 652 responses were received, resulting in a completion rate of 2.7 %. Respondent characteristics are presented in Table 1. The majority of the respondents in our sample were male directors of micro firms in the financial and legal services sector in the City of Zagreb, between 40–49 years of age, with a tertiary education and about 13 years of business experience. Overall, the sample obtained is representative of the population in terms of firm size and region (Figure A1 in Appendix). In terms of the gender ownership structure of Croatian enterprises, based on the latest available data for 2021 from the Croatian Financial Agency (Financial Agency, 2021), 18.6 % of enterprises were female-owned and 51.4 % were male-owned (the remainder of 30 % accounts for mixed ownership, ownership by legal entities, and unspecified ownership). Thus, our sample is fairly representative of male-owned firms but is somewhat over-represented in terms of women entrepreneurs.

**Table 1. Summary statistics of sampled respondents.**

Variable	N	%
Gender		
Female	291	45 %
Male	361	55 %
Age categories		
≤19	1	0 %
20–29	12	2 %
30–39	105	16 %
40–49	225	35 %
50–59	205	32 %
≥60	100	15 %
Education		
Secondary	137	21 %
Tertiary	392	60 %
Post-graduate	123	19 %
Size of respondents' firm		
Micro	467	72 %
Small	133	20 %

Variable	N	%
Medium	40	6 %
Large	9	1 %
Position of respondent within firm		
Owner/Director	465	71 %
Manager	138	21 %
Worker	49	8 %
Sector of respondents' firm		
Agriculture	16	2 %
Manufacturing	68	10 %
Utilities	19	3 %
Construction	68	10 %
Wholesale and retail	80	12 %
Transport and warehousing	20	3 %
Catering	34	5 %
ICT	83	13 %
Financial and legal services	118	18 %
Other services	146	22 %
Region of respondents' firm		
Pannonian Croatia	91	14 %
Adriatic Croatia	197	31 %
City of Zagreb	271	42 %
North Croatia	82	13 %
Is firm global?		
Not global	611	94 %
Global	41	6 %

### 4.3 Analysis

The first stage of analysis included testing for scale reliability and assessing the validity of latent constructs used in this study. We used Cronbach's alpha (CA) and Alpha-if-deleted coefficients, and exploratory and confirmatory factor analysis. CA coefficient is used as a measure of scale reliability because it measures internal consistency, that is, how closely related a set of items is as a group. The Alpha-if-deleted coefficient is used for measuring the internal consistency of the scale. The dimensionality of the scale is tested by exploratory and confirmatory factor analysis.

In the second step of the analysis, we clustered different respondents based on their views on topics connected to corruption and informal behaviour. Clustering was carried out using the K-means cluster method with Euclidean (L2) distance

as a similarity measure. This method partitions  $n$  observations into  $k$  clusters in which each observation belongs to the cluster with the nearest mean (cluster centroid). Clustering was based on several variables that were derived from the theoretical and literature review: (1) Trust in institutions (TRUST); (2) Regulation as an obstacle for business (REG); (3) Crime as an obstacle for business (CRIME); (4) Institutions as an obstacle for business (INST); (5) SMEs are more negatively affected by corruption (SME); (6) Large businesses are a source of corruption (LARGE); and (7) Perceived decrease in corruption following Croatia's accession to the EU (EU). Due to missing values in some of these variables, our sample was reduced to 531 observations. The Calinski and Harabasz pseudo-F index (Calinski/Harabasz 1974) and the Duda-Hart  $Je(2)/Je(1)$  index (Duda/Hart/Stork 2001) were used as a criterion for determining the optimal number of clusters in a dataset. For both rules, index values are calculated for several different number of clusters, and larger index values indicate more distinct clustering. Mean values were calculated for TRUST, INSP, REG, and CRIME variables, and these mean values were taken as input in the K-means cluster analysis (Table A1 in Appendix). Both SME and LARGE are measured using a single-item scale, so their original values were taken as input in the K-means cluster analysis.

The third stage of data analysis was dedicated to identifying the differences among the groups (clusters) of respondents. The differences were tested using the chi-square test and ANOVA.

## 5 Results

### 5.1 Latent construct estimation

Exploratory factor analysis (EFA) was conducted to preliminary test the dimensionality of the latent constructs used. Principal component was used as a method of factor extraction, and the Kaiser-Guttman rule (specifying that factors with eigenvalues greater than 1 are retained) was used as a method for determining the number of extracted factors (Table A2(A) in Appendix). The results indicate that measurement scales for all of our latent variables are unidimensional as all items have high factor loadings on their respective factor (Table A2(B) in Appendix). The EFA results also indicate that latent variable scales pose the attribute of convergent validity. Therefore, the initial set of selected items can be considered as one measurement scale for each of those variables.

Table A3 in the Appendix presents the CA coefficients and item correlations for all items used to estimate latent constructs. Values of CA coefficient and the results of the measurement scale reliability analysis indicate that the measurement scales used in constructing these variables possess a satisfactory level of reliability. Both analysed types of correlations indicate a high degree of correlation

of each statement with the overall measurement scale, while Alpha-if-deleted values indicate that in this case, the removal of any statement would cause a decrease in CA coefficient, i.e., the scale would become less reliable.

Convergent validity was also assessed with Confirmatory factor analysis (CFA). The obtained results, presented in Table A4 in the Appendix, further confirm the EFA results. Fit indices show that the measurement model has an acceptable level of fit to empirical data. All analysed items load on their respective factors, and all loadings are statistically significant. Thus, the results indicate that all scales are unidimensional.

## 5.2 Cluster analysis

The results of the K-means cluster analysis differentiated three homogeneous segments of business respondents (Table 2). The total sample is rather evenly distributed, with each cluster representing about one-third of the surveyed sample.

**Table 2. K-means cluster analysis results.**

Variables	Total sample (n = 531)	Cluster 1 (n = 167)	Cluster 2 (n = 208)	Cluster 3 (n = 156)	ANOVA F-statistics
Trust in institutions (TRUST)	2.39	2.79	2.01	2.42	50.63***
Regulation as an obstacle to business (REG)	2.69	2.36	3.45	2.06	168.37***
Institutions as an obstacle to business (INST)	1.90	1.57	2.64	1.26	149.81***
Crime as an obstacle to business (CRIME)	2.92	2.25	3.91	2.27	228.37***
SMEs more negatively affected by corruption (SME)	3.65	2.68	4.42	3.72	130.95***
Large businesses as source of corruption (LARGE)	3.60	2.48	4.01	4.29	203.02***
Accession to EU reduced corruption (EU)	2.33	2.96	2.12	2.00	39.09***

Notes: \*\*\* p<0.01. Apart from the F-statistic, the table contains means for all variables across total sample and different clusters. Items were measured on a 5-point Likert scale ranging from 1 to 5 (for TRUST: 1 – Don't have trust at all, ..., 5 – I have full trust; for REG, INST and CRIME: 1 – Not an obstacle at all, ..., 5 – Very large obstacle; for SME, LARGE and EU: 1 – Don't agree at all, ..., 5 – I agree completely).

On average, firms' representatives do not perceive institutions as obstacles to their business. Neither regulation nor crime are perceived as barriers to doing business. However, organised and petty crime in Croatia could become a threat to doing business, considering that the average respondent is uncertain as to whether this presents an obstacle to their business (mean value of 2.92). There

is a prevalent opinion amongst the firms' representatives that corruption more negatively affects SMEs and that large companies are generating corruption in Croatia. Given that 91 percent of the surveyed firms are SMEs, this result is not surprising.

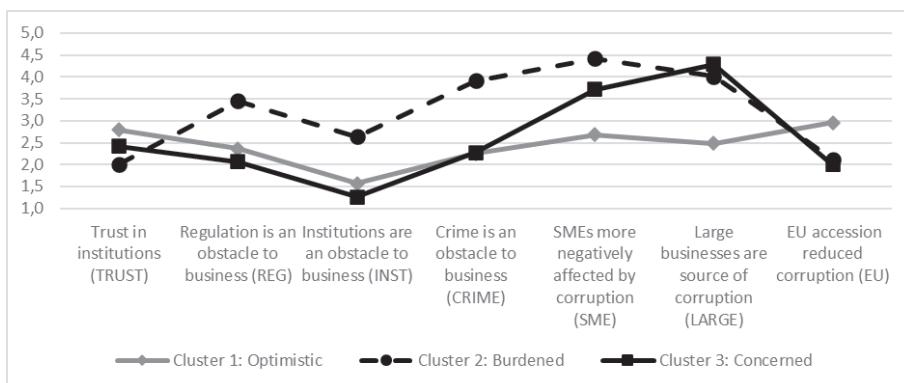
The answers collected for each segment of respondents reveal differences in the opinions of cluster members (Figure 1):

*Cluster 1 – stands for positively minded. Its members do not perceive any barriers hampering their business or at least, see the conditions for doing business as less negative when compared to the other two clusters.*

*Cluster 2 – stands for the distinguishing characteristic of its members, who feel constrained by obstacles when doing business.*

*Cluster 3 – are managers and owners of those firms who do not perceive many business barriers other than corruption, and this corruption issue won't be solved by the EU either.*

**Figure 1. K-means cluster analysis results.**



Cluster 1—*Optimistic* members (grey line in Figure 1) have slightly more trust in institutions and have the lowest perceptions of regulation, institutions, and crime as being an obstacle to their business. The opposite of the prevalent opinion of Cluster 2—*Burdened* and Cluster 3—*Concerned*, businesspeople from Cluster 1—*Optimistic* do not think that SMEs are more negatively affected by corruption than large companies and do not see large businesses as sources of corruption in Croatia. Further, Cluster 1—*Optimistic* has a more positive opinion of the EU accession role in reducing corruption when compared to the other two clusters. Ultimately, Cluster 1—*Optimistic* has overall the most positive views on the dimensions of doing business investigated in this survey.

In contrast, members of Cluster 2—*Burdened* (dashed black line in Figure 1) express contrary opinions in five out of seven variables measured. They have the lowest trust in institutions and see many obstacles to their business. According to the opinion of this group of businesspeople, institutions are close to becoming a barrier to their firms' operations. However, the biggest obstacle for Cluster 2—*Burdened* businesspeople is crime, followed by regulations. This group strongly believes that the negative impacts of corruption are affecting SMEs more and that large companies are the source of corruption. They strongly disagree with the statement that the EU accession process helped in reducing corruption in Croatia. Among all the clusters, Cluster 2—*Burdened* has the most negative perceptions of the conditions of doing business in Croatia.

The common opinion of Cluster 3—*Concerned* members (solid black line in Figure 1) matches the opinion of Cluster 1—*Optimistic* members regarding institutions and obstacles to their business. However, when it comes to the role of the EU accession in reducing corruption, their views are pessimistic. Businesspeople in Cluster 3—*Concerned* do not perceive the EU accession as a factor that helped combat corruption. Large companies are intensely perceived as sources of corruption. Members of Cluster 3—*Concerned* on average agree that corruption affects SMEs more negatively, and this distinguishes them from Cluster 1—*Optimistic* (mostly disagree) and Cluster 3—*Concerned* (strongly agree).

Differences in the opinions of the three clusters might be explained by the socio-demographic characteristics of cluster members (Table 3). Businesspeople in Cluster 1—*Optimistic* are prevalently male (70 %). They belong to the highly educated respondents since the share of those with post-graduate education in Cluster 1—*Optimistic* surpasses the total sample average. Furthermore, micro firms in Cluster 1—*Optimistic* are underrepresented. Small firms in propelling sectors such as ICT, financial services, and utilities are more represented in this cluster when compared to the other two clusters. This is most likely in accordance with the expertise necessary for these sectors, which are in line with the education levels of the Cluster 1—*Optimistic* respondents. All clusters share a similar distribution to the total sample in terms of age and regional origin of respondents.

Businesswomen are more represented in Cluster 3—*Concerned*. It is interesting that Cluster 1 and Cluster 3 conform in all aspects except in opinion regarding large companies as a source of corruption and the negative influence of corruption on SMEs. Here businesswomen have a stricter opinion on the negative effect of corruption and on the negative role of large companies in generating corruption. Besides notable gender differences, Cluster 3—*Concerned* is above the sample average composed of micro-firms (77 %).

In Cluster 1—*Optimistic* managers and owners of middle- and large-sized firms are overrepresented when compared to the total sample average. Consequently, seeing large companies as a source of corruption in Croatia is an opinion more shared among members of Clusters 2 and 3. It is difficult to say from the survey data if this view of Cluster 2—*Burdened* members is partly due to the larger size of the companies presented in their cluster, where they may have witnessed corrupt corporate business operations. The same experience-based reasoning may support this opinion of Cluster 3—*Concerned* members, where the representation of micro-firms and the construction sector is above average.

**Table 3. Sample and clusters characteristics.**

Variable	Values	Total sample (n = 531)	Cluster 1 – Optimistic (n = 167)	Cluster 2 – Burdened (n = 208)	Cluster 3 – Concerned (n = 156)	Chi-squared test statistic
Gender	Female	218 (41.1 %)	50 (29.9 %)	82 (39.4 %)	86 (55.1 %)	21.522***
	Male	313 (58.9 %)	117 (70.1 %)	126 (60.6 %)	70 (44.9 %)	
Age categories	<=19	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	2.566
	20–29	12 (2.3 %)	3 (1.8 %)	6 (2.9 %)	3 (1.9 %)	
	30–39	84 (15.9 %)	24 (14.5 %)	32 (15.5 %)	28 (18.1 %)	
	40–49	177 (33.5 %)	56 (33.7 %)	74 (35.7 %)	47 (30.3 %)	
	50–59	175 (33.1 %)	56 (33.7 %)	66 (31.9 %)	53 (34.2 %)	
	>=60	80 (15.2 %)	27 (16.3 %)	29 (14 %)	24 (15.5 %)	
Education	Secondary	112 (21.1 %)	28 (16.8 %)	49 (23.6 %)	35 (22.4 %)	6.445
	Tertiary	313 (58.9 %)	96 (57.5 %)	124 (59.6 %)	93 (59.6 %)	
	Post-graduate	106 (20 %)	43 (25.7 %)	35 (16.8 %)	28 (17.9 %)	
Size of respondents' firm	Micro	371 (70.1 %)	100 (59.9 %)	152 (73.4 %)	119 (76.8 %)	19.497***
	Small	114 (21.6 %)	43 (25.7 %)	43 (20.8 %)	28 (18.1 %)	
	Medium	35 (6.6 %)	21 (12.6 %)	9 (4.3 %)	5 (3.2 %)	
Position of respondent within firm	Large	9 (1.7 %)	3 (1.8 %)	3 (1.4 %)	3 (1.9 %)	3.717
	Owner/Director	375 (70.6 %)	113 (67.7 %)	154 (74 %)	108 (69.2 %)	
	Manager	116 (21.8 %)	43 (25.7 %)	40 (19.2 %)	33 (21.2 %)	
Sector of respondents' firm	Worker	40 (7.5 %)	11 (6.6 %)	14 (6.7 %)	15 (9.6 %)	18.497
	Manufacturing	12 (2.3 %)	5 (3 %)	3 (1.4 %)	4 (2.6 %)	
	Utilities	59 (11.1 %)	25 (15 %)	23 (11.1 %)	11 (7.1 %)	
Region of respondents' firm	Construction	18 (3.4 %)	5 (3 %)	6 (2.9 %)	7 (4.5 %)	4.08
	Wholesale and retail	58 (10.9 %)	20 (12 %)	25 (12 %)	13 (8.3 %)	
	Transport and warehousing	67 (12.6 %)	16 (9.6 %)	34 (16.3 %)	17 (10.9 %)	
Is firm global?	Catering	16 (3 %)	2 (1.2 %)	8 (3.8 %)	6 (3.8 %)	2.119
	ICT	29 (5.5 %)	11 (6.6 %)	11 (5.3 %)	7 (4.5 %)	
	Financial services	62 (11.7 %)	22 (13.2 %)	20 (9.6 %)	20 (12.8 %)	
Is firm global?	Legal services	95 (17.9 %)	27 (16.2 %)	37 (17.8 %)	31 (19.9 %)	2.119
	Other services	115 (21.7 %)	34 (20.4 %)	41 (19.7 %)	40 (25.6 %)	
	Pannonian Croatia	76 (14.6 %)	22 (13.5 %)	31 (15.3 %)	23 (14.7 %)	
Is firm global?	Adriatic Croatia	164 (31.4 %)	50 (30.7 %)	59 (29.1 %)	55 (35.3 %)	2.119
	City of Zagreb	217 (41.6 %)	74 (45.4 %)	87 (42.9 %)	56 (35.9 %)	
	North Croatia	65 (12.5 %)	17 (10.4 %)	26 (12.8 %)	22 (14.1 %)	

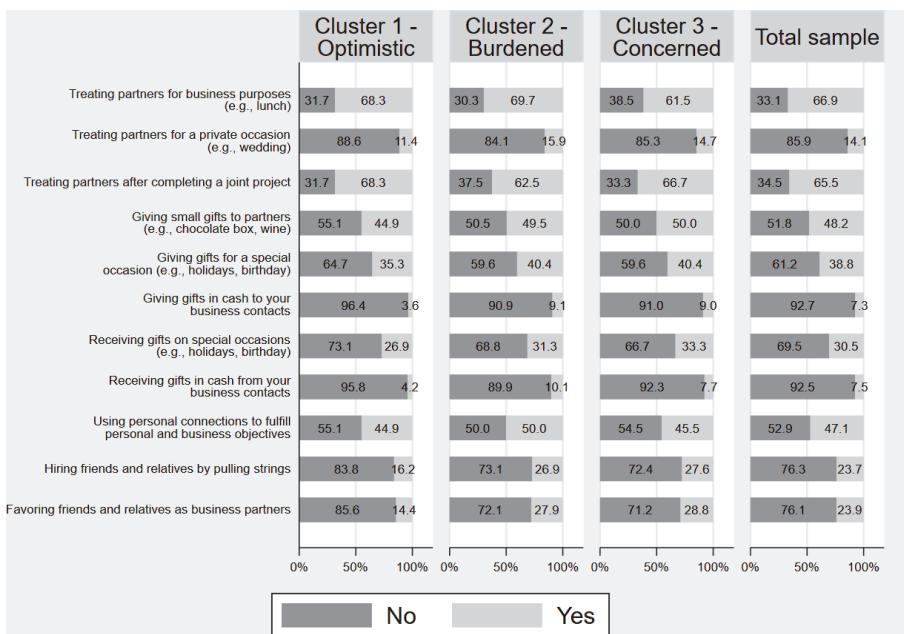
### 5.3 Informal behaviour

Once the typology of clusters has been established, detailed analyses of attitudes and behaviours follow to shed light on the opinions and informal practices of businesspeople in Croatia. For each cluster, we examine and compare three aspects: attitudes towards informality in business, respondents' assessment of the presence of informal practices, and respondents' tendency to participate in informal practices themselves.

#### 5.3.1 Attitudes towards B2B informal practices

Respondents generally believe that it is completely acceptable to treat partners (e.g., take them out to lunch) for business purposes. As for receiving and giving gifts in cash, these practices are unacceptable for over 90 percent of Croatian businesspeople, particularly for Cluster 1—*Optimistic* members (Figure 2). Generally, members of Cluster 1—*Optimistic* are stricter about informal behaviour compared to the sample average. These respondents in particular do not mix their professional and private lives—they are against celebrating with or treating business partners for private occasions (e.g., birthdays, weddings, baptisms, etc.). They are similarly strongly opposed to using private relationships for employment purposes and are highly unlikely to prefer people from their private life as business partners. This could be explained by the socio-demographic features of this Cluster (Table 3)—these respondents are highly educated professionals working in large and middle-sized companies in expertise-driven sectors such as finance and IT.

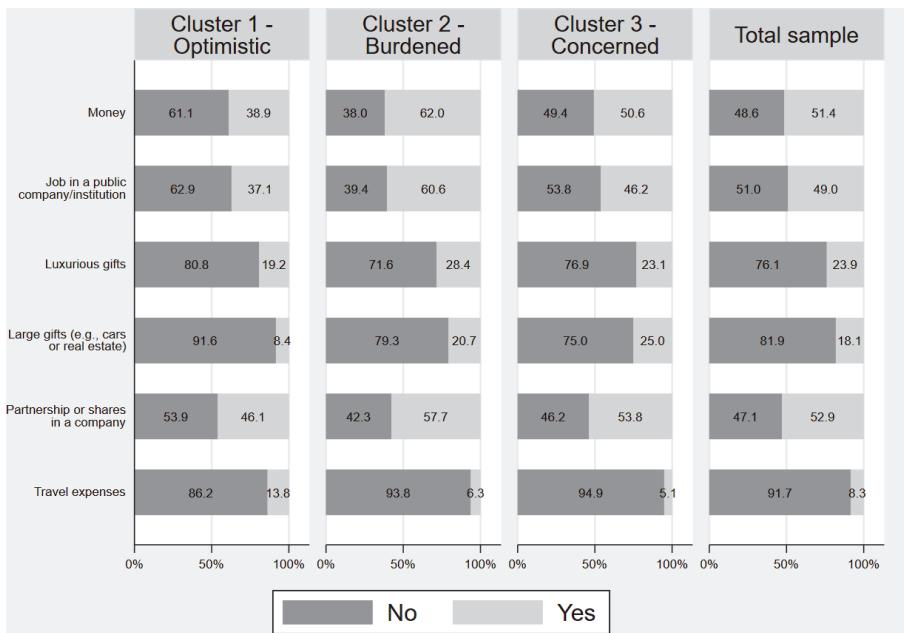
On the other hand, Cluster 3—*Concerned* respondents demonstrate some old-fashioned business practices and as such, do not have negative attitudes towards hiring friends or relatives. Accordingly, they consider giving gifts to business partners to be an acceptable and welcome practice. Attitudes of Cluster 3—*Concerned* and Cluster 2—*Burdened* members are slightly more in favour of informal practices—they tend to support the giving of gifts amongst business partners. This is especially evident in Cluster 2—*Burdened* - every tenth member of this cluster believes that receiving monetary gifts from business partners is acceptable behaviour, and half of them view the use of personal connections for personal and business purposes as acceptable. These two clusters are more open to giving preference in business to friends and family (as opposed to the opinions of Cluster 1—*Optimistic*). A likely explanation for this finding is that the members of Clusters 2 and 3 are above the sample average and come from micro and small firms, and thus are more likely to form personal relationships while doing business.

**Figure 2. What are acceptable behaviours and gifts in business?**

### 5.3.2 Perception of common informal practices

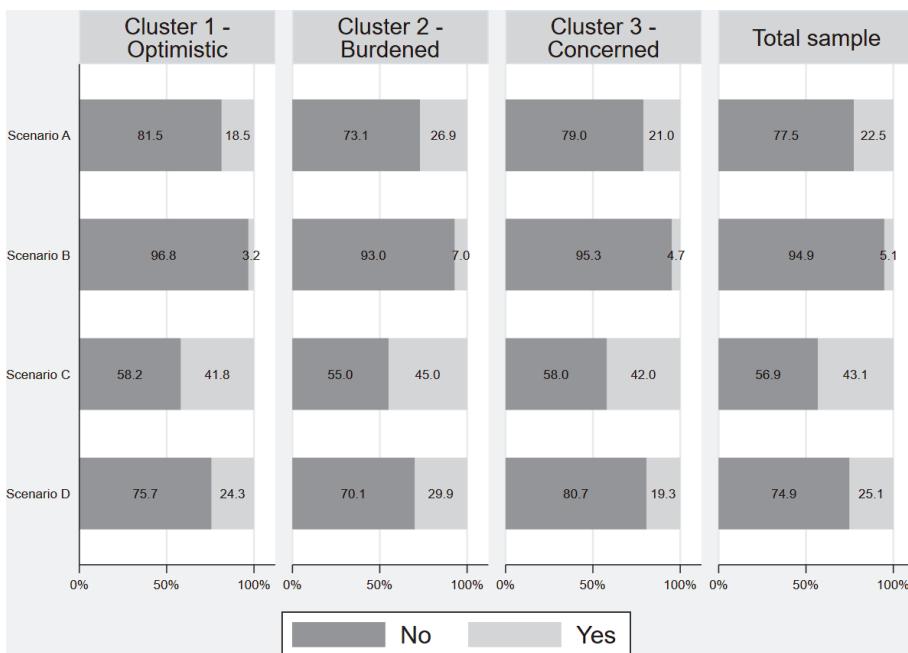
Figure 3 shows the type of gifts that respondents say are common in the business milieu in which they operate. This part of the survey addressed respondents' perception and their impression of the existence and extent of informal practices in business, which can be best described as 'greasing the wheels'. Offers of business partnerships or blocks of shares in a company are both seen as common gifts in the Croatian business community. Illegal gifts such as money or employment in the public sector are also viewed as common *quid pro quo*. Least common are gifts such as luxury items and luxury travel arrangements. The previously expressed differences in attitudes between the clusters coincide with the respondents' assessment of the presence of informal practices. Thus, for example, members of Cluster 1—*Optimistic* think that gifts in the business community are less common than what is perceived by members of Cluster 2—*Burdened* and Cluster 3—*Concerned*. For example, more than 60 percent of members of Cluster 2—*Burdened* think 'gifting' a job in the public sector is common, compared to 37 percent of Cluster 1—*Optimistic* members. This describes a more pessimistic view of the presence of corruption in society among populations in Clusters 2 and 3.

**Figure 3. What are the most common gifts in the business community?**



### 5.3.3 Propensity and tolerance for informal behaviour

Negative attitudes towards informal practices and fewer encounters or less experience with informal practices in their business environment seem to shape the propensity of businesspeople in Croatia to engage in informal behaviour. Hence, the propensity to accept and give gifts, to offer and receive favours, and to make unethical offers, is observed to be lowest among the members of Cluster 1—*Optimistic* (Figure 4). Surprisingly, and contrary to the previously expressed opinions of Cluster 1—*Optimistic*, all the clusters share similar positive reactions in Scenario C (Figure 4), where they were asked about hiring a business partner's family member in exchange for preferential treatment for their respective firm. This indicates that nepotism still has strong roots in Croatian business. In all three clusters, approximately every second person would hire the cousin of the business partner. In addition, all the clusters demonstrate the same lack of risk propensity (as evidenced in Scenario D in the Figure 4), which supports the theory of radical egalitarian syndrome (Županov 2002; Burić/Štulhofer 2016).

**Figure 4. Propensity for B2B bribes.**

Notes: Different scenarios presented in Figure 4 include:

- After successfully completing a joint project, your business partner gives you an expensive hand watch as a gift (worth 2,000 EUR). He gives it to you and all he says is that he will count on you in his future dealings. Would you accept this gift?
- Your business partner asks you for a favour: he will give you a block of stock in his company if you let him use your storage space. When you ask what he wants to store there, he doesn't want to tell you. Would you do him this favour?
- Your business contact asks you for a favour. He asks you to hire his cousin in your company. In exchange, he would offer you more favourable conditions in the contract between yours and his company. Would you hire his cousin?
- You are negotiating a business contract with one of your business partners. Before signing the contract, your business partner says that he will only agree to the current contract if you commit to working together on another future project. The details of the new project and contract are not known to you. Would you continue to do business with that partner?

## 6 Discussion and Conclusion

The most interesting views of firms' representatives are related to institutions. Respondents showed a very low degree of trust in Croatian institutions but, at the same time, do not consider institutions as obstacles to their business. The perception of weak institutions thus remained consistent over the last 10 years, given that the same finding was reported by Budak and Rajh (2012) in 2012. The positive change, however, is that the institutions, despite their perceived operational weaknesses and inefficiencies, are no longer seen as a problem, which used to be the case (Budak 2007; Budak/Rajh 2012; Rajeev/Budak/Rajh 2015).

The opinion of businesspeople about the role of the EU accession process in curbing corruption, in both the state administration and in the business sector, is in line with the average opinion about the importance of Croatian institutions. It seems that institutions are considered weak and not relevant for business (paradoxically, not even as an obstacle for doing business in Croatia), and that the EU accession process has not contributed much to reducing corruption, as has been the case in other CEE countries (Kartal 2014). This finding reflects the reality of Croatia's protracted EU accession process, where the last negotiation closed the (in)famous Chapter 23 on Judiciary and Fundamental Rights that focused on the fight against corruption and organised crime (Vachudova 2019; Elbasani/Šabić 2018; Bojinović Fenko/Urlić 2015). The elimination of corruption was the final condition set by the EU for Croatia's ascension to the EU, and as a demonstration of its dedication to the EU accession process, the Croatian government famously arrested former PM Sanader on corruption charges in 2010, a year before signing the EU accession treaty. Therefore, from the perspective of Croatian businesspeople, the EU accession did not contribute much to curbing corruption.

The well-educated managers and owners coming from middle-size and large companies, operating in ICT and other propulsive sectors, where a high level of expertise and professionalism is demanded, tend to use less informal practices in doing business. It can be assumed that due to the size of the company, the financial resources available, and the necessary skills possessed by these individuals, informality may have lost its role. Internal company rules and skill-based outputs of these firms ousted the informal practices as their use was no longer needed. This indicates that large companies have the means to do 'clean' business and their internal practices should be adopted by small and micro firms as well—be it in the adoption of code of conduct or better external regulation of firms' conduct. On the other hand, managers and owners from micro and small firms accept more informality in business. These firms usually do not have an internal code of conduct and typically rely on the business savviness of owners themselves. What is lacking in knowledge, expertise, organisation,

etc. is probably compensated by networking and engaging in informality within the business community in which they operate. The smaller the size of firms, the harder it is for them to mitigate the corruption risk (for empirical evidence for Croatia see Goel/Budak/Rajh 2015, and Budak/Rajh 2005). Ironically, firms' representatives, especially those coming from small and micro enterprises, believe that SMEs are more affected by the negative consequences of corruption and that large companies are inciters of corruption in Croatia, even though our findings show otherwise.

Since most of the previous research on corruption in this region focused on political and grand corruption, this paper contributes to the literature on corruption in business, particularly in B2B relations. Furthermore, these findings could prove relevant when investigating corruption and informality in the wider context of doing business in East and Southeast Europe, principally in those countries that went through significant disruptions and transformations.

This article also offers managerial-related policy implications. The Croatian Chamber of Commerce, the Association of Entrepreneurs, and other business associations in Croatia, should promote anti-corruption standards and a code of conducts among firms (and particularly among small and micro firms). The up-and-coming new industries—such as the ICT sector, have the potential to pave the way for the introduction of and adherence to good governance standards in doing business. Although they are still often perceived as sources of corruption, large companies should take the lead in this process. Moreover, since corruption presents a huge reputational risk, large companies should prevent it or mitigate it by applying better company communication strategies. Admittedly, this is unlikely to succeed as long as there are corruption scandals involving large companies such as the Croatian national oil company INA.

As far as hiring procedures are concerned, the results show that this continues to be a hot topic in Croatia. The practice of hiring, particularly in the state-owned enterprises and the entire public sector, is based on the non-merit criteria, as previously noted by Šimić Banović (2019). Nepotistic practices are still not perceived by businesspeople as harmful as they should be, and as such represent an obstacle to the vigorous development of the Croatian economy. For this reason, more scrutiny and transparency in the recruitment process is required, which could be achieved either through better internal controls, or through external inspections.

Lastly, this research is not without limitations. Due to the complexity of the topics examined, there is a need for more in-depth investigation on corruption and informality among businesspeople. The sample acquired could be further analysed quantitatively, which would provide more information by considering further influences from the formal-informal institutional dynamics or from the specific determinants in Croatia. However, for the sake of readability and the

theme focus, this was not done for the purpose of this article. Furthermore, the quantitative research approach, which was used for this article, managed to identify the scale of informality and corruption, without fully identifying their underlying social and political causes. For this reason, further research on the same topics would be advisable, but using qualitative research methods. Also, as is often the case when researching controversial topics, respondents may have been influenced by their cognitive biases. Although the questionnaire was designed so as not to be suggestive, the respondents may have noticed that some of the questions were asking about corrupt behaviour and may therefore have censored themselves.

The future research could go further by deepening the analysis of perceptions of corruption and informality among particular population groups—for example, research focusing on gender, age, education level, firms' size, sector, and business performance. As seen in this research, these characteristics contribute significantly to shaping the perceptions of and the tendency to accept corrupt or informal behaviours as licit. While this research focused on Croatian firms, respondents from the government, public administration, and members of NGOs should be surveyed as well to assess perceptions and insights into their actual behavior with respect to certain important decisions and consequences. Another avenue for research is a supranational comparison with similar countries to identify which processes and phenomena influence the (non) existence and the extent of corruption and informality in business.

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## Appendix

Table A1. Items used for latent constructs.

Latent construct	Items	Description	Mean	St. dev.	Min.	Max.
Trust in institutions (TRUST)	trust_courts	Trust in: courts	2.12	0.99	1	5
	trust_dorh	Trust in: state attorney office	2.25	1.00	1	5
	trust_aco	Trust in: state anti-corruption office	2.34	1.06	1	5
	trust_pros	Trust in: state prosecutor	2.38	1.05	1	5
	trust_kom	Trust in: communal office	2.29	1.00	1	5
	trust_police	Trust in: police	2.86	1.00	1	5
Regulation as an obstacle for business (REG)	obst_law	Business obstacles: legislation	2.85	1.32	1	5
	obst_LawWork	Business obstacles: labour regulation	2.83	1.28	1	5
	obst_LawProc	Business obstacles: startup procedures	2.86	1.33	1	5
	obst_AdminCosts	Business obstacles: administrative costs	3.16	1.35	1	5
	hinder_workinsp	Negative influence on firms: inspection	2.41	1.34	1	5
	hinder_taxauth	Negative influence on firms: tax authority	2.55	1.36	1	5
Crime as an obstacle for business (CRIME)	hinder_customs	Negative influence on firms: customs	2.1	1.29	1	5
	obst_Politics	Business obstacle: political situation	3.09	1.28	1	5
	obst_OrgCrime	Business obstacle: organised crime	2.96	1.38	1	5
Institutions as an obstacle for business (INST)	obst_PettyCrime	Business obstacle: petty crime	2.71	1.36	1	5
	hinder_courts	Negative influence on firms: courts	2.18	1.35	1	5
	hinder_dorh	Negative influence on firms: state attorney office	1.75	1.13	1	5
	hinder_pros	Negative influence in doing business: state prosecutor	1.61	1.02	1	5
	hinder_kom	Negative influence on firms: municipal services monitoring office	1.97	1.20	1	5
	hinder_police	Negative influence on firms: police	1.64	0.98	1	5
	hinder_aco	Negative influence on firms: state anti-corruption office	1.64	1.05	1	5

Note: Items were measured on a 5-point Likert scale ranging from 1 to 5 (for TRUST: 1—Don't have trust at all, ..., 5—I have full trust; for REG, INST and CRIME: 1—Not an obstacle at all, ..., 5—Very large obstacle).

**Table A2. Exploratory factor analysis results.**

Panel A: Eigen values

Factor	Eigen values	Cumulative eigen values	Percentage of explained variance	Cumulative percentage of explained variance
1	9.1005	9.1005	0.3957	0.3957
2	3.1471	12.2476	0.1368	0.5325
3	1.8503	14.0979	0.0804	0.6130
4	1.1827	15.2806	0.0514	0.6644
5	0.9983	16.2789	0.0434	0.7078
6	0.8897	17.1686	0.0387	0.7465
7	0.7482	17.9168	0.0325	0.7790
8	0.5866	18.5034	0.0255	0.8045
9	0.5379	19.0413	0.0234	0.8279
10	0.5093	19.5506	0.0221	0.8500
11	0.4455	19.9961	0.0194	0.8694
12	0.4095	20.4056	0.0178	0.8872
13	0.3400	20.7456	0.0148	0.9020
14	0.3197	21.0653	0.0139	0.9159
15	0.3077	21.3730	0.0134	0.9293
16	0.2928	21.6658	0.0127	0.9420
17	0.2513	21.9171	0.0109	0.9529
18	0.2381	22.1552	0.0104	0.9633
19	0.2299	22.3851	0.0100	0.9733
20	0.1981	22.5832	0.0086	0.9819
21	0.1794	22.7626	0.0078	0.9897
22	0.1303	22.8929	0.0057	0.9953
23	0.1072	23.0001	0.0047	1.0000

Panel B: Eigen vectors

Item	F1	F2	F3	F4
trust_courts		0.8275		
trust_dorh		0.8934		
trust_aco		0.8480		
trust_pros		0.8463		
trust_kom		0.6594		
trust_police		0.5627		
obst_law			0.557	
obst_LawWork			0.612	
obst_LawProc			0.643	
obst_AdminCosts			0.544	
obst_Politics				0.728
obst_OrgCrime				0.750
obst_PettyCrime				0.735

Item	F1	F2	F3	F4
hinder_courts	0.751			
hinder_dorh	0.860			
hinder_pros	0.848			
hinder_kom	0.724			
hinder_police	0.783			
hinder_workinsp	0.515		0.639	
hinder_taxauth			0.719	
hinder_customs			0.632	
hinder_coc			-	
hinder_aco	0.803			

Notes: Principal factor method was used, and factors were rotated using orthogonal varimax rotation. Factor loadings lower than 0.5 were dropped and are not reported (".-").

**Table A3. Item correlations and Cronbach alphas.**

Latent construct	Item	Inter-item correlation	Item-rest correlation	Cronbach alpha	Alpha-if-deleted
Trust in institutions (TRUST)	trust_courts	0.5407	0.7129	0.881	0.8548
	trust_dorh	0.5063	0.8208		0.8368
	trust_aco	0.5229	0.769		0.8457
	trust_pros	0.5292	0.7543		0.8489
	trust_kom	0.5995	0.5525		0.8821
	trust_police	0.6043	0.5442		0.8842
Regulation as an obstacle for business (REG)	obst_law	0.4685	0.6656	0.865	0.841
	obst_LawWork	0.4609	0.6979		0.8369
	obst_LawProc	0.4684	0.6642		0.841
	obst_AdminCosts	0.5022	0.5382		0.8582
	hinder_workinsp	0.4774	0.6322		0.8457
	hinder_taxauth	0.4752	0.6365		0.8446
Crime as an obstacle for business (CRIME)	obst_Politics	0.731	0.6803	0.857	0.8446
	obst_OrgCrime	0.5488	0.8198		0.7087
	obst_PettyCrime	0.718	0.6889		0.8359
Institutions as an obstacle for business (INST)	hinder_courts	0.6914	0.703	0.923	0.918
	hinder_dorh	0.6356	0.868		0.8971
	hinder_pros	0.6398	0.8572		0.8988
	hinder_kom	0.6927	0.7152		0.9185
	hinder_police	0.6688	0.7697		0.9099
	hinder_aco	0.68	0.7303		0.914

**Table A4. Confirmatory factor analysis results.**

<b>Trust in institutions (TRUST)</b>	
trust_courts	1
trust_dorh	1.131*** (0.049)
trust_aco	1.137*** (0.055)
trust_pros	1.034*** (0.057)
trust_kom	0.685*** (0.06)
trust_police	0.645*** (0.061)
<b>Regulation as an obstacle for business (REG)</b>	
obst_law	1
obst_LawWork	0.974*** (0.071)
obst_LawProc	0.949*** (0.077)
obst_AdminCosts	0.832*** (0.078)
hinder_workinsp	1.131*** (0.089)
hinder_taxauth	1.205*** (0.09)
hinder_customs	1.006*** (0.085)
<b>Crime as an obstacle for business (CRIME)</b>	
obst_Politics	1
obst_OrgCrime	1.397*** (0.083)
obst_PettyCrime	1.101*** (0.074)
<b>Institutions as an obstacle for business (INST)</b>	
hinder_courts	1
hinder_dorh	1.025*** (0.052)
hinder_pros	0.906*** (0.047)
hinder_kom	0.822*** (0.056)
hinder_police	0.735*** (0.046)
hinder_aco	0.807*** (0.05)
<i>N</i>	376
<i>X</i> <sup>2</sup>	958.27***
RMSEA	0.099
CFI	0.871
GFI	0.842

Notes: (\*\*\* ) denotes significance level  $p < 0.01$ . Standard errors are in parentheses. RMSEA = Root mean square error of approximation, CFI = Comparative fit index, GFI = Goodness of fit index.

**Figure A1. Sample representativeness in terms of firm size and region.**

