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Exploring Tolerance Towards Corruption in the European Union Through Experienced Corruption, Perceived Corruption and Institutional Trust

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ABSTRACT

Corruption is a major problem that undermines the foundations of democracy and reduces citizens' trust in institutions. However, even in the world's most advanced countries, citizens accept certain levels of corruption. This tolerance towards corruption (TC) reduces the impact of anti-corruption actions and ends up giving a patina of normality to some corrupt behaviour. Therefore, lowering TC is an important challenge to be faced in the fight against corruption. However, TC is an understudied phenomenon in the literature, with three main gaps: (1) TC has more often been approached as an explanatory variable for other phenomena than as a central variable in the analysis, (2) most of the research studying TC focused on a single country and a single period, which only shows a narrow and static view of the problem and (3) studies are more concerned with knowing the impact of individuals' socio-demographic characteristics on TC than on understanding how their experience of corruption or their personal perceptions of it may affect it. This paper addresses these gaps by analysing, for the 27-EU countries over the period 2013–2022, the extent to which TC may depend on (1) experienced corruption, (2) perceived corruption and (3) personal perceptions of the anti-corruption crackdown. The paper explores the differences among the 27-EU countries and also takes into account the temporal evolution of TC by analysing whether there are differences before and after the COVID-19 pandemic. This paper provides strong evidence that the greater the exposure to corruption, the greater the TC in all the time scenarios considered, which could eventually lead to a very dangerous vicious circle effect. However, no evidence is found in favour of above relations 2 and 3, nor of significant differences between before and after the pandemic. These findings highlight the importance for policymakers and other authorities to devise corrective measures to prevent citizens from being exposed to corruption by promoting a culture of zero TC.

1 | Introduction

Corruption, understood as the abuse or misuse of entrusted power for private gain (Pozsgai-Alvarez 2020), is a serious issue that undermines citizens' trust in institutions (Chang and Huang 2016) and erodes the foundations of democracy (Anand et al. 2023; Drury et al. 2006; Gründler and Potrafke 2019; Thanetsunthorn 2022). Corruption is a multifaceted and complex phenomenon that generates destabilisation and severe political/legal, economic and socio-cultural consequences (Judge et al. 2011; Moreno 2002) because it reduces GDP, distorts income distribution, slows investment and causes inefficiencies, among other problems (Ertimi and Saeh 2013; Gründler and Potrafke 2019; Le and Rishi 2006; Mauro 1995; Tanzi and Davoodi 1998). Many authors have evaluated these effects for different countries. For example, using data from developing countries, Spyromitros and Panagiotidis (2022) contend that a 1% increase in the Corruption Perception Index (ICP) decreases growth by about 0.2% and, based on data from 175 countries, Gründler and Potrafke (2019) show that real per capita GDP decreases by around 17% in the long-run when the reversed ICP (unlike the traditional ICP, assigning higher values to greater corruption and lower values to less corruption) increases by one standard deviation. Beyond the great importance of these macroeconomic figures, it should be noted that the effect of disaffection and lack of trust in institutions caused by corruption is not similar for all individuals, but depends to a large extent on their levels of tolerance towards corruption (TC) (Chang and Huang 2016). TC, also known as corruption permissiveness or corruption acceptance, refers to the extent to which individuals tend to justify or accept certain practices that can be considered to be corrupt (Gong and Wang 2013; Moreno 2002). TC is a key factor in explaining and understanding corruption and has a major influence on how it can be tackled (Gong et al. 2015; Gong and Wang 2013; Hunady 2017; Liu et al. 2023). Indeed, the fight against corruption can only be effective with the active and direct involvement of society (Nalyvaiko 2022; Ralchev 2004), which is totally incompatible with condoning corrupt behaviour or being indifferent to it (Gouvêa Maciel 2021). However, it can be said that a high percentage of citizens maintain a permissive attitude towards corruption, even in developed countries with strong and stable institutions. This is confirmed in the case of the EU by data from the 2022 Special Eurobarometer on Corruption, which indicates that only 63% of those interviewed believe that corruption is unacceptable, while the remaining 37% consider it acceptable or tolerable (European Commission Directorate-General for Communication 2022). In the same vein, Sohns et al. (2024) state that 34% of the citizens they interviewed to evaluate the UK's COVID-19 vaccination programme believed that nepotism/favouritism could be justified in the context of the pandemic to secure early vaccination.

However, despite being a harmful and widespread phenomenon, TC has received little attention in the literature as a central object of research (Liu et al. 2023). In many of the studies in which it is included, it is done indirectly, as a variable that serves to explain other variables or phenomena (Campos-Ortiz 2011; Chang and Huang 2016; Gong and Xiao 2017; Horodnic et al. 2018), and on fewer occasions has it been the variable on which the analysis is focused. For this reason, authors such as Gouvêa Maciel (2021), Hunady (2017), Liu et al. (2023) or Pozsgai-Alvarez (2015) stress that it is necessary to address this gap and focus efforts on exploring TC directly and systematically. The review of the literature on TC also reveals two other important gaps: (1) most of the research shows only a reduced and static understanding of the problem of TC due to the narrow temporal and geographical scope of the studies conducted and (2) most of the research has been limited to studying the relationship between individuals' socio-demographic characteristics and TC, and little has been done to explore how their experience with corruption or their cultural values or personal perceptions of it may affect their TC.

With regard to the first of these two gaps, it is worth noting that the research conducted is dominated by studies focusing on a single country and at a single point in time (de Sousa et al. 2022; Jun et al. 2019; Konstantinidis and Xezonakis 2013; Pozsgai-Alvarez 2015). Although these studies are very important, they only provide a snapshot of TC that is static and confined to a limited geographical area, which is a serious limitation of the literature because it does not provide an all-round view of the phenomenon under study. Research that partially overcomes this limitation (by including several countries at a particular point in time or with data from a single wave) is rare, although research that refers to several points in time or waves is much rarer. If we look first at studies that include several countries at a specific point in time, we see that they pursue a variety of objectives. Some authors do a comparative analysis between two countries. For example, Erlingsson and Kristinsson (2018) analyse the characteristics of individuals that influence TC in Iceland and Sweden, while Gong et al. (2015) investigate the extent to which different perceptions of corruption in Hong Kong and Mainland China may lead to different levels of TC. Other authors try to cover a larger number of countries in the same area to show an overview of the region as a whole. For example, in the case of Latin America, Carrasco and Pavón Mediano (2021) explore several variables related to students' education that act as predictors of TC in five different countries and Lavena (2013) studies the sociodemographic characteristics of individuals that explain the levels of TC observed in six countries. In the case of Europe, research such as Gouvêa Maciel (2021), Keller and Sik (2009) and Pop (2012) stand out. Both Gouvêa Maciel (2021) and Pop (2012) examine which characteristics of individuals explain TC, although the first author also analyses the extent to which experience with corruption can influence TC. Keller and Sik (2009) study the relationship between the perception, the tolerance and the practice of corruption for the 27-EU countries. Other authors consider several countries in different regions. For example, Gatti et al. (2003) use data from 35 different countries worldwide to explore the characteristics of individuals that explain TC. As mentioned, papers that analyse several countries over time are very rare, with notable exceptions such as Malmberg (2019) and Moreno (2002). These two studies examine TC from different perspectives. While Moreno (2002) looks into the effect of cultural factors on TC in 64 countries around the world between 1981 and 2001, Malmberg (2019) analyses how dysfunctional societal contexts could influence the TC of individuals in 84 countries over the period 1995–2014.

This paper aims to address the geographical and temporal limitations by taking into account the 27 EU countries over the period 2013–2022. It is important to note that the contribution

of this paper on this point is twofold. First, the article compares the differences between EU countries and also examines the TC of the region as a whole. Second, the article takes into consideration the temporal evolution by analysing whether there are differences in TC between what happened before and after the COVID-19 pandemic. Although there have been many changes in the EU during the period under study, none can compare with the cataclysm unleashed by the COVID-19 pandemic. This exceptional situation created an ideal breeding ground for corruption and some authors, as Sohns et al. (2024), argue that it favoured the public tolerance towards corrupt behaviour. However, while several scholars have explored the relationship between corruption and COVID-19 (e.g., Dikmen and Çiçek 2023; Mantzaris and Ngcamu 2020; Sriyakul et al. 2022), we have found no studies that compare corruption in the pre-pandemic scenario with the post-pandemic scenario (let alone research that refers to TC in both scenarios). This is therefore an important contribution of this paper.

With regard to the second gap, it is worth noting that studies investigating the factors that may explain citizens' TC often include individual and/or country-variables. Individual variables are usually socio-demographic characteristics of the people surveyed (such as age, gender, employment status, income, etc.) that help to draw the profile of tolerant people. In fact, several authors have shown that individual characteristics such as age, gender or educational level can influence people's TC (e.g., Guo and Tu 2017; Hakhverdian and Mayne 2012; Hunady 2017; Malmberg 2019; Moreno 2002; Pop 2012). The literature so far has focused more on such individual variables than on individuals' experience of corruption or on cultural variables or values (such as individual perceptions of corruption or the fight against it). There are exceptions, such as de Sousa et al. (2022), Gong et al. (2015), Gouvêa Maciel (2021) or Moreno (2002), among others. All these authors study TC by taking into account cultural variables and personal perceptions of corruption (e.g., de Sousa et al. (2022) examine the extent to which citizens' knowledge of official ethical standards has an impact on TC). However, much more work is still needed in this line of research.

This paper aims to address this gap by analysing in detail the extent to which TC may depend on (1) experienced corruption, (2) perceived corruption and (3) personal perceptions of institutional anti-corruption. In addition, the paper examines whether there are differences between the pre-COVID-19 pandemic period and the post-pandemic period.

This paper is structured as follows. Section 2 provides a brief review of the literature on TC and the hypotheses to be investigated. Section 3 explains the methodology, as well as the data and variables used in the analysis. Section 4 shows the results, Section 5 discusses the results and section 6 presents the conclusions of the study.

2 | Literature Review and Hypotheses

Corruption is a multifaceted phenomenon that manifests itself in different ways. Therefore, there is no single definition of this concept in the literature and, by extension, no single definition of what is meant by TC (Hunady 2017; Miller 2006). Some scholars who focus their research on TC in a particular field decide to use a definition that is adapted to that field. For example, Chang & Kerr (2017, 68) argue that TC '*denotes citizens' inclination to condemn a political actor's engagement in graft*'. However, the literature is dominated by more general definitions that could be used in both the public and the business/private spheres (e.g., Gong and Wang 2013; Moreno 2002; Pop 2012). Thus, for example, Moreno (2002, 497) says that TC is '*the extent to which individuals tend to justify certain practices that can be considered to be corrupt*'. The latter perspective, which is broader and more general, is the one taken into account in this paper to explore TC. However, in order to understand the concept of TC in greater depth, it must be clear that corruption and TC are two phenomena that are closely linked. So much so that two classifications of forms of corruption have been presented in the literature, depending on the tolerance that individuals exhibit towards them. Thus, Heidenheimer (1970) distinguishes between three types of corruption scenarios (black, grey and white) depending on the levels of acceptance expressed by elites and ordinary citizens. Black corruption refers to a scenario in which both the elite and ordinary citizens condemn a corrupt action and want it to be punished. Grey corruption refers to a scenario in which the elites may want an action to be punished, but the majority maintains an ambiguous attitude. White corruption refers to a scenario in which the majority (both elite and mass opinion) would not advocate that corrupt behaviour be punished because they consider it tolerable. This categorisation confirms the idea that TC is a widespread phenomenon when it comes to certain behaviours, and that citizens tend to normalise and ignore certain forms of corruption. The other classification (which takes into account the economic dimension of the corrupt act, the type of actors involved and the tolerance) is that which distinguishes between petty and grand corruption. Petty corruption (also known as street level or everyday corruption) occurs between ordinary citizens and public officials and is related to small amounts of money and is usually better tolerated (Heidenheimer 1970; June et al. 2008; Li and Meng 2020; Pozsgai-Alvarez 2020). This form of corruption refers to actions such as deviating from the rules to help friends (missing deadlines, moving up procedures, etc.). Grand corruption relates to larger sums of money, involves companies/elites and public officials or politicians and is usually less well tolerated (June et al. 2008; Pozsgai-Alvarez 2020).

This variety of definitions and classifications is a reflection of the variety of opinions that citizens have on TC. Therefore, in this paper, we have decided to operationalize TC through two different variables (included in two questions of the Special Eurobarometer on Corruption). The first is the tolerance index for corruption (which reflects general TC without referring to any specific type of corrupt behaviour). The second is the tolerance for a specific corrupt behaviour (giving money to get something from the public administration or a public service). We have decided to use these two variables separately in the analyses for two reasons. First, to take into account the general opinion of the interviewees. Second, to take into account a specific act of corruption, which does not leave room for interpretation and which helps to avoid biases in the interpretation of the TC that could alter the results of the research. Taking all this into account, we will study to what extent experience with corruption, perceived corruption and personal perception of the anti-corruption crackdown influence EU citizens' TC.

2.1 | Corruption Experience and TC

When measuring corruption, indicators based on corruption perception or on corruption experience are often used (Charron 2015; Gutmann et al. 2020; Hunady 2017). Therefore, the literature on corruption often talks about individuals' experience of corruption or the types of corrupt practices to which they are exposed (either directly or indirectly). It is true that people are not always willing to confess that they have been corrupt or have had contact with corruption. However, many surveys include questions about experience with corrupt practices that allow researchers to approach their study. Despite this, very few scholars have explored the relationship between TC and corruption experience.

Some scholars who make an indirect and very veiled reference to this relationship are Li and Meng (2020). They actually study the extent to which experience with corruption may have an impact in the Chinese context on the citizens' perceptions of corruption and government anti-corruption measures.

Three studies that do look at the direct relationship between TC and corruption experience (and do so precisely in a European setting) are those of Gouvêa Maciel (2021), Ivan (2023) and Keller and Sik (2009). More specifically, Keller and Sik (2009) show that corruption experience (or practice) and TC are positively correlated, so that the more tolerant towards corruption a population is, the higher the likelihood of corrupt practices. These authors further distinguish between two types of corruptive practices (passive and active). For them a person has an experience with corruption that is considered passive if that person had been talked into corruption at least once in the 5 years, while that experience is active if that person has offered a bribe to a public official at least once in 5 years. Keller and Sik (2009) also study the relationship between active and passive corruption practices and show that both phenomena are strongly and positively correlated. Gouvêa Maciel (2021) and Ivan (2023) also show that victims of corruption tend to get used to it and tolerate it. Both come to similar conclusions, but with quite different analyses. In fact, while Gouvêa Maciel (2021) includes all EU countries in his research, Ivan (2023) focuses on Romania's healthcare system and compares it with the rest of Europe. Both authors show that TC is positively and strongly related to the corruption experience. This happens because as individuals are exposed to corruption, they 'internalise and normalise' certain corrupt behaviours and end up accepting and justifying them. Thus, a vicious circle is generated in which both phenomena reinforce each other. This is certainly a worrying issue, which is why we wish to investigate whether such a vicious circle is occurring in the EU. Therefore, based on the reviewed literature, the following hypothesis is proposed:

H1. *Experience with corruption is positively correlated with TC.*

2.2 | Perceived Corruption and TC

Although evidence of a positive relationship between perceived corruption and TC among countries has been found previously (Cameron et al. 2009; Keller and Sik 2009), in our opinion is the work of Pop (2012) the first significant one in our research line. He establishes two opposing hypotheses regarding a high level of corruption: (1) that it leads to greater TC (supported by the social learning theory of Akers (1977), the perception of widespread corruption makes this behaviour an integral part of the citizen's normal life and makes it more acceptable to the citizen); and (2) that it leads to less tolerance (the injustice derived from greater corruption can reinforce the negative evaluation of corruption). But, based on the 2008 European Values Study with data from 43 European countries, and taking the Corruption Perceptions Index (ICP) as an explanatory variable, none of these relationships is found to be statistically significant. However, more recent studies conducted using Eurobarometer data from 2013 (e.g., Gouvêa Maciel 2021; Hunady 2017) have found a positive causal relationship between the two variables in the EU countries, in line with the argumentation of the first hypothesis of Pop (2012). And while Megías et al. (2023) observe in the 2019 Special Eurobarometer data for Portugal a high perceived corruption simultaneous with a high intolerance to corruption, they do not carry out a causal analysis.

On the other hand, from a consequentialist ethics perspective, TC is also explained if it brings collective and/or individual benefits, despite its illegality. And since part of the population would agree with this way of thinking, this would argue in favour of a positive relationship between perceived corruption and TC.

Therefore, based on these premises and evidence, the following hypothesis is proposed:

H2. *Perceived corruption is positively correlated with TC.*

2.3 | Institutional Fight Against Corruption and TC

In the academic literature, there are many studies focusing on the relationship between corruption and citizens' trust in institutions, and it is generally considered that a lack of trust is the effect of the existence of corruption, which undermines citizens' trust in political institutions because it reduces the efficiency and effectiveness of government actions. In this regard, mention can be made, among others, of the works of Moreno (2002) and Catterberg and Moreno (2006), which find that tolerance/justification of corruption negatively explains political trust with a sample of democratic countries, and Lavena (2013), which, along the same lines as the previous ones, supports the idea of the existence of a vicious spiral in which the continuous acceptance of non-compliance with the rules normalizes such behaviour, which weakens the institutional mechanisms to fight against corrupt practices and increases citizens' distrust. However, Chang and Huang (2016) obtain evidence of a positive relationship between the two variables, TC and institutional trust, with a sample of East Asian democracies. Since TC can differ among people who experience or perceive corruption, based on these differences, many citizens may maintain trust in political institutions if they tolerate unscrupulous acts.

But the opposite relationship has hardly been studied; that is, the one that considers trust in institutions as an explanatory variable and TC an explained variable. This paper considers

the extent to which TC is influenced by citizens' perception of the government's anti-corruption policy, which, to a certain extent, can be considered a proxy for citizens' institutional trust. The only study we are aware of in this line is that of Guo and Tu (2017), conducted through interviews with Chinese officials, and in which they find a negative relationship between trust in the government's anti-corruption efforts and attitude (tolerance) towards corruption. In our view, this evidence could be explained by the adaptation of Lavena's spiraling vicious circle hypothesis.

On the other hand, much empirical evidence confirms a negative association between people's trust in institutions and perceived corruption (Liu et al. 2023). Considering that our hypothesis 2 suggests a positive relationship between perceived corruption and TC, a negative relationship between institutional trust and TC would be expected by virtue of the implicit mediation of perceived corruption.

In accordance with the above arguments, the following hypothesis is proposed:

H3. *The positive perception of the institutional fight against corruption is negatively correlated with TC.*

3 | Methodology

3.1 | Data and Sample

This paper provides an analysis based on the answers given by citizens from 27 EU countries collected in the Special Eurobarometers on Corruption 397, 470, 502 and 523 elaborated respectively by the European Commission in the years 2013, 2017, 2019 and 2022 (European Commission Directorate-General for Communication 2015, 2017, 2020, 2022). So far, no studies have been conducted on these reports with panel data. The period to which these four waves refer has been chosen because 2013 was the first year in which this report collected questions on experience with corruption, and 2022 allows for an analysis of pre-COVID and post-COVID results.

It can be seen that in the period 2013–2022, around 80,000 European citizens have expressed their opinion regarding different aspects related to corruption, with the number of responses obtained (globally and by country) being quite similar in the different periods, as shown in Table 1.

TABLE 1 | Sample: Number of citizens interviewed by countries and years.

Country	Code	2013	2017	2019	2022
Austria	AT	804	756	699	651
Belgium	BE	884	864	804	818
Bulgaria	BG	674	728	718	758
Cyprus	CY	315	320	349	330
Czech Republic	CZ	767	729	732	860
Germany	DE	1247	1254	1252	1172
Denmark	DK	863	865	878	869
Estonia	EE	731	789	772	784
Greece	EL	603	646	618	550
Spain	ES	803	872	854	777
Finland	FI	790	808	787	727
France	FR	922	902	887	857
Croatia	HR	702	678	753	670
Hungary	HU	735	692	643	635
Ireland	IE	714	755	714	675
Italy	IT	726	658	636	657
Lithuania	LT	775	813	804	747
Luxembourg	LU	450	453	430	399
Latvia	LV	792	846	837	812
Malt	MT	300	330	294	379
Netherlands	NL	822	890	837	757
Poland	PL	723	755	666	603
Portugal	PT	783	850	761	694
Romania	RO	516	552	538	483
Sweden	SE	778	870	761	767
Slovenia	SI	741	787	728	732
Slovakia	SK	810	769	833	768
Total		19,770	20,231	19,585	18,931

Table 3 shows the basic statistics of the variables used in the analysis, which are defined in Table 2. Each of these variables has been calculated taking into account the data over the four waves of the Special Eurobarometer on Corruption (from 2013 to 2022). The data for each country is the average of the answers given by the citizens interviewed in each wave.

To facilitate the analysis and interpretation of the results, some of the variables have been created from a previous transformation of the corresponding survey questions (as indicated in the Appendix) to be subsequently incorporated for the calculation of (1) correlations, (2) univariate regressions and (3) panel data regressions. This transformation was carried out with the aim of making the data manageable and more easily interpretable, since incorporating questions with different response categories substantially complicated the empirical study. In addition to the definition of the variables, the Appendix shows the different response options for each question in the survey (last column), as well as the details (definition column) of the question taken into consideration for our analysis.

The dependent variable of the TC model is, as explained in Section 2, collected by two different variables. The first one, tc_1, is the tolerance for a specific corrupt behaviour (giving money to get something from the public administration or a public service) and the second one, tc_2, is the tolerance index

TABLE 2 | Variables definition.

Variables	Definition
tc_1	To what extent do you think it is acceptable to give money if you wanted to get something from the public administration or a public service?
tc_2	Tolerance to corruption
exp_health	Apart from official fees did you have to give an extra payment or a valuable gift to a nurse or a doctor, or make a donation to the hospital?
exp_brib	Do you personally know anyone who takes or has taken bribes?
exp_wit	In the last 12 months have you experienced or witnessed any case of corruption?
exp_daily	Are you are personally affected by corruption in your daily life?
no_rep	Did you report it to anyone or not?
per_country	How widespread do you think the problem of corruption is in your country?
per_lrpi	Is there corruption in the local or regional public institutions in your country?
per_npi	Is there corruption in the national public institutions in your country?
per_bc	Is corruption part of the business culture in your country?
dec	In the past 3 years, would you say that the level of corruption in your country has decreased/increased?
i_prosec	Are there enough successful prosecutions in your country to deter people from corrupt practices?
i_govern	Are the national government efforts to combat corruption effective?
i_polpar	Is there sufficient transparency and supervision of the financing of political parties in your country?
i_impar	Are the measures against corruption applied in your country impartially and without ulterior motives?
G	Gini index of income inequality
IEF	Index of economic freedom

for corruption (which reflects general TC without referring to any specific type of corrupt behaviour). It should also be noted that these variables have been incorporated into our analysis with a negative value to facilitate the interpretation of the results obtained. Considering the data shown in Table 3, it can be observed that 81.15% of respondents never consider it acceptable to give money to get something from the administration (tc_1) while around 63% rate their TC as unacceptable (tc_2).

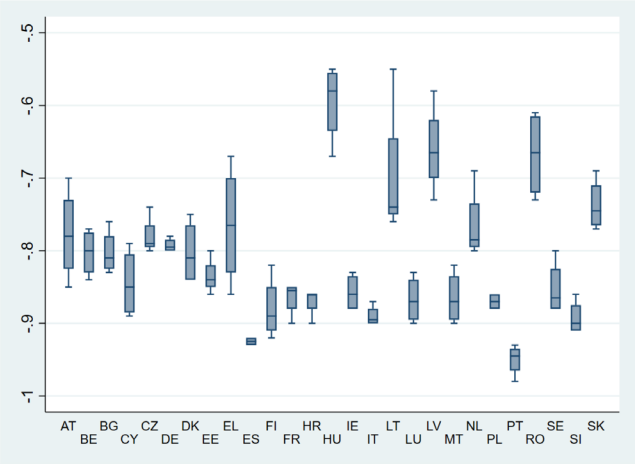

FIGURE 1 | Boxplot of tc1 over country. [Colour figure can be viewed at wileyonlinelibrary.com]

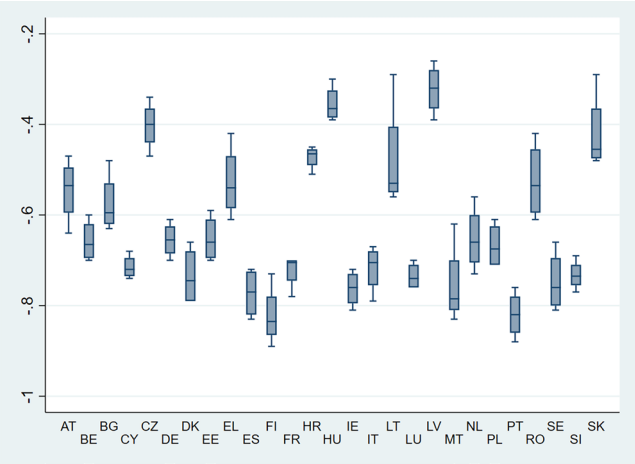

FIGURE 2 | Boxplot of tc2 over country. [Colour figure can be viewed at wileyonlinelibrary.com]

Figures 1 and 2 show the boxplot for the dependent variables over country.

Regarding the analysis of tc_1 across countries in Figure 1, it is observed that a group of Eastern European countries (Hungary, Latvia, Lithuania and Romania) shows the highest tolerance for the corrupt behavior of giving money. It is noted that only between 55% and 75% of the interviewed individuals in those countries consider it unacceptable to give money to obtain something from public administration, data quite far from those offered for Spain and Portugal, where this percentage exceeds 90%. Furthermore, it is particularly striking that the distribution of responses from the interviewed Spanish citizens is symmetric and unbiased, leading us to conclude that the median value practically coincides with the mean (around 93%).

Once again, Figure 2 shows that several Eastern European countries (Czech Republic, Hungary, Latvia and Slovakia, among others) are the most tolerant to corruption (variable tc2), as the interviewed citizens who consider corruption to be unacceptable range from 25% to 45%. Specifically, among all of them, the

TABLE 3 | Descriptive statistics.

Variables	Mean	SD	Min	Max
tc_1	−0.8115	0.0918	−0.9800	−0.5500
tc_2	−0.6276	0.1529	−0.8900	−0.2600
exp_health	0.0558	0.0510	0.0100	0.2800
exp_brib	0.1582	0.0706	0.0500	0.3500
exp_wit	0.0757	0.0427	0.0100	0.2500
exp_daily	0.2791	0.1832	0.0300	0.6800
no_rep	0.0614	0.0379	0.0087	0.2016
per_country	0.7169	0.2241	0.1600	0.9900
per_lrpi	0.7168	0.1556	0.3200	0.9500
per_npi	0.7326	0.1588	0.3300	0.9700
per_bc	0.6290	0.1945	0.1900	0.9300
dec	0.0902	0.0582	0.0100	0.3000
i_prosec	0.3156	0.1013	0.0900	0.5800
i_govern	0.3000	0.1022	0.1000	0.5400
i_polpar	0.2984	0.1229	0.0800	0.7000
i_impar	0.3658	0.1176	0.1100	0.7000
G	29.7037	3.8926	21.2000	40.8000
IEF	69.7732	5.5874	55.4000	82.0000

countries with the highest levels of tolerance for corruption are Hungary and Latvia, with median values between 30% and 40%. On the opposite end are Finland (which, in this case, surpasses Spain) and Portugal, with values close to 80% in both countries.

The rest of the variables analysed, which correspond to the independent or explanatory variables of the model, are grouped (according to the subject matter of the questions posed in them) into three categories: experience with corruption, perceived corruption and institutional fight against corruption.

The first group of variables, ranging from exp_health to exp_daily, together with the variable no_rep, refer to corruption experienced by the subjects. In this case, individuals are being asked about whether they have experienced corruption in concrete situations or have witnessed it. It is worth noting that about 28% of respondents report being affected by corruption in their daily lives (exp_daily) and almost 16% know someone who has participated in bribery (exp_brib), as can be seen in Table 3. Figure 3 shows the boxplot for exp_daily over country.

When EU citizens are asked whether they are personally affected by corruption in their daily lives, in Figure 3, we can find very different responses across countries. Romania ranks first in terms of citizens who report being affected by corruption on a daily basis, followed by Croatia, Spain and Greece. In the case of the latter two, it is observed that they exhibit practically identical behavior. However, citizens from Western Europe (Denmark, France, Luxembourg and the Netherlands) as well as Scandinavia (Finland and Luxembourg) exhibit response values

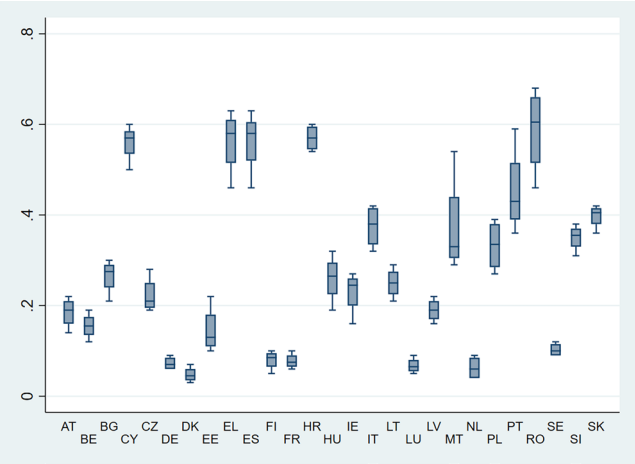

FIGURE 3 | Boxplot of exp_daily over country. [Colour figure can be viewed at wileyonlinelibrary.com]

between 0% and 10% (meaning that only between 0% and 10% of the interviewed citizens report being affected by corruption in their daily lives). It should be noted that both areas are characterised by their economic development and strong welfare states.

Another aspect analysed in this paper is perceived corruption, information that is collected with the variables per_country, per_lrpi, per_npi and per_bc, as well as with the variable dec. It is worth highlighting the fact that more than 70% of the European citizens interviewed state that they perceive corruption in national, local and/or regional public institutions (variables per_country, per_lrpi and per_npi). Reference should also be made to the response obtained by the variable per_bc, where 63% of respondents consider corruption to be part of the country's business culture. As for the evolution of corrupt practices over time, only 9.02% of the subjects perceive that the level of corruption has decreased in recent years (variable dec). Figure 4 shows the boxplot for per_country over country.

Regarding the perception that citizens have of how widespread corruption is in their respective countries (exp_country), a high dispersion can be observed among the obtained results in Figure 4. While in some countries nearly all citizens indicate that corruption is very or fairly widespread (Greece ranks first in this regard, with a value close to 100% and Spain shows values around 90%), Denmark and Finland report values around 20%.

The third group of questions corresponds to the variables i_prosec, i_govern, i_polpar and i_impar, which reflect the opinion of citizens regarding the institutional fight against corruption. It can be observed that only 30% of those interviewed consider that the institutions use all means to pursue corruption (i_prosec and i_govern) and only 36% state that measures against corruption are taken impartially or without ulterior motives (i_impar). On the other hand, only 30% say that there is sufficient transparency and oversight regarding the financing of political parties in their respective countries. Figure 5 shows the boxplot for i_prosec over country.

Finally, as presented in Figure 5, it is also important to note the differences in the responses of EU citizens when asked whether

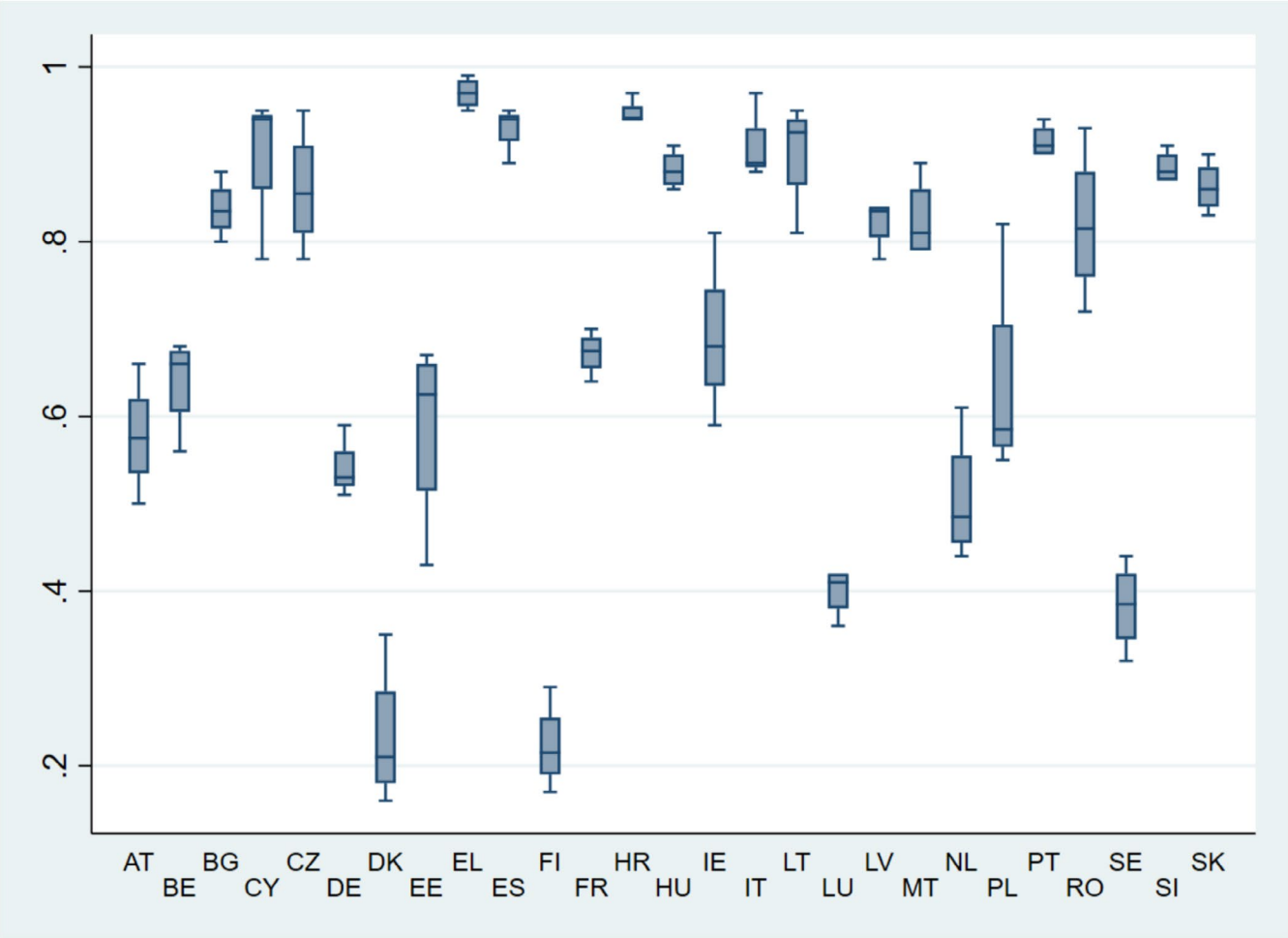

FIGURE 4 | Boxplot of per_country over country. [Colour figure can be viewed at wileyonlinelibrary.com]

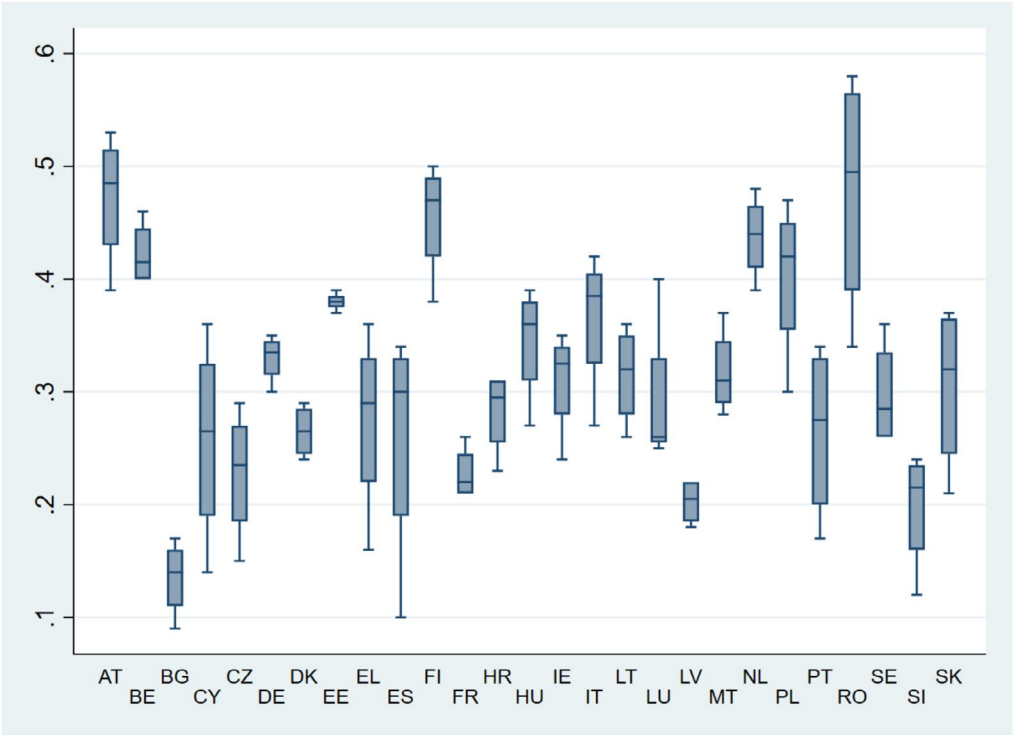

FIGURE 5 | Boxplot of i_prosec over country. [Colour figure can be viewed at wileyonlinelibrary.com]

there are sufficient successful prosecutions to deter people from corrupt practices in their countries (i_prosec). It is observed that Romania not only presents the highest values (a larger number of people agreeing with the statement) but also shows a high dispersion. Romania is followed by Austria and Finland, among others. On the opposite end are Bulgaria and Slovenia, where only around 10%–20% of citizens express agreement with this statement. In the case of Spain, there is significant dispersion in the obtained results, with the median value at 30%, indicating that a significant number of citizens believe that corruption is not adequately prosecuted.

At the individual level, and unlike other studies on corruption where socio-demographic explanatory variables are included in the models (Hunady 2017; Pop 2012), our analysis seeks to focus exclusively on perceptions and experiences of corruption. At the country level, there are macroeconomic indicators, such as GDP per capita, unemployment rate or foreign direct investment, that have been found to be significant with respect to corruption (Mocan 2008). According to Ahmad et al. (2020), the review of the empirical literature shows that economic factors are more relevant than socio-cultural factors, from the citizens' point of view, in reducing corruption. They also find that the level of corruption can be reduced by an increase in globalisation and economic freedom, as well as by variations in the level of income distribution.

The fact of working with countries that present different economic contexts suggests the convenience of including some country-level control variable in the model. As explained above, two variables are considered in this study: the Gini index (whose data were obtained from Eurostat) and the index of economic freedom (IEF) (Eurostat 2024). The use of the latter index is an original contribution of this paper to the empirical literature on TC.

The Gini index is considered one of the main measures of inequality (Gouvêa Maciel 2021; Malmberg 2019; Pop 2012) and indicates the level of concentration that exists in the distribution of income among the population on a 0–1 scale, where 1 reflects a higher level of inequality in income distribution and 0 reflects higher conditions of equality in income distribution. According to The Heritage Foundation, which publishes the IEF index, this index is strongly and positively correlated with per capita income. Thus, countries with higher levels of economic freedom enjoy higher levels of overall human development (life expectancy, literacy, education and standard of living) and there is strong evidence that the most significant social progress occurs in societies based on economic freedom. The IEF focuses on four aspects of the economic and business environment—rule of law, government size, regulatory efficiency and market openness—and is measured on a scale of 0–100, with higher values indicating greater levels of economic freedom.

3.2 | Model

In order to answer the questions raised in the paper, we worked with panel data for 27 countries for the years 2013, 2017, 2019 and 2022. The Hausman test (Hausman 1978) was used to know whether to work with fixed or random effects, and then the analysis was developed with linear regression models with panel data, applying random effects to address the problem of heterogeneity (Arellano 2005).

The analysis was carried out in order to test the hypotheses formulated as H1, H2 and H3 based on the equations and models presented below. As stated before, the dependent variables tc_1 and tc_2 measure TC, and the independent variables are grouped into three categories: E (exp_health, exp_brib, exp_wit, exp_daily and no_rep), P (per_country, pero_lrpi, per_npi, per_bc and dec) and I (i_prosec-i_impar). Specifically, we study whether these relationships are positive and significant in the case of Experience (E) and Perception (P) and negative and significant in the case of institutional struggle (I).

H1. *Experience with corruption is positively correlated with TC.*

H2. *Perceived corruption is positively correlated with TC.*

$$TC_{it} = \alpha + \beta_1(E_{it}) + \beta_2(no\_rep_{it}) + \beta_3(G_{it}) + \beta_4(IEF_{it}) + \mu_i + \eta_t + \varepsilon_{it} \quad (1)$$

where TC_{it} will be represented by the variables tc_1 and tc_2 of a country i in a year t; E_{it} stands for the variables exp_health, exp_brib, exp_wit and exp_daily, which indicate the corruption experienced by the citizens of a country i in a year t; no_rep_{it} indicates the percentage of cases of corruption not reported in a country i in a year t; G_{it} corresponds to the Gini index in a country i in a year t; and IEF_{it} reflects the index of economic freedom in a country i in a year t. Finally, the error term is modelled by splitting it into three variables in an attempt to capture the unobservable heterogeneity between the different countries. The first component is representative of each country and includes unobservable effects that only affect that country (μ_i), the second component represents the shocks that occurred in each year of the study and that affect all countries equally (η_t) and the third component is a random variable for each country and year (ε_{it}).

$$TC_{it} = \alpha + \beta_1(P_{it}) + \beta_2(dec_{it}) + \beta_3(G_{it}) + \beta_4(IEF_{it}) + \mu_i + \eta_t + \varepsilon_{it} \quad (2)$$

In this case, the independent variable P_{it} will include per_country, per_lrpi, per_npi and per_bc, which indicate the corruption perceived by the citizens of country i in year t, and the variable dec_{it}, which reflects the opinion about the evolution of the level of corruption expressed by the citizens of country i in year t.

H3. *The positive perception of the institutional fight against corruption is negatively correlated with TC.*

$$TC_{it} = \alpha + \beta_1(I_{it}) + \beta_2(G_{it}) + \beta_3(IEF_{it}) + \mu_i + \eta_t + \varepsilon_{it} \quad (3)$$

In this case, the independent variable I_{it} will include i_prosec, i_govern, i_polpar and i_impar, which indicate the perception that citizens have about how the fight against corruption is carried out by the institutions.

4 | Results

This section contains the results of the analysis carried out with the study of correlations and univariate regressions and linear regressions with panel data. We also include a robustness analysis.

4.1 | Correlations and Univariate Regressions

Table 4 presents the correlations over time and across all individuals, as well as the univariate regressions between the dependent and independent variables of the models (1) to (3). It can be seen that the variables considered within the corruption experience group are the ones that show the greatest number of statistically significant values. More specifically, it can be observed that all the dependent variables associated with the experienced corruption category (with the exception of the variable exp_daily, in which citizens are asked if they are affected by corruption in their daily lives) are positive and significant, which could be interpreted as evidence in favour of H1, which states that experience with corruption is positively correlated with TC. These results are similar for both dependent variables, tc_1 and tc_2.

The same cannot be said when the analysis is undertaken with the variables corresponding to the perceived corruption category, given that positive and significant relationships can only be appreciated when the dependent variable is tc_2 and only for the case of the correlations. These relationships observed in the correlations can only be confirmed with univariate regressions for the model in which the explanatory variable is per_bc and the explained variable is tc_2. This indicates that, to the extent that citizens state that corruption is part of the business culture, they show a higher TC.

In the case of the variables grouped in the category institutional fight against corruption, negative and significant relationships can only be found in isolated cases. Furthermore, these relationships are not very robust given that they do not hold depending on the analysis undertaken (study of correlations or univariate regressions). In addition, there are also two cases in which the relationship between the perception of the institutional fight against corruption and TC shows a significant positive sign (i_polpar and i_impar with tc_1), a result contrary to that hypothesized in H3.

Finally, it is worth highlighting the relationship between the country variables and the dependent variables of the model tc_1 and tc_2. Among the control measures included in the models, significant positive relationships can be observed in the case of the IEF when the statistics of the univariate regressions are analysed (they are not maintained in the correlations). Therefore, based on these results, it could be argued that countries with a higher index of economic freedom have a higher TC.

TABLE 4 | Correlations and univariate regressions.

	Correlations and univariate regressions									
	tc_1					tc_2				
		Univariate regressions					Univariate regressions			
	Corr	Coef	SD	Obs	R-squared	Corr	Coef	SD	Obs	R-squared
exp_health	0.6495***	0.8407***	[0.151]	105	0.122	0.5386***	0.7789***	[0.243]	105	0.031
exp_brib	0.4448***	0.5132***	[0.131]	108	0.095	0.6545***	1.0656***	[0.184]	108	0.147
exp_wit	0.4213***	0.7080***	[0.135]	108	0.222	0.6389***	1.3496***	[0.183]	108	0.343
exp_daily	−0.0509	0.0674	[0.067]	108	0.041	0.1234	0.0301	[0.104]	108	0.001
no_rep	0.3846***	0.8885***	[0.168]	108	0.230	0.6575***	1.7832***	[0.222]	108	0.380
per_country	0.1136	0.0173	[0.056]	108	0.001	0.3806***	0.1302	[0.084]	108	0.000
per_lrpi	0.0490	0.0057	[0.075]	108	0.000	0.3409***	0.1774	[0.114]	108	0.002
per_npi	0.0297	0.0201	[0.071]	108	0.001	0.3357***	0.1758	[0.107]	108	0.004
per_bc	0.0360	0.05	[0.064]	108	0.012	0.2998***	0.2004**	[0.097]	108	0.019
dec	0.1395	−0.2626**	[0.113]	108	0.105	0.2299**	−0.2006	[0.168]	108	0.042
i_prosec	0.1206	0.0144	[0.075]	108	0.000	−0.0983	−0.1849*	[0.108]	108	0.034
i_govern	−0.0257	−0.0305	[0.077]	108	0.002	−0.2644***	−0.1783	[0.112]	108	0.015
i_polpar	0.9000	0.0773*	[0.042]	108	0.039	−0.0666	0.043	[0.062]	108	0.009
i_impar	−0.0025	0.0887*	[0.050]	108	0.046	−0.1949**	0.0589	[0.074]	108	0.019
G	0.0720	0.0009	[0.003]	108	0.000	0.0757	0.004	[0.005]	108	0.007
IEF	0.0550	0.0028*	[0.002]	108	0.041	−0.1439	0.0055**	[0.003]	108	0.105

Note: The first five shaded rows refer to the experienced corruption group. The next unshaded rows refer to the perceived corruption group. The following shaded rows refer to the institutional fight against corruption group. The remaining unshaded rows refer to country-level control variables. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

4.2 | Regression Models With Panel Data

The clear influence of the variables related to corruption experience on tolerance shown in Table 4 is again reflected in Table 5, where positive and significant results are obtained for four of the five independent variables analysed (all except the variable exp_daily), whether the variable explained is the tc_1 or tc_2. The analysis of the panel data regressions confirms the statement made in H1, which indicates that experience with corruption is positively correlated with TC.

Based on these results, it can be confirmed that (1) EU citizens who report having experienced some type of corruption in the health sector (exp_health) are more tolerant to corruption, with coefficient values close to 1 for both regressions (0.9801 and 0.9143 for the explained variables tc_1 and tc_2, respectively), (2) citizens interviewed who have witnessed some type of corruption (exp_wit) are more tolerant to corruption, an aspect that is reflected in the coefficients presented by these models, with the coefficient exp_wit taking the value of 1.242 in the case of the regression model estimated with the dependent variable tc_2 and (3) the regression model in which the explanatory variable is exp_brib offers a noteworthy finding. The results shown in Table 5 indicate that the more citizens are aware of people who take or have taken bribery, the more TC they have (coefficient values of 0.6153 and 1.1444 for dependent variables tc_1 and tc_2, respectively).

It can be seen that the results shown in Table 4 for the variables included in category E (experienced corruption) are confirmed by the panel data regressions, since the results obtained are practically identical in terms of the sign and significance of the coefficients. As seen in the analysis of correlations and univariate regressions, only variable exp_daily presents a different pattern to the rest, as it does not offer significant results for any of the cases analysed.

In view of the above, we can confirm the stability and robustness of the model proposed in this research to explain TC based on experienced corruption (H1). It should also be noted that these results are confirmed for both models, the one in which the explained variable is tc_1 and the one in which the explained variable is tc_2. The explanation for this positive and robust relationship is that as people become more exposed to corrupt situations, their sensitivity or rejection of corruption decreases (vicious circle). This fact is clearly confirmed by Ivan (2023), as the TC in Romania is very high compared to other European countries (mainly among young people aged 15–24 years). According to Ivan (2023), frequent exposure to corrupt acts (especially, in areas such as health system) creates social TC. As people experience corruption practices very often, corruption is seen as inevitable, leading the citizens to an attitude of resignation and acceptance of such unethical behaviours.

These findings are in line with those of several previous studies, which found that the more corruption citizens have experienced, the more tolerant they become of corruption. For example, Gouvêa Maciel (2021) studied how the corruption extension and the corruption experience interacted with TC, and both variables resulted statistically significant. Keller and Sik (2009) also found a moderate correlation between the practice of corruption and the level of TC.

On the other hand, and taking into account the results in Tables 6 and 7, it does not seem that the variables associated with perception and institutional struggle reflect, in general, the relationships proposed in hypotheses H2 and H3.

In the case of the variables associated with perceived corruption (Table 6), positive and significant relationships can only be seen for the variables per_country and per_bc when the dependent variable is tc_2. When compared with the correlations and univariate regressions for all the variables of perceived corruption, only the positive and significant relationships between the variable per_bc and the dependent variable tc_2 are maintained. It could be stated, therefore, that the respondents who agree that corruption is part of the culture of business are more tolerant of corruption, with a coefficient value of 0.1965. However, it should be noted that this relationship is much weaker than that presented by the coefficients exp_health, exp_brib and exp_wit, which yielded much higher coefficient values (values between 0.9143 and 1.2425).

These findings are similar to those of Pop (2012), which found no statistically significant relationship between perceived corruption and TC. On the contrary, Gouvêa Maciel (2021) and Hunady (2017) confirm that the higher the perception of corruption in a country, the more TC, in line with the behaviour shown by the explanatory variable per_bc.

Therefore, it could be stated that results aligned with H2 are only found for the case of the variable per_bc, while for the rest of the variables in this group no significant and stable relationship can be appreciated (as shown in Tables 4 and 6). This statement suggests that when citizens perceive corruption as embedded in the business culture, they tend to exhibit higher TC. This implies a normalisation effect, where viewing corruption as a routine part of business lessens public resistance and increases acceptance, creating an environment where corrupt practices may be more easily overlooked or even rationalized.

In the case of the institutional fight against corruption (Table 7), a positive and significant relationship is only observed for the variable i_polpar when the dependent variable is tc_1, a result that is considered irrelevant since it is an isolated case among all those studied in this category, in which no significant relationships between the variables can be seen that confirm hypothesis 3. As mentioned in Section 2.3, studies where TC is the explained variable and trust in institutions is an explanatory variable are scarce. An example of this is the study conducted by Guo and Tu (2017) with Chinese officials, whose results are aligned with H3. However, the fact that this study was conducted in such a specific context implies that caution is necessary when interpreting these results.

Subsequently, the effect of the COVID pandemic is contrasted by applying, again, the regression model for two subsamples: The first one with data related to waves 2013, 2017 and 2019 (pre-COVID) and the second one only with data from 2022 (post-COVID). The results are shown in Tables 8a, 8b, 9a, 9b, 10a and 10b, from which four main conclusions can be drawn.

First, it is worth noting that the variables associated with experienced corruption continue to show practically identical

TABLE 5 | Panel regressions for measures of corruption's experience.

	Experience of corruption									
	tc_1					tc_2				
G	−0.0014	0.0004	0	0.0016	−0.0005	0.0038	0.0033	0.0029	0.0068	0.0016
	[0.002]	[0.003]	[0.003]	[0.003]	[0.003]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
IEF	0.002	0.0016	0.001	0.0017	0.0013	0.001	0.0011	0.0002	0.0012	0.0010
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
exp_health	0.9801***					0.9143***				
	[0.148]					[0.207]				
exp_brib		0.6153***					1.1444***			
		[0.132]					[0.161]			
exp_wit			0.7569***					1.2425***		
			[0.144]					[0.170]		
exp_daily				0.0943					0.0512	
				[0.072]					[0.099]	
no_rep					0.8823***					1.5723***
					[0.175]					[0.199]
Constant	−0.9494***	−1.0163***	−0.9183***	−0.9911***	−0.9321***	−0.8137***	−0.9397***	−0.7816***	−0.8949***	−0.8062***
	[0.156]	[0.181]	[0.178]	[0.210]	[0.180]	[0.254]	[0.227]	[0.224]	[0.286]	[0.218]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	105	108	108	108	108	105	108	108	108	108
R-squared	0.282	0.248	0.316	0.147	0.306	0.434	0.532	0.578	0.347	0.601
Number of id	27	27	27	27	27	27	27	27	27	27

Note: Standard errors in brackets.
***$p < 0.01$.

TABLE 6 | Panel regressions for measures of corruption's perception.

	Perception of corruption									
	tc_1					tc_2				
G	0.0018	0.0021	0.0021	0.0017	0.0026	0.0059	0.0065	0.0067	0.0061	0.0072*
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
IEF	0.0013	0.0007	0.0008	0.0016	0.0006	0.0023	0.0015	0.0012	0.0025	0.0004
	[0.003]	[0.003]	[0.003]	[0.003]	[0.002]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
per_country	0.0391					0.1504*				
	[0.066]					[0.091]				
per_lrpi		−0.0040					0.0879			
		[0.090]					[0.120]			
per_npi			0.0057					0.0597		
			[0.086]					[0.116]		
per_bc				0.0718					0.1965**	
				[0.072]					[0.097]	
dec					−0.3189***					−0.2442
					[0.115]					[0.153]
Constant	−0.9709***	−0.9035***	−0.9176***	−1.0077***	−0.8794***	−1.0376***	−0.9504***	−0.9206***	−1.0734***	−0.8059***
	[0.225]	[0.236]	[0.238]	[0.223]	[0.195]	[0.302]	[0.317]	[0.319]	[0.294]	[0.275]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	108	108	108	108	108	108	108	108	108	108
R-squared	0.11	0.113	0.112	0.124	0.229	0.34	0.339	0.34	0.36	0.381
Number of id	27	27	27	27	27	27	27	27	27	27

Note: Standard errors in brackets.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

TABLE 7 | Panel regressions for measures of institutional fight against corruption.

	Institutional fight against corruption							
	tc_1				tc_2			
G	0.0027	0.0018	0.0027	0.0028	0.0064	0.0058	0.0073*	0.0072
	[0.003]	[0.003]	[0.003]	[0.003]	[0.005]	[0.004]	[0.004]	[0.004]
IEF	0.0006	0.0009	0.0006	0.0003	0.001	0.0012	0.0009	0.0005
	[0.002]	[0.002]	[0.002]	[0.002]	[0.003]	[0.003]	[0.003]	[0.003]
i_prosec	0.0664				−0.0732			
	[0.094]				[0.123]			
i_govern		−0.0389				−0.1324		
		[0.090]				[0.116]		
i_polpar			0.0907*				0.0369	
			[0.053]				[0.067]	
i_impar				0.0823				0.0379
				[0.057]				[0.073]
Constant	−0.9372***	−0.8968***	−0.9554***	−0.9329***	−0.8281***	−0.8027***	−0.8827***	−0.8587***
	[0.203]	[0.202]	[0.200]	[0.200]	[0.284]	[0.280]	[0.281]	[0.279]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	108	108	108	108	108	108	108	108
R-squared	0.113	0.115	0.143	0.141	0.348	0.349	0.349	0.35
Number of id	27	27	27	27	27	27	27	27

Note: Standard errors in brackets.
***$p < 0.01$.
*$p < 0.1$.

behaviour to that analysed previously (positive and significant relationships with the explained variables) in both the pre-COVID and post-COVID periods. Once again, only variable exp_daily stands out from the rest of the variables and does not support H1 proposed.

Second, a noteworthy result shown in Tables 8a and 8b corresponds to the variable exp_health, which measures the experience of corruption in the healthcare setting. It can be seen that the coefficient relating this variable to TC (measured by tc_1) varies by 50% between before and after COVID (from a value of 1.05–1.51). In the case of the dependent variable being tc_2, this variation is also observed in the coefficient of the variable exp_health between both subsamples, presenting an increase of 127% (the value of the variable goes from 0.93 to 2.13). No other notable variations were observed in the other variables. The explanation for the increase in the relationship between the variable measuring the experience of corruption in the health sector and the TC could be that in the context of the pandemic, European citizens were (as pointed by Sohns et al. 2024) more permissive of corrupt practices because it was important to achieve a specific end: ending the pandemic and global instability. In fact, in the wake of the crisis caused by the pandemic, Europe has seen a historic allocation of funds aimed at reactivating economies, and their execution and justification were, in many cases, extemporaneous and deficient. One of the sectors where the aforementioned events have been even more pronounced is healthcare. The rapid distribution of funds combined with an uncertain geopolitical context may have made citizens more relaxed about corruption in the post-pandemic period.

Third, the pre-COVID and post-COVID analysis again shows the robustness of the results obtained to support H1, given that the variables associated with experienced corruption contribute significantly to explaining TC through a positive relationship. Likewise, no evidence is found to support the relationships hypothesized in H2 and H3 when the pre-COVID and post-COVID periods are studied separately.

Finally, it should also be noted that the control variables G and IEF, in contrast to findings in some previous studies such as Pop (2012) or Uslaner (2008), do not explain TC in any of the scenarios studied. It is possible that the role played by these country-level variables in previous studies is superseded in this paper by the explanatory variables proposed, such as the measures of experienced corruption. If country variables are not significant, this implies that specific effects of each country are not strong or distinctive enough to add explanatory value to the model, either because other variables are already capturing these effects or because the differences between countries are small with respect to the variable of interest. However, we could

TABLE 8A | Contrasting the effect of COVID with measures of corruption's experience (tc_1).

	Experience of corruption									
	Pre-COVID					Post-COVID				
G	−0.0024	−0.0002	0.0005	0.0003	−0.0001	−0.0011	−0.0005	−0.0004	0.001	−0.0005
	[0.003]	[0.003]	[0.003]	[0.004]	[0.003]	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]
IEF	0.003	0.002	0.0015	0.0012	0.0015	0.0028	0.0008	0.0002	−0.0032	0.0004
	[0.002]	[0.002]	[0.002]	[0.003]	[0.002]	[0.003]	[0.003]	[0.004]	[0.004]	[0.004]
exp_health	1.0547***					1.5122***				
	[0.164]					[0.375]				
exp_brib		0.6863***					0.5822**			
		[0.163]					[0.229]			
exp_wit			0.8280***					0.5476		
			[0.169]					[0.434]		
exp_daily				0.0883					−0.0682	
				[0.084]					[0.143]	
no_rep					0.9593***					0.5912
					[0.208]					[0.471]
Constant	−1.0162***	−1.0516***	0.0000	−0.9374***	−0.9712***	−1.0355***	−0.9288***	−0.8377**	−0.5737	−0.8437**
	[0.169]	[0.209]	[0.000]	[0.251]	[0.204]	[0.235]	[0.270]	[0.300]	[0.373]	[0.303]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	78	81	81	81	81	27	27	27	27	27
R-squared	0.242	0.231	0.314	0.125	0.301	0.423	0.23	0.077	0.0232	0.077
Number of id	27	27	27	27	27					

Note: Standard errors in brackets.
***$p < 0.01$.
**$p < 0.05$.

TABLE 8B | Contrasting the effect of COVID with measures of corruption's experience (tc_2).

	Experience of corruption									
	Pre-COVID					Post-COVID				
G	−0.0020	−0.0017	0.0000	−0.0002	−0.0013	0.0002	0.0002	−0.0006	0.0029	−0.0013
	[0.004]	[0.004]	[0.004]	[0.005]	[0.004]	[0.006]	[0.005]	[0.006]	[0.007]	[0.006]
IEF	0.0017	0.0021	0.0012	0.0016	0.0015	−0.0013	−0.0020	−0.0016	−0.0085	−0.0006
	[0.004]	[0.003]	[0.003]	[0.004]	[0.003]	[0.005]	[0.004]	[0.005]	[0.007]	[0.005]
exp_health	0.9328***					2.1266***				
	[0.223]					[0.623]				
exp_brib		1.1943***					1.2863***			
		[0.202]					[0.303]			
exp_wit			1.2222***					1.7263***		
			[0.197]					[0.601]		
exp_daily				0.1202					−0.0349	
				[0.112]					[0.224]	
no_rep					1.5676***					1.9828***
					[0.233]					[0.638]
Constant	0.0000	−0.9274***	0.0000	−0.7903**	−0.7997***	−0.6003	−0.6431*	−0.582	−0.0541	−0.6321
	[0.000]	[0.266]	[0.000]	[0.337]	[0.251]	[0.391]	[0.357]	[0.416]	[0.585]	[0.410]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	78	81	81	81	81	27	27	27	27	27
R-squared	0.4520	0.4860	0.5670	0.3380	0.5920	0.4010	0.4930	0.3350	0.0980	0.3640
Number of id	27	27	27	27	27					

Note: Standard errors in brackets.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

TABLE 9A | Contrasting the effect of COVID with measures of corruption's perception (tc_1).

	Perception of corruption									
	Pre-COVID					Post-COVID				
G	0.0009	0.0012	0.0011	0.0007	0.0008	0.0007	0.0009	0.0008	0.001	−0.0009
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]
IEF	0.0002	−0.0005	−0.0004	0.0009	0	−0.0017	−0.0021	−0.0022	−0.0035	−0.0025
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.005]	[0.005]	[0.005]	[0.005]	[0.003]
per_country	0.0111					0.0015				
	[0.082]					[0.106]				
per_lrpi		−0.0264					−0.0181			
		[0.104]					[0.170]			
per_npi			−0.0226					−0.0203		
			[0.101]					[0.159]		
per_bc				0.0525					−0.0656	
				[0.085]					[0.124]	
dec					−0.2897**					0.3075
					[0.146]					[0.265]
Constant	0	−0.7982***	−0.8032***	−0.9300***	−0.8115***	−0.6928*	−0.6537	−0.6446	−0.528	−0.6205**
	[0.000]	[0.281]	[0.280]	[0.271]	[0.226]	[0.390]	[0.438]	[0.450]	[0.416]	[0.284]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	81	81	81	81	81	27	27	27	27	27
R-squared	0.0802	0.0887	0.0868	0.0868	0.189	0.0135	0.014	0.0142	0.0254	0.0683
Number of id	27	27	27	27	27					

Note: Standard errors in brackets.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

TABLE 9B | Contrasting the effect of COVID with measures of corruption's perception (tc_2).

	Perception of corruption									
	Pre-COVID					Post-COVID				
G	−0.0009	0.0001	0.0002	−0.0006	0.0002	0.0004	−0.0002	0.0009	0.0024	−0.0005
	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]
IEF	0.0029	0.0008	0.0006	0.0029	0.0001	−0.0018	−0.0012	−0.0011	−0.0053	−0.0093*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.007]	[0.007]	[0.007]	[0.007]	[0.005]
per_country	0.1792					0.1984				
	[0.110]					[0.160]				
per_lrpi		0.0759					0.3105			
		[0.135]					[0.257]			
per_npi			0.0583					0.2892		
			[0.130]					[0.241]		
per_bc				0.2024*					0.0894	
				[0.111]					[0.194]	
dec					−0.3197*					0.6435
					[0.180]					[0.403]
Constant	−0.9567***	−0.7613**	0.0000	0.0000	0.0000	−0.6102	−0.7185	−0.7442	−0.3323	0.0302
	[0.368]	[0.376]	[0.000]	[0.000]	[0.000]	[0.590]	[0.663]	[0.682]	[0.650]	[0.433]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	81	81	81	81	81	27	27	27	27	27
R-squared	0.3060	0.3130	0.3150	0.3360	0.3900	0.1540	0.1510	0.1500	0.1050	0.1870
Number of id	27	27	27	27	27					

Note: Standard errors in brackets.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

observe in Section 3.1. considerable cross-country differences, which lead us to conclude that the variables related to the experience of corruption are the ones demonstrating a clear influence on TC and capturing most of the information provided by the other explanatory variables.

4.3 | Robustness Analysis

Although the statistics of the ordinary least squares regressions support our results, given that our dependent variable is a censored measure, we run tobit regressions (Tobin 1958) to ensure robustness. The lower limit is set at −1, as the minimum value for tc_1 and tc_2. Panel A includes variables for 2013, 2017, 2019 and 2022. In Panel B and Panel C, the sample is divided in pre-COVID years (2013, 2017 and 2019) and post-COVID years (2022). The first three columns show the results of pooled regressions for tc_1, presenting for each variable the coefficient and its significance level, the standard deviation and the number of observations, while the last three columns show results for tc_2. Results in Table 11 confirm the previous findings and, if anything, show higher significance levels for some of our variables.

5 | Discussion

The main finding of this paper is that experience with corruption is positively correlated with TC, which is according to conclusions of authors such as Gouvêa Maciel (2021), Ivan (2023) and Keller and Sik (2009). More precisely, a greater exposure to corruption seems to induce a higher TC. This result is obtained for practically all the chosen variables that make up the experience of corruption and in three different time scenarios: the whole 2013–2022 decade, and the pre-COVID and post-COVID subsamples. This suggests the stability and robustness of the first model proposed and confirms the first hypothesis of this research. The explanation for this finding may be that if citizens also benefit from the system through corrupt acts or observe how others do so, they end up normalising these actions, either by making them more compliant and flexible with corrupt practices, or by regarding such unethical behaviour as necessary to

TABLE 10A | Contrasting the effect of COVID with measures of institutional fight against corruption (tc_1).

	Institutional fight against corruption							
	Pre-COVID				Post-COVID			
G	0.0021	0.0017	0.0032	0.0027	0.0012	0.0002	0.0009	0.0007
	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]	[0.005]
IEF	−0.0003	−0.0003	−0.0008	−0.0006	−0.0019	−0.0013	−0.0022	−0.0019
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.004]	[0.003]	[0.003]
i_prosec	0.1285				0.0829			
	[0.100]				[0.210]			
i_govern		0.0637				−0.0655		
		[0.099]				[0.200]		
i_polpar			0.2689**				0.0739	
			[0.115]				[0.117]	
i_impar				0.1743				0.0209
				[0.114]				[0.142]
Constant	−0.9022***	0	0	−0.9195***	−0.7179**	−0.6837**	−0.6920**	−0.6871**
	[0.231]	[0.000]	[0.000]	[0.234]	[0.294]	[0.286]	[0.283]	[0.286]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	81	81	81	81	27	27	27	27
R-squared	0.0987	0.0928	0.177	0.143	0.0202	0.0181	0.0303	0.014
Number of id	27	27	27	27				

Note: Standard errors in brackets.
***$p < 0.01$.
**$p < 0.05$.

access better services and no longer considering it corruption. Thus, a vicious circle is easily generated in which both phenomena reinforce each other.

As to the second hypothesis on a positive correlation between perceived corruption and TC, this has not been confirmed, which aligns with evidence previously obtained by Pop (2012). In fact, five variables were used as proxies for perceived corruption, of which only one of them, that related to the country's business culture, seems to have a modest explanatory capacity for TC. This suggests that in the business environment corrupt practices may be more easily overlooked or even rationalized. However, as for the other variables that are not statistically significant, this may be due in part to measurement biases inherent to perceptual variables, which are affected by the interpretation that each respondent makes of the corruption phenomenon they are asked about.

The hypothesised negative correlation between the institutional fight against corruption and TC has not been confirmed with the available data. As discussed in Section 2.3, we are not aware of previous literature that has formulated this hypothesis and whose results could serve as an antecedent to ours. But we argued that much empirical evidence confirms a negative association between people's trust in institutions and perceived corruption (Liu et al. 2023), and, as we expected a positive relationship between perceived corruption and TC, a negative relationship between institutional trust and TC would be the result of the mediator role of perceived corruption. Seen in this way, the lack of confirmation of our third hypothesis may be related to the same lack in the second hypothesis. Likewise, the measurement biases of the chosen explanatory variables, which, as in hypothesis 2, are of a perceptual nature, may also have an effect.

A final relevant finding is that virtually all the results obtained in the pre-pandemic context coincide with those obtained in the post-pandemic context. To some extent, this evidence can be considered in line with the study of Moreno (2002), who also carries out a temporal study and shows that there have been hardly any changes over time. However, an interesting exception appears in the results associated with the variable measuring experience in the healthcare setting (exp_health), since the influence of the experience of corruption on TC increases significantly in the post-COVID period compared to the pre-COVID period. This result is consistent with that obtained by Sohns et al. (2024) that one third of respondents in their research justified favouritism at the time of the pandemic in order to secure a vaccine.

6 | Conclusions

This paper explores TC with a novel approach for two main reasons. First, the paper shows that in order to show a holistic view

TABLE 10B | Contrasting the effect of COVID with measures of institutional fight against corruption (tc_2).

	Institutional fight against corruption							
	Pre-COVID				Post-COVID			
G	0.0007	−0.0005	0.0009	0.0003	0.0017	0.0001	0.0029	0.0028
	[0.005]	[0.005]	[0.005]	[0.005]	[0.007]	[0.007]	[0.007]	[0.007]
IEF	0	0.0002	−0.0001	−0.0001	−0.0073	−0.0054	−0.0081	−0.0076
	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]	[0.005]
i_prosec	0.0331				−0.1864			
	[0.125]				[0.326]			
i_govern		−0.0791				−0.3706		
		[0.122]				[0.304]		
i_polpar			0.0657				0.0631	
			[0.147]				[0.184]	
i_impar				−0.0176				−0.0208
				[0.147]				[0.222]
Constant	0.0000	−0.6173*	0.0000	−0.6435*	−0.0478	−0.0833	−0.1156	−0.1148
	[0.000]	[0.323]	[0.000]	[0.330]	[0.458]	[0.433]	[0.445]	[0.447]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	81	81	81	81	27	27	27	27
R-squared	0.3240	0.3220	0.3290	0.3200	0.1100	0.1520	0.1020	0.0974
Number of id	27	27	27	27				

Note: Standard errors in brackets.
*$p < 0.1$.

of TC, it is important to overcome the geographical and temporal limitations that many previous studies suffer from. The paper overcomes the geographical limitation by including the 27 EU countries and not only looking at the differences between them but also analysing the region as a whole. The temporal limitation is overcome by covering the period 2013–2022 and, in addition, investigating whether there are differences in TC in the EU before and after the COVID-19 pandemic. Second, unlike most previous studies, the paper does not focus on studying how individuals' socio-demographic characteristics influence their TC, but rather emphasises the importance of individuals' previous experience with corruption and their personal perceptions of corruption and the fight against it (thus making room for cultural variables and values). With all this in mind, several findings are presented in this paper.

6.1 | Contributions

The study of differences–similarities between the 27 EU countries carried out shows significant disparities in the variables chosen as proxies for TC. The highest TC values were exhibited in a group of Eastern European countries, and the lowest TC values in Spain, Portugal and Finland. Important differences among countries could also be seen in the explanatory variables. Thus, in variables representing experienced and perceived corruption, the highest values were observed in Mediterranean countries such as Greece, Spain and Croatia, and the lowest in Northwestern European countries such as Denmark, Finland and Luxembourg. In relation to the perception of institutional fight against corruption, the lowest values were found in Bulgaria and Spain, and the highest in Romania and Finland. In view of the considerable cross-country differences observed, it was considered appropriate to introduce country-level control variables in the models; specifically, the Gini index, of proven explanatory power in previous studies, and the index of economic freedom, an original contribution of this paper to the empirical literature on TC. However, they did not show explanatory capacity for TC in any case, which may be explained by having been superseded by the proposed explanatory variables, such as measures of experienced corruption.

The study finds a positive link between experience of corruption and tolerance to corruption (TC), consistent with previous research. This relationship holds across different time periods (2013–2022, pre- and post-COVID), confirming the first hypothesis. The finding shows that when citizens experience or observe others benefiting from corruption, they may start to see it as a normal part of accessing services, rather than as immoral. This leads to a cycle where both corruption and tolerance of it reinforce one another. Therefore, it is crucial to raise public awareness of the harmful effects of corruption in different spheres. Hence, the authorities should not only focus their efforts on proposing crackdowns on corruption, but also on promoting and

TABLE 11 | Tobit regressions for measures of corruption's experience, corruption's perception and institutional fight against corruption, also contrasting the relationship before (panel B) and after (panel C) COVID.

	tc1			tc2		
	Reg	**SD**	**Obs**	**Reg**	**SD**	**Obs**
Panel A: Global						
exp_health	0.9751***	[0.156]	105	0.9062***	[0.206]	105
exp_brib	0.6161***	[0.128]	108	1.1465***	[0.159]	108
exp_wit	0.7573***	[0.140]	108	1.2176***	[0.164]	108
exp_daily	0.0923	[0.072]	108	0.0514	[0.096]	108
no_rep	0.8832***	[0.169]	108	1.5510***	[0.193]	108
per_country	0.0406	[0.064]	108	0.1498*	[0.090]	108
per_lrpi	−0.0024	[0.087]	108	0.0845	[0.120]	108
per_npi	0.0065	[0.083]	108	0.0559	[0.115]	108
per_bc	0.0706	[0.069]	108	0.1980**	[0.094]	108
dec	−0.3289***	[0.113]	108	−0.2609*	[0.146]	108
i_prosec	0.0681	[0.091]	108	−0.0733	[0.119]	108
i_govern	−0.0384	[0.087]	108	−0.1326	[0.113]	108
i_polpar	0.0908*	[0.051]	108	0.0367	[0.065]	108
i_impar	0.0816	[0.055]	108	0.0393	[0.070]	108
Panel B: Pre-COVID						
exp_health	1.0613***	[0.178]	78	0.9283***	[0.222]	78
exp_brib	0.6864***	[0.156]	81	1.1977***	[0.199]	81
exp_wit	0.8250***	[0.164]	81	1.1686***	[0.185]	81
exp_daily	0.0856	[0.084]	81	0.1195	[0.108]	81
no_rep	0.9589***	[0.201]	81	1.5114***	[0.222]	81
per_country	0.0123	[0.082]	81	0.1812	[0.111]	81
per_lrpi	−0.0248	[0.101]	81	0.0736	[0.135]	81
per_npi	−0.0214	[0.098]	81	0.0561	[0.130]	81
per_bc	0.0528	[0.082]	81	0.2045*	[0.108]	81
dec	−0.2967**	[0.143]	81	−0.3398**	[0.172]	81
i_prosec	0.1295	[0.096]	81	0.0326	[0.121]	81
i_govern	0.0631	[0.095]	81	−0.0796	[0.118]	81
i_polpar	0.2678**	[0.111]	81	0.0645	[0.142]	81
i_impar	0.1735	[0.112]	81	−0.0159	[0.146]	81
Panel C: Post-COVID						
exp_health	1.5122***	[0.346]	27	2.1266***	[0.575]	27
exp_brib	1.2863***	[0.280]	27	1.2863***	[0.280]	27
exp_wit	0.5476	[0.400]	27	1.7263***	[0.555]	27
exp_daily	−0.0682	[0.132]	27	−0.0349	[0.207]	27
no_rep	0.5912	[0.434]	27	1.9828***	[0.588]	27

(Continues)

TABLE 11 | (Continued)

	tc1			tc2		
	Reg	**SD**	**Obs**	**Reg**	**SD**	**Obs**
per_country	0.0015	[0.098]	27	0.1984	[0.148]	27
per_lrpi	−0.0181	[0.157]	27	0.3105	[0.238]	27
per_npi	−0.0203	[0.147]	27	0.2892	[0.223]	27
per_bc	−0.0656	[0.114]	27	0.0894	[0.179]	27
dec	0.3075	[0.244]	27	0.6435*	[0.372]	27
i_prosec	0.0829	[0.193]	27	−0.1864	[0.301]	27
i_govern	−0.0655	[0.185]	27	−0.3706	[0.281]	27
i_polpar	0.0739	[0.108]	27	0.0631	[0.170]	27
i_impar	0.0209	[0.131]	27	−0.0208	[0.205]	27

Note: Standard errors in brackets.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

disseminating anti-corruption measures among the population, ensuring that they are well known and understood, in an attempt to foster a culture of zero TC.

6.2 | Implications

Important implications follow from our findings. The fight against corruption can only be effective with the active and direct involvement of society, which is incompatible with permissiveness towards corruption. If the greater the exposure to corruption, the more tolerant people become of it, this may even eventually lead to a dangerous vicious circle effect. Therefore, measures must be taken that can weaken and slow down this feedback, counteracting the growth of each of these variables. For example, working on improving the quality of public institutions and intensifying the interaction of the administration with citizens and companies by electronic means, avoiding direct contact between people, are possible ways of acting against the corruption experienced. Regarding the reduction of permissiveness towards corruption, policy makers should act from a civic education curriculum that prioritizes training in values (equity, equality, fairness ...) among young people, as well as from the promotion of the involvement of citizens in nongovernmental organisations, and from information through campaigns aimed at a mass public for a culture of zero TC, as stated above.

On the other hand, in this paper, corruption has not been analysed from the point of view of firms, but from that of citizens and focusing closer to their relations with the public administration. Nevertheless, we have found that practically two thirds of those surveyed by Eurobarometer consider corruption to be part of the country's business culture and that this variable is almost the only one of the perceived corruption variables that is significantly explanatory, although only with the generic TC measure. As argued above, from a consequentialist ethics perspective, TC is explained if it brings collective and/or individual benefits, despite its illegality. In this case, it can be interpreted that it is widely assumed that in order to progress in the labour market it is necessary to engage in certain illicit practices, which justifies them and results in higher TC. Firm managers should work to eradicate this malpractice, especially in their relations with the public administration. In any case, it would be of the utmost interest to address TC with a business focus in future research, since Eurobarometer allows knowing whether corruption has been experienced in private companies or in banks and financial institutions.

6.3 | Limitations

We must not fail to mention some limitations of this study. First, it should be borne in mind that this research has been carried out for a sample of 27 countries belonging to the European Union, a region made up of developed countries with consolidated democracies. On the one hand, this could explain why the control variables used (measuring social inequality and economic freedom at the country level) are not explanatory in any scenario. On the other hand, this should lead us to be very cautious about extrapolating the conclusions obtained to other countries in the world, especially developing ones. In view of this, we do not rule out carrying out this study in geographical areas with other economic and/or social contexts in future research.

Another relevant limitation arises from the fact that perception-based measures are biased, among other reasons, because they depend on the sample and are affected by culture, personal ethical standards and specific contexts (Liu et al. 2023) and because behind any perception of corruption lies a certain definition of the phenomenon of corruption, implicit or explicit. The fact that this phenomenon is understood in one way or another will have implications for the analysis of the causes and consequences of perceived corruption. In this paper, we use as instruments for measuring perceived corruption the responses to five specific questions related to each respondent's opinion of corruption in his or her country. The conception of most of these questions is sociotropic-generic, since the assessment that emerges from their answers affects the whole society and because they do not

specify in their formulation any specific corruption practice. This last aspect makes us aware that each person may interpret the concept of corruption differently and of the consequences this may have in terms of reliability and validity of the results. The same applies to most questions used to proxy citizens' confidence in the institutional fight against corruption.

6.4 | Future Research

Finally, as far as lines of future research are concerned, one arises from the fact that our analysis has deliberately excluded individual variables in order to put the focus on more directly corruption-related variables. However, numerous previous studies (Guo and Tu 2017; Hakhverdian and Mayne 2012; Hunady 2017; Malmberg 2019; Pop 2012, among others) have found their importance in explaining TC, and since the levels of R^2 we have obtained in our models leave room for the existence of additional explanatory variables, we consider continuing the research by analysing the profile of the citizen who experiences corruption; in particular, the influence that variables such as age, gender, income or educational level may exert on TC. On the other hand, we also consider it interesting to study the relationship that may exist between TC and the context in which corruption is experienced (e.g., health system, education system or courts of justice).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Peer Review

The peer review history for this article is available at https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/beer.12834.

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Appendix

Variables Definition

Variable		Definition	Possible answers
tc_1	−Q4.1	% of 'Never acceptable' when asked: Talking more generally, if you wanted to get something from the public administration or a public service, to what extent do you think it is acceptable to do any of the following? TO GIVE MONEY	Always acceptable/sometimes acceptable/never acceptable/do not know
tc_2	−Q4T	Tolerance index to corruption: % of 'Unacceptable'	Acceptable/tolerable/unacceptable
exp_health	Q2	% of 'Yes' when asked: Apart from official fees did you have to give an extra payment or a valuable gift to a nurse or a doctor, or make a donation to the hospital?	Yes/no/refusal/do not know
exp_brib	Q8	% of 'Yes' when asked: Do you personally know anyone who takes or has taken bribes?	Yes/no/refusal/do not know
exp_wit	Q12	% of 'Yes, experienced or witnessed' when asked: In the last 12 months have you experienced or witnessed any case of corruption? (MULTIPLE ANSWERS POSSIBLE)	Yes, experienced/yes, witnessed/no/refusal/do not know
exp_daily	Q15.4	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? You are personally affected by corruption in your daily life	Totally agree/tend to agree/tend to disagree/totally disagree/do not know
no_rep	Q12*Q13	% of 'No' when asked: Did you report it to anyone or not?	This variable will take a non-null value when the answer to question 12 is affirmative
per_country	Q5	% of 'Very or fairly widespread' when asked: How widespread do you think the problem of corruption is in (OUR COUNTRY)?	Very widespread/fairly widespread/fairly rare/very rare/there is not corruption in our country/don't know
per_lrpi	Q15.1	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? There is corruption in the local or regional public institutions in (OUR COUNTRY)	Totally agree/tend to agree/tend to disagree/totally disagree/do not know
per_npi	Q15.2	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? There is corruption in the national public institutions in (OUR COUNTRY)	Totally agree/tend to agree/tend to disagree/totally disagree/do not know
per_bc	Q15.3	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? Corruption is part of the business culture in (OUR COUNTRY)	Totally agree/tend to agree/tend to disagree/totally disagree/do not know
dec	Q6	% of 'Decreased a little or a lot' when asked: In the past 3 years, would you say that the level of corruption in (OUR COUNTRY) has...?	Increased a lot/Increased a little/stayed the same/decreased a little/decreased a lot/there is no corruption in our country/don't know

Variable		Definition	Possible answers
i_prosec	Q15.5	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? There are enough successful prosecutions in (OUR COUNTRY) to deter people from corrupt practices	Totally agree/tend to agree/tend to disagree/ totally disagree/do not know
i_govern	Q15.7	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? (NATIONALITY) Government efforts to combat corruption are effective	Totally agree/tend to agree/tend to disagree/ totally disagree/do not know
i_polpar	Q15.10	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? There is sufficient transparency and supervision of the financing of political parties in (OUR COUNTRY)	Totally agree/tend to agree/tend to disagree/ totally disagree/do not know
i_impar	Q15.13	% of 'Totally or Tend to agree' when asked: Please tell whether you agree or disagree with each of the following? In (OUR COUNTRY), measures against corruption are applied impartially and without ulterior motives	Totally agree/tend to agree/tend to disagree/ totally disagree/do not know
G	gini	Gini index of income inequality	
IEF	ief	Index of economic freedom	