



SOCIAL INCONSISTENCIES IN THE PERCEPTION OF CORRUPTION

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ABSTRACT

There is in society an increasing concern by corruption and its consequences. In these years of crisis, particularly in Spain, corruption has gone from being irrelevant to be one of the three main problems of the country. Despite of the abundant literature about this topic that it has been written, we are far from understanding the problem of corruption. This work tries to explain in a simple way the main characteristics of corruption and analyses how society modifies their perception of corruption depending on some factors. A questionnaire was designed to focus on the sensitivity of individuals about corruption and bribing. Results show that our perception is affected by some personal characteristics. At the same time the perception of corruption seems to depend on who performs the corruption activity.

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INTRODUCTION

Corruption is not precisely a modern problem. In fact in every civilization around history we can observe corruption problems and revolutions caused by the incompetence of corrupt governments. From ancient Rome to the present cases of corruption of the leaders of FIFA (Fédération Internationale de Football Association), through the despot governments of European absolutist kings or historical behaviour of Catholic Church in the Vatican state, any country, state or organization in history has not been able to avoid the problem of corruption. Which is the first case of corruption documented in the history? It's hard to know it, some historians date back to the time of Ramses IX (1100 B.C.), where a civil servant denounced in a document dirty business of another civil servant who had been associated with a gang of grave robbers. In the ancient Rome, Caton, the censor, suffered up to 44 corruption trials, general Escipion did burn evidence that accused his brother Lucio on a scam¹. Along the years and civilizations, corruption has always been present, Luis XIV (absolutist king of France in the seventeenth century) said "Does not exist governor who does not commit any injustice, soldier who does not live dissolute way, lord of land which don't act as tyrant. Even the most honest civil servant is left corrupt, unable to go against". Adam Smith admitted that "the commonly called a statesman or politician is a subject whose decisions are conditioned by personal interests." Even in the first European democracies didn't avoid this bad habit, Winston Churchill said: "A corruption minimum serves as a beneficial lubricant for democracy".

Today, in Western countries, cases of corruption make tongues to wag, especially, as in Spain occur, important people or politicians are involved in them. However, when voting, do not always catch up with them. Despite the bad image of these rulers and the mass media noise, the impact on the citizens seems relative. Why? Alfredo Alvar² concludes that "Corruption mechanisms are universal but in Spain is celebrated as the Spanish picaresque heritage. Accepting corruption is a cultural construction and, unfortunately, in Spain stays up nice". Antonio Argandoña³ believes that citizens are "schizophrenics and we have a double standard. We accept that in the world exists some form of corruption that basically we do not consider so bad. We tend to think that if to me, as an individual, it does no harm me; it's almost good if I move some money. The reasoning is: I am not concerned about corruption

¹ "In ancient times, greasing the wheels was a habit as widespread as today and in some cases even considered lawful" Breve historia de la corrupcion: de la antigüedad a nuestros días, (Brioschi, 2010)

² Research professor of Consejo Superior de Investigaciones Científicas (CSIC) and author of El Duque de Lerma, corrupción y desmoralización en la España del siglo XVII (Esfera de los libros).

³ Antonio Argandoña is Professor Emeritus of Economics and holder of the Chair "la Caixa" Social Responsibility of Business and Corporate Governance at IESE. Business School University of Navarra.

while it does not harm me personally. When a politician steals, we say that there is no right. But then we presume to have evaded income taxes”. Brisochi remembers that “next to the theft of the biggest there is always an unconscious corruption, for which we are responsible if we accept the rules of an illegal system because the micro corruption has always gone hand of macroscopic ones.

To fight against corruption practises there are some international organizations that have as main objective to finish or to reduce this scourge. Nowadays, the Organisation for Economic Cooperation and Development (OECD) was an early advocate of putting more focus on fighting corruption, most notably because of its impact on fair competition in foreign trade. But following the OECD lead, other international organisations – such as the UN, the European Union, the World Bank and regional development banks – also made the fight against corruption a priority.

The World Bank, in particular, has identified corruption as ‘The single greatest obstacle to economic and social development’ (World Bank, 2006a) and has taken the lead in promoting ‘good governance’ as a key strategy to combat corruption. So in both multilateral and bilateral aid today, combatting corruption and establishing good governance are seen as necessary parts of supporting sustainable development (see, as examples, UK Commission for Africa, 2005; UK Government, 2000; USAID, 2003; World Bank, 2006b). We know that corruption is bad for society, but what can we consider as corruption? Is the corrupt behaviour condemned in all countries? How really does it influence on the development of the countries? Are corrupt people bad by nature? Do it exist any element or situation that facilitates or influence corrupt acts? There are too many questions that are still unclear. This paper tries to through some light in some of them. In the next sections it will be presented the main characteristics of corruption, how we can define it, its consequences and which are the causes that facilitate or provoke it. After that, it will be introduced the most useful tools to measure country levels of corruption and the problems that this measures have and also present you another method to research about corruption: the experimental analyses. In section 2 the survey will be presented, as well as the main characteristics, which are the motivations behind the survey and the hypothesis of the work. In section 3, the results of the study will be shown, and finally in section 4 the conclusions will be commented.

What does corruption really mean?

This is the first question to consider. What is corruption? And which practises does it involve?. It seems that it is an easy work but unfortunately we are far to find a clear and incontestable definition for corruption. We can follow the definition that Transparency International⁴ (TI) did in 2006:

Corruption is operationally defined as the misuse of entrusted power for private gain. TI further differentiates between 'according to rule' corruption and 'against the rule' corruption. Facilitation payments, where a bribe is paid to receive preferential treatment for something that the bribe receiver is required to do by law, constitute the former. The latter, on the other hand, is a bribe paid to obtain services the bribe receiver is prohibited from providing (Transparency International, 2006)

This definition may look straightforward and even unobjectionable, however closer consideration reveals some significant problems. TI's definition explicitly refers to the payment of bribes, whereas many forms of corruption may not involve any form of financial transaction. It is precisely the fact that it is possible to refer to 'many forms of' corruption that immediately highlights one of the core difficulties we face. It cannot specify just one type of corruption, because is an extensive concept. In fact, recently TI has revised its definition.

Generally speaking as "the abuse of entrusted power for private gain". Corruption can be classified as grand, petty and political, depending on the amounts of money lost and the sector where it occurs.

Grand corruption consists of acts committed at a high level of government that distort policies or the central functioning of the state, enabling leaders to benefit at the expense of the public good. Petty corruption refers to everyday abuse of entrusted power by low- and mid-level public officials in their interactions with ordinary citizens, who often are trying to access basic goods or services in places like hospitals, schools, police departments and other agencies.

Political corruption is a manipulation of policies, institutions and rules of procedure in the allocation of resources and financing by political decision makers, who abuse their position to sustain their power, status and wealth. See animated definitions of many corruption terms in our Anti-corruption Glossary⁵. (Transparency International, 2016).

⁴ Transparency International is the best NGO know against corruption. Every year it publishes a corruption Index CPI, where countries are classified depending on their perception of corruption.

⁵ Transparency International, in its Anti-Corruption Glossary, identifies more than 50 types of corruption. <http://www.transparency.org/glossary> In this sections appears both all types of corruptions and procedures to fight them.

Corruption needs more than a short definition to makes us understand the real meaning. Moreover, in terms of conception, there is another problem. The definition of corruption that TI or another organization, presents also an implicit cultural bias in the definition itself. Similarly, Ed Brown and Jonathan Cloke (2004, pág. 289) have argued that in international anti-corruption efforts, *“There is frequently insufficient recognition of the complexities of even defining corruption in different political and cultural settings (and an increasing tendency towards the universalising of Western norms and values)’*.

Corruption is a complex system of behaviours and practices where there is no one form of corruption besides the way of understand corruption changes over countries and societies, hence for the same reasons there is no one best way of organize over states the fight against practices. It's necessary to keep in mind this issue when it will be extracted conclusions of future researches.

Causes and consequences of corruption

The best researched issues among corruption are both the factors that produce corruption and the social-economic consequences of corruption. Since people had organized in socialites and the representative power became stronger, corruption appeared. We can read and learn different corruption situation in the ancient Rome or Egypt, all civilizations trough history suffer the same problem. Nowadays corruption is considered as one of the worst problems for development; in fact according to the latest barometer survey conducted by the Centro de Investigaciones Sociológicas (CIS), 43.4% of the population identifies corruption and fraud as the second main problem in Spain⁶. Only the problem of unemployment is considered to be more serious, being identified by 80% of the population surveyed. The World Bank (2001) has identified corruption as ‘the single greatest obstacle to social and economic development. The harmful effects of corruption on countries’ economic development are widely acknowledged in the economic literature; using empirical approaches several authors show that corruption detracts investors, reduces the productivity of public expenditures, distorts the allocation of resources and thus lower economic growth. The problem of corruption is so harmful that even the biggest multinational organizations like World Bank, OECD or IMF among others, have made specific strategies against corruption.

There are uncountable papers that try to find the economic consequences of corruption. In the seminal paper of Mauro (1995), the author tries to explain how corruption affects among different indicators of economic development. He found a negative association between

⁶ Findings from the CIS Barometer Survey (2016) corresponding to the multiple-response question in which respondents are asked to identify the three main problems currently affecting Spain.

corruption and investment, as well as growth; this is significant in both statistical and economic point of view. These relationships are robust in controlling for endogeneity by using an index of ethnolinguistic fractionalization as an instrument⁷. It is really common to use ELF as an instrument to correct endogeneity sources. Following Mauro's work Axel Dreher and Thomas Herzfeld (2005), estimated the effect of corruption on economic growth and GDP per capita as well as six possible transmission channels. They use the same framework that Mauro used but extending the number of years and also other explanatory variables and indices. Calculating the direct and indirect effects of corruption from the regressions estimates, they estimated for each country the costs of being more corrupt than the average, these costs are indeed substantial. On the other hand these results have to be taken with extreme caution because the results substantially depend on the method of estimation. Corruption can undermine confidence in public institutions. There is empirical evidence for Spain that corruption has eroded citizen confidence in government (Sollé-Ollé & Navarro, 2014). One of the basic principles underlying democracy is the assumption that governments are held accountable to their citizens at the ballot box. However, the lack of confidence in governments can lead to disaffection with the result that some citizens stop participating in the electoral process (Chong et al., 2011).

To date, the characteristics of the institutional environment that promote corruption have yet to be identified. It is not possible, therefore, to propose a reform of the institutional framework to prevent corruption. However, as Javier Salinas recognizes there is a broad consensus that increased transparency is a good mechanism for preventing corruption. Increasing the information about the actions and decisions of the public sector to which citizens have access makes it more difficult for officials to engage in unlawful practices. Thus, in order to prevent corruption it seems essential to increase the transparency of the actions of the public sector; to have an independent and effective judiciary system; and to have active and free media. As far as transparency is concerned, the measure generally adopted to bolster this is the legal regulation of the provision of information concerning the actions of government officials. An additional measure could be to use a local government's history of accountability as a criterion for economic transfers from other tiers of government.

⁷ The ethno-linguistic fragmentation index (ELF) is calculated by Taylor and Hudson (Charles L. & Hudson, 1972) . It measures the probability that two randomly selected persons from given country will not belong to the same ethnolinguistic group. Therefore, the higher the ELF index, the more fragmented the country. The ELF is exogenous to both variables economic as politic variables. We assume that the rate with the countries are split ethnolinguistically is exogenous and unrelated to the economic variables other than through its effect on institutional efficiency.

$$ELF = 1 - \sum_{i=1}^I \left(\frac{n_i}{N}\right)^2, \quad i = 1, \dots, I$$

How can we measure corruption?

Corruption is by nature a difficult reality to measure. It is a clandestine phenomenon, where information is scarce and objective data are not usually available.

The availability of appropriate measures of corruption posed the main obstacle to empirical research, however, this changed substantially over the second half of the 90s. Basically, three different groups of corruption indices emerged: First, indices like those of the International Country Risk Guide (ICRG) and Business International (BI) based on the assessment of country experts. The second group is derived from surveys among foreign or native businesspeople or the broad public. Examples are the indicators reported in the 1997 World Development Report (WDR), by the World Economic Forum (WEF) and by the Institute for Management Development (IMD). The third and last group consists of so called 'polls of polls' and includes the Corruption Perception Index (CPI) of Transparency International and the Graft-index developed by the World Bank. Both indices are constructed using several corruption indicators with the aim of enlarging country coverage and reducing measurement error. The most used index to measure corruption is CPI, which has had a pivotal role in focusing attention on corruption, moreover CPI suppose a useful tool for researchers offering them a systematic basis on which to compare perceptions of corruption across a range of different countries year by year. "The CPI is a composite index, calculated using data sources from a variety of other institutions which seek to measure the overall extent of corruption in the public or political sector" (Transparency International). Transparency International has achieved a well-known recognition around the world and its index is used for both researchers and politicians. Its value goes more far than the academic area, each autumn is generated widespread media interest across the world and contributes to promote international anti-corruption initiatives.

Despite of all its virtues we can not avoid its serious drawbacks, both in conception and in execution. Staffan Andersson and Paul M. Heywood (2009), (Davis & Ruhe, 2003), (Urra, 2007) and others, studied in more depth Transparency International index of corruption in order to highlight the deficiencies of the index and how it has been used for political ends which may not always turn out to be supportive of anti-corruption efforts. CPI presents some problems in conception due that impose our thought of corruption for the entire world, the definition of corruption and also the methods to measure have

implicit a cultural bias: the perception of one behaviour is corrupt or not, that varies country by country. To measure how intense is this effect James H. Davis and John A. Ruhe (Davis & Ruhe, 2003) examined the relationship between Hofstede's cultural dimensions⁸ and how country corruption is perceived. They found that some cultural dimension explain a significant portion of the variance in perceived corruption. CPI measures perceptions rather than, for example, judicial procedures because judicial procedures could represent more a proxy of the proper functioning of the rule of law than a real proxy of corruption. Another problem that CPI presents relates to the question of how we can properly interpret correctly what respondents to the various surveys understand about corruption. As CPI is a mix of surveys it is difficult to know if corruption represents the same for all surveys. Following with the problems of CPI we would like highlight the interval scales used by the index (0-100). It seems that CPI offers us an extremely accurate corruption measure, but in fact, as the same Transparency International explains, small variations in the index are not representative. Despite of the advice by Transparency International, several politicians and governments use in their favour small improvements both in the index and in the position of the rank. This misuse of the index does a disservice at the anticorruption work made by Transparency International.

Even all the problems, CPI and the others corruption indices provide us a useful tool to compare different situations and also the progress of a country against corruption. It has to be careful when it proclaims solutions against corruption, as it has learned that there is not a unic form of corruption so there are multiple tools and politics to fight it, it must to study each singularity and act differently in every country or region.

⁸ Hofstede's Cultural Dimensions: Between 1967 and 1973, the engineer and social psychologist Geert Hofstede, made for IBM probably the most comprehensive study has been done to date about cultural paradigms (Hofstede, 1980). The study had a great impact in many areas and his theory has been widely used in several fields as a paradigm for research, particularly in cross-cultural psychology, international management, and cross-cultural communication. Hofstede analyzed 70 countries and simplified complex cultural patterns of conduct in five simple indicators. Although this study is somewhat outdated, the cultural dimensions are still fully valid and remain a widely used analysis tool. Dimensions of national cultures: Power distance; Uncertainty avoidance; Masculinity/Femininity; Individual/Collectivism; Long-term orientation vs. short-term orientation; Indulgence vs. restraint. (to obtain more information: <https://www.geert-hofstede.com> or <http://www.geerthofstede.nl/index.aspx>)

Experimental approach

Researchers have a really big problem to measure corruption due to inherent clandestine behaviour in this issue. The perception indices developed by the biggest international organizations to measure the corruption reality of each country present some problems, as we have already commented before. To fill this gap, a lot of experiments have been produced in order to find the real tendency of people to involve in corruption procedures. This method is really interesting to find which are the factors or conditions that contribute to corrupt behaviours. There are uncountable experiments about corruption. In these experiments, researchers try to find the factors that affect the corrupt behaviour of subjects. We suggest a classification in two big areas of research.

One area of experiments studies the influence of environmental determinants in the corrupt behaviour finding in which situations corruption patterns are more likely to observe (Miller, 2006; Jaber-López et al., 2015). Researchers make different experiments changing the norms of experiments with the same subjects in. An interesting study on this area is conducted by Jaber-López et al (2014), where besides to control the environment situations looks deeply the psychological patterns of people when face to unethical situations (referred to corruption). They conducted an experiment of asymmetric social dilemma where played an auctioneer and two bidders. Subjects of the experiment were controlled by researchers to obtain their stress levels (using skin conductance responses) in cases where they confront a bribe or corruption situation and they also control the response time. They changed the rules of the experiment making two different treatments to control other variables such as the existence of a possible punishment including an inspection. If there is not punishment pro-social decisions remain residuals, but under the presence of an inspection pro-social option goes up to 54.55% despite the fact that inspection is only activated in the minority of cases. When they control the stress level of subjects, they found that higher arousal levels are associated with individual unprofitable choices not with bribe-giving or bribe taking choices.

The other area of research using experiments about corruption tries to find which the personal determinants are to makes the people selfish or less cooperative (more likely to fall into corruption) (Frank & Schulze, 2000; Frank et al, 1993). In the first area researchers make different experiments changing the norms of experiments with the same subjects in. The second area researchers make the same experiment with the same rules and concentrate their attention on the personal differences of subjects. Obviously some papers mix both areas of research using the same group of people where change the rules of the experiment and later show the results by personal differences and different treatments.

Despite the evident contribution of experimental analysis in order to explain corrupt behaviour, results and conclusions of the experiments are always questioned by the difficulty to extrapolate their results and conclusions from the experimental environment to real world⁹. Given that an experiment is a representation of the reality where researchers can isolate all the factors they want, control the procedure of subjects, write an specific rules into the experiment environment and specially subjects know that they are in an experimental area results, conclusions and recommendations obtained in experiments have to be taken carefully if we want transfer to real world. This is not a problem exclusively of experiments about corrupt behaviour, researchers have to deal with the problem of external validity in all experiments of what they do, whatever field.

THE SURVEY

Another method of studying corruption is through surveys. In fact, as we have said before, Transparency International periodically develops the CPI which is one of the most useful tools for studies on corruption. Surveys provide us the opportunity to ask directly to citizens, obtain first-hand information, obtaining larger samples than in the experiments, where citizens directly express their opinions, but it hardly can discern if that opinion is sincere or not.

This work consists of a big sample over 400 surveys answered by internet. It was used the platform of google drive for surveys, which offer an easy interface to make a survey, useful ways to share it and an intuitive programme to control all the survey answered. It was obtained answers from the entire world, more than 20 different countries, but unfortunately the sample for the individual countries is not big enough to make a robust analysis. More than 300 surveys were received from Spain, being Valencia and Catalunya the regions with more response rate (Valencia represents more than 70% of the sample). The Survey was disseminated among contacts and they should send the survey to their contacts too. This procedure allows us to obtain a big sample in a few time, but presents two problems. The first one is that the sample is concentrated in one region due that it's our residence and where we have the major number of contacts. The second problem is the background of the respondents. As a university student most of contacts have also university background so the percentage of people with university study is over the mean. In the sample over 55% have university studies while in the real world Spain has less 40% of university graduate (Ministerio de Educación Cultura y Deporte, 2016).

⁹ Rodrigo Moro and Esteban Freidin (2012) made a review about some experimental corruption studies and highlighted the external validity problem of these experiments.

Figure 1 shows the main personal characteristics of respondents, a more detailed description of variable is included in the Appendix 2. The response rate is much bigger in women than in men, in fact it is almost the double. We don't know why this difference exists, maybe it's just a random effect or maybe women are more liable to answer surveys than men. It would make more analysis about the answer rate of women and men in further studies. The number of unemployment people is lower than we can expect. The actual unemployment rate in Spain is over 20% while in the sample is less than 11%, we suppose that this difference is due to our specific contacts. The biggest unemployment rates are concentrated in specific areas and regions and on the other hand students don't compute as unemployment and a big part of our contacts are students.

The survey is divided in 3 main parts. In the first part some personal data are asked like gender, age, nationality, etc. After they complete the first part, the real survey starts where it was collected all the information about of corruption perception by the respondent citizens. It is divided in two parts. In the part one we present some possible situations that respondents could see in their life, where they must respond on a scale from 0 (I'd never do it) to 5 (I would certainly do it). These situations are about small or big corruption and ask them in which measure they would accept this behaviour. At the same time in each situation, respondents have been asked by their belief about the possible behaviour of their contacts in these situations. It has been demonstrated that people lies when ask them about sensitive issues, and their answer about the behaviour of other people in the same situations represent more accurately their real attitude of respondents than the direct questions (Kanasawa, 2005).

Hypothesis 1: Respondents are more critical and reluctant to corrupt practises if they respond by themselves that if they guess what people around them could respond. This behaviour could be for two reasons, or respondents believe that their contacts are more lax with this topic than themselves or they lie when respond for themselves and respond their really believes when answer for other people.

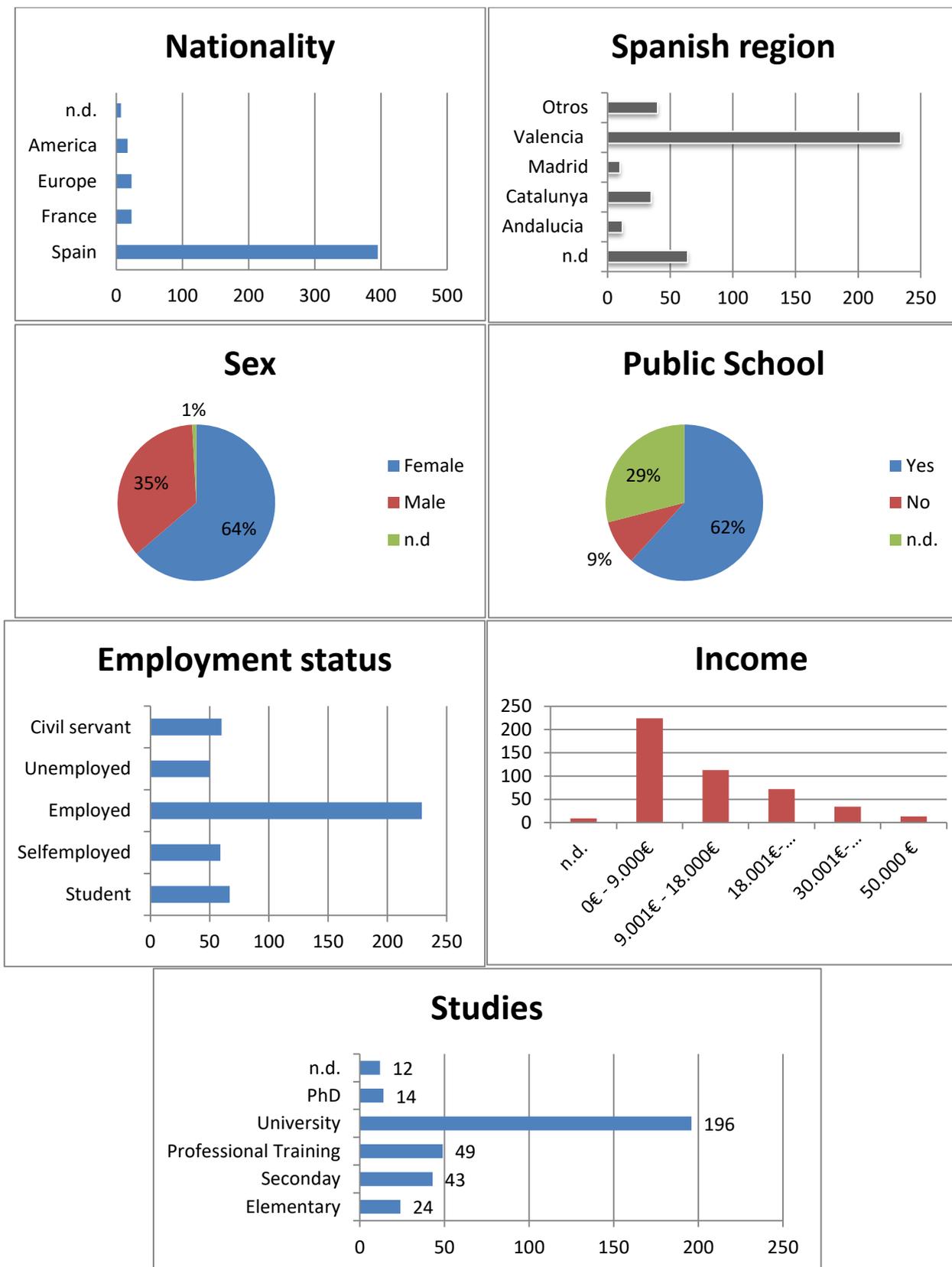


Figure 1 Sample distribution by personal characteristics

In the last part of the survey, respondents have been asked by real cases of corruption that appeared in the media, but without the names of people or organizations who staged such cases of corruption. The objective of this part is to find the grade of tolerance that citizens have about the cases of corruption. On a scale from 0 (totally unacceptable) to 5 (It's ok for me, I would too), they have to answer what degree of rejection will suggest the following scenarios.

Hypothesis 2: *People tend to condemn corruption practises differently, depending on who is involved.* Corrupt acts of the first phase obtained higher scores than those of the second phase. It tends to criminalize in stronger way corrupt manners of third people than when we ourselves are involving in one amoral or corrupt procedure. Additionally, corrupt acts made by politicians are considered worse than those made by business or citizens.

The purpose is exploring the possibility that people experiment differences in perception about corruption when these cases are from other people and reduce the importance when they are involved in one. Some reports and researchers claim that corrupt people have the same values than the other people and also criticize other cases of corruption, but when they involve on it, they justify their behaviour or they simply think that it isn't a wrong thing. For this purpose the survey is divided in 2 parts: one part for direct potential corruption situations and the other, where corruption activity it has been done by third parties. It was sent two types of surveys, both with the same questions, but in different order in order to avoid possible order effects. Appendix 1 shows an example of the questions included in the survey. The next table (Table 1) provides a quick explanation of all variables used in the work and in the Table 2 appears the meaning of all dummy used.

Variables	Explanation
Income	Total salary received per year
Sex	Male or Female
Family	If respondent has family responsibilities
Public School	If respondents have never studied in a public school
Studies	Maximum level of studies that respondents acquired
Personal~	Mean of the first part valuations
No personal	Mean of the second part valuations
General~	Mean of the opinion about all types of corruption
Corrupcion Politica~	Opinion about corruption in politics
Corrupcion Empresarial~	Opinion about corruption in business
Corrupcion ciudadanos~	Opinion about corruption in normal citizens' life
~Propia	Direct personal opinion of respondents
~Ajena	What respondents believe about what their relatives could respond

Table 1: Meaning of variables

Income		Studies		Public School		Family		Sex	
0€ - 9,000€	0	Elementary	0	Yes	0	Yes	0	Male	0
9,001€ - 18,000€	1	Secondary	1	No	1	No	1	Female	1
18,001€- 30,000€	2	Professional Training	2						
30,001€- 50,000€	3	University	3						
50,000 €	4	PhD	4						

Table 2 Dummy variables

In the first part of the survey we included some personal characteristics to classify better the respondents. The purpose of this classification is both simply classify the respondents and find possible determinants that influence the corrupt behaviour. There are some studies that have found that corrupt behaviour can be influenced by some personal characteristics of individuals. For example it has already studied the influence that could have an economic background in the selfish behaviour of people¹⁰. Robert H. Frank et al. (1993) investigated if exposure to the self-interest model commonly used in economics alters the extent to which people behave in self-interested ways founding some evidence that differences in cooperativeness are caused in part by training in economics. Franck and Schulze (2000) made an experiment which isolates the influence of self-interested on cooperation from other influences, they found that economics students are significantly more corrupt than others but, contrary to the experiment of Frank, Gilovich & Regan, evidenced that this difference is due to self-selection rather than indoctrination. In other words economics students are not more self-interest because of indoctrination, but they opt by economic degrees because they are more self-interest.

Age, sex or family charges can influence in our behaviour and all of them are tested. It has been tested by several studies that females have a more ethical behaviour or produce less corruption than males (Barr, Lindelow, & Serneels, 2009). Also higher social class can predict increased unethical behaviour (Paul K. Piffa, 2012). Following previous studies we want to check if personal characteristics have influence in the corrupt behaviour of people.

Hypothesis 3: *The perception about corruption depends on personal characteristics*

As we saw in other works, personal characteristics of people could be important. Sex, studies, family responsibilities.... Could affect our perception of corruption and we will check if this is true.

¹⁰ We have just explained two papers that research in this way, but there are more examples (Carter and Irons 1991; Frank, Gilovich , & Regan, 1996; Marwell and Ames, 1981). It could be interesting for further research to make another survey controlling by studies and contrast if the self-interest behaviour observed in different experiments is observed also in that survey.

DATA ANALYSIS AND MAIN RESULTS

In this part the three hypotheses that it has been established before will be tested. A simple glance of averages (Table 6) gives us the intuition, however this is not enough to determine whether there are significant differences in mean and therefore there is a real difference in our perception of corruption. To be sure that there are significant differences it was performed econometric analysis. It is compulsory that our data meet the assumption of normality, hence it was used two tests (Saphiro-Wilk and Saphiro-francia Table 7) to find evidence whether the distribution of our data follows a normal. Unfortunately data doesn't follow a normal distribution so it can't be used the most common econometric analysis, it must be used non parametric statistics.

All variables used to test the first and the second hypotheses are dependent samples, hence, the Wilcoxon signed-rank test is the suitable method to do it (table 3 shows all the results obtained using this method). To test the first hypothesis, it has been used pairs of variables where the question was the same, but respondents had to answer on the one hand for their personal opinion and on the other hand for the possible opinion of their close contacts. The two tests reinforce our theory. In both it has rejected the null hypothesis that the average of both variables are the same and accept the alternative hypothesis that people are more critical and reluctant to corrupt acts if they respond by themselves that if they respond by people around them. People tend to be more critical and morally correct when expressing their personal opinion than when people predict the opinion of his closest contacts. This result can be given for two reasons. On one hand, because people tend to think that they are morally superior to their close contacts. On the other hand, it could be because they want to give the answer most accepted by society.

Following the same procedure than before, it was studied the second Hypothesis which was divided in two subparts. On the one hand, it was tested if there are differences in the repulse of corruption that citizens have, depending on if this corruption procedure has been done by themselves or by third parties. For this purpose it was constructed a Wilcoxon signed-rank test for the variables Personalpropia and Nonpersonal. Again the Wilcoxon signed-rank test conducted reveals that our theory is true. The null hypothesis that in average both variables are the same was rejected and it was accepted the alternative hypothesis that the average of the first part (personal) is greater than the second part (no personal), in other words, people tend to condemn more corrupt activities when referring to third parties.

Immediately after, the same test was run to check the second part of the hypothesis; Is every corrupt activity refused by the same intensity? The objective of this second part of the

Hypothesis 2 is to check if the population is more critical with political corruption than corruption performed by citizens or entrepreneurs. In order to look into this question, the averages of *Corrupcionpolitica*, *Corrupcionempresarial* y *Corrupcionciudadanos* were compared in the Table 5 and 6. Another time the null hypothesis was rejected in the four tests, hence the alternative hypothesis, which says that people tend to criticize more if the case of corruption is performed by politicians than if it is performed by citizens or businessman, was accepted. In other words, population tends to criminalize corruption with more emphasis when politicians are involved.

Hypothesis	Wilcoxon signed-rank test	p-value
1	signtest General~Propia = General~Ajena	0,00
	signtest Personal~Propia = personal~Ajena	0,00
2	signtest Personal~Propia = Nopersonal	0,00
	signtest Corr.Politica~Propia = Corr.Emp.~Propia	0,00
	signtest Corr.Politica~Ajena = Corr.Emp.~Ajena	0,00
	signtest Corr.Politica~Propia = Corr.Ciuda.~Propia	0,00
	signtest Corr.Politica~Ajena = Corr.Ciud.~Ajena	0,00

Table 3: Wilcoxon signed-rank tests¹¹ for hypothesis 1 and 2

In order to study third Hypothesis it was used the variable obtained in the second part (nopersonal). For this purpose it was used the Wilcoxon Mann-Whitney¹² test (Table 4) for dichotomous variables (sex, PublicSchool and family) and the Kruskal-Wallis test (Table 5) for variables with more than two possibilities (age, Income and studies).

Variables	Sex	PublicSchool	Family
Wilcoxon Mann-Whitney(z)	3.381	0.205	0.000
p-value	0.0007	0.837	1

Table 4: Wilcoxon Mann-Whitney for Sex, Publicschool and Family

¹¹ The Wilcoxon signed-rank test is a non-parametric statistical hypothesis test used when comparing two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ. It can be used as an alternative to the paired Student's t-test, t-test for matched pairs, or the t-test for dependent samples when the population cannot be assumed to be normally distributed.

¹² In statistics, the Mann–Whitney U test (also called the Mann–Whitney–Wilcoxon (MWW), Wilcoxon rank-sum test, or Wilcoxon–Mann–Whitney test) is a nonparametric test of the null hypothesis that is equally like a randomly selected value from one sample will be less than or greater than a randomly selected from from a second sample. Unlike the t-test it does not require the assumption of normal distributions. It is nearly as efficient as the t-test on normal distributions.

The tests show that the Sex is significant when we measure the perception of corruption but Public School and family have not effect. For the variables with more than two possibilities we use the Kruskal–Wallis¹³ test by ranks. Surprisingly, following the test results, neither income nor studies affect our perception of corruption, only age appears as significant.

Variables	Age	Income	Studies
Kruskal–Wallis test by ranks (χ^2)	9.726	1.181	2.019
Rank	[19-71]	[0-4]	[0-4]
p-value	0.0453	0.7693	0.7323

Table 5: The Kruskal–Wallis test by ranks for income, age and Studies

CONCLUSIONS

To make this paper possible a survey has been created to study different singularities about the opinion that citizens have about corruption. The objective is to analyse the coherence of respondents when they have to give their opinion about different situations where corruption appears. At the same time they also answer questions about some personal characteristic such as age, sex, or income. The goal of these questions is to find some determinants that make the people more or less permissive to corruption manners. The survey has been distributed by internet around the world using direct contacts and the contacts' relatives. A sample of over 400 responses was obtained, reaching the initial objectives. Although the sample is large enough to perform all the studies that this paper presents, it is too localized in a few geographical areas. This limitation prevents us analyse if the geographical variable plays an important role in our way to envisage corruption. It remains for further studies to obtain a representative sample of different regions and countries. The sample of more than 400 responses allows building more than 16 variables, of which it as only used 13 for our study. It was shown through the Shapiro–Wilk and Shapiro–Francia tests that variables are not normally distributed, so it has been necessary to use nonparametric statistics.

¹³ The Kruskal–Wallis test by ranks, Kruskal–Wallis H test (named after William Kruskal and W. Allen Wallis), or One-way ANOVA on ranks is a non-parametric method for testing whether samples originate from the same distribution. It is used for comparing two or more independent samples of equal or different sample sizes. It extends the Mann–Whitney U test when there are more than two groups. The parametric equivalent of the Kruskal-Wallis test is the one-way analysis of variance (ANOVA). A significant Kruskal-Wallis test indicates that at least one sample stochastically dominates one other sample.

The first result (table 3) shows that opinions given by respondents vary depending on if we ask them for their personal opinion or if we ask for their believe about their relatives opinion. When people were asked for their personal opinion on a morally reprehensible question, people tend to answer in a more ethical manner than they really think, and they use the question about what their close contacts think to answer what they effectively think¹⁴. Following this theory we must be very careful when conducting the survey. Although surveys are anonymous, when we ask citizens their personal opinion about a topic where there is an ethical standard, answers may be biased toward that standard; hence it would not reflect the real opinion of citizens. It would be interesting in future papers study more closely this effect and observe if the existing gap remains constant over studies. If the gap observed in this study remains constant, deviation it can be corrected in future surveys. It has been demonstrated that our perception and critique of corruption varies depending on if this corruption involves respondents or it has been made by third parties, being more criticized the corruption manners performed by third people. On the other hand, cases of corruption made by third parties are more or less criticized and condemned depending on whether they are made by politicians, businessmen or citizens. This fact could have very serious consequences when are conducted surveys of perceived corruption by citizens. We assume that cases of corruption that most people can see in the day to day, without the press or the courts bring it to light, are those that affect citizens and entrepreneurs. Corrupt acts committed by politicians go unnoticed by most citizens, only if these procedures arrive to mass media, citizens are aware of these practices. Hence, in a very corrupt system where the media are controlled by the policymakers or where, although there are cases of corruption, have not yet been discovered (as in Spain 5 years ago), citizens underestimate corruption in that country. And by the same reasoning, a country where the press and justice work reasonably well, more cases of political corruption will be discovered, and although the average citizen is not in direct contact with corrupt practices, the corruption perception of that country would be overestimated. Various international organizations, fight against corruption and periodically publish reports and indices of corruption by countries. These indexes should take into account the peculiarity about the perception of corruption that we have noted in this paper. If these indexes don't have this factor in mind, the corruption of countries that operate freely and properly it could be overestimated and underestimated corruption in countries where freedoms are restricted and corruption is widespread.

It is commonly accepted that some personal characteristics influence our decisions. In experiments of corruption has been seen that variables such as gender, age or education can affect our decisions in the game. The results presented in this paper, show that Sex and

¹⁴ This theory follows the work of Phillippa Lally et al (2011)“Social norms and diet in adolescents”

age are significant, but Income Public, family and studies not. This result follows the results obtained in other experiments where age and sex are significant, while income and studies are significant or not depend of the experiment.

Graphical results were been obtained about the inconsistency of citizens in assessing corruption. First, in the survey, it is compulsory to know how to make the questions about corruption in order to obtain answers that fit well the reality, thereupon, we must not forget that depending on who has committed the crime of corruption, citizens rejection could vary. Finally, it seems that some personal characteristics could modify our way to view the corruption. From our point of view, this work should be repeated with new samples, reaching other regions of Spain and other countries to see if the same results are repeated. In that case, all surveys conducted to measure corruption in each country, must take into account the results obtained here when making their indices of perception of corruption.

APPENDIX

Appendix 1: Survey description

In the Appendix 1 it shows which kind of questions were included in the survey. It has only presented some questions of the English version to save space and doesn't make the paper repetitive. Survey was distributed in English, Spanish and French in order to arrive to the maximum number of people possible. It is important remember the order of the questionnaire, where the first part is called risk behaviour and the second part is called Corruption, it has been changed in order to obtain two different surveys to observe if exist order effect.

- **Personal characteristics**

In this section it was asked for personal information, such as nationality, Gender, Date of Birth, Educational Level, Annual Income or Age in order to identify some characteristics of the respondents.

- **Risk behaviour**

The objective of this part is to measure willingness to commit corrupt acts by citizenship. In order to keep the environment neutral and without prejudices, it was not written the corruption word in any question. In the following lines you can read the introduction chapter paragraph and 3 examples of the questions that were included in this section.

We want to analyse in depth the attitude of our society towards certain risky situations. In order to do this, we will introduce different situations, some more daily than others, which must respond on a scale from 0 (I'd never do it) to 5 (I would certainly do it).

In the second row you must answer what you believe that other respondents of your environment would answer the same question.¹⁵

- Now you are a successful footballer. Since you have dedicated your life to play football, you are not so familiar with tax issues. An Administrator has visited you and ensures that you can pay 30% less taxes, but he suggests that he could use shell companies in other countries. For peace of mind, he ensures you that only 1% of tax evasions come to discover. Would you hire this Administrator?

¹⁵ In this part of survey, in each question, respondents have to respond also at the following question: What do you believe that other respondents in your environment would respond?

- Imagine that you are responsible for awarding a construction in your municipality. There is a company dedicated to this type of buildings and other structures that has already done this type of buildings in other towns with good results. This company offers you a personal bonus of 2,500 € if you write the conditions of the award specifically for it. Knowing that the probability that someone contest the award is 5%. Will you write the conditions favouring this company?

- It is time to pay taxes. You have already made some estimation and know that this year you will have to pay a large sum of money. A friend tells you that if you declare your second apartment as a primary residence can save 30% on your tax return. The likelihood that tax inspectors focus on your case and found this irregularity is 15%. Will you follow the advice of this friend?

- **Corruption**

The objective of this part is to measure the permissiveness of citizens about the cases of corruption did it by other people. Some of cases that we have represented in this part were appeared in the media. And the last 3 questions ask directly for the permissiveness about corruption of respondents. In the following lines you can read the introduction chapter paragraph and 3 examples of the questions that we included in this section.

In recent years, almost every day we see how new cases of corruption are reported by the media. We would like to know the degree of acceptance of our citizens to different types of corruption that we've seen in the news.

On a scale from 0 (totally unacceptable) to 5 (It's ok for me, I would too), answer what degree of rejection will suggest the following scenarios.

- *A banker sells financial products to their customers, even though they are not suitable for them, in order to reach their productivity ratio and get more benefits.*

- *It has discovered a Swiss bank account of the prime minister, with money that large companies, which have benefited from recent public contracts, paid him as a bribe.*

- *On a scale from 0 to 5, what is your degree of intolerance towards corruption between taxpayers?*¹⁶

¹⁶ In the questions 8,9,10 respondents have to respond also at the following question: What do you believe that other respondents in your environment would respond?

Appendix 2: Main characteristics of the sample

In Appendix 2 data are described in more detail. However, it was not included all the data that it was obtained. It could be tedious and too long include detailed descriptive of all variables. If for some reason you are interested to know all the specifications, please, send an email (al083935@uji.es) and it will be provided you all information that you need.

Variable	Mean	Std.Dev	Min	Max
Personal~Propia	1,18178	0,84076	0	5
Personal~Ajena	2,26170	1,06832	0	5
No Personal	0,81703	1,14285	0	5
General~Propia	0,64363	0,94202	0	5
General~Ajena	0,98200	1,03429	0	5
Corr.Politica~Propia	0,33477	0,98489	0	5
Corr.Politica~Ajena	0,64579	1,17195	0	5
Corr.Empresarial~Propia	0,57883	1,10063	0	5
Corr.Empresarial~Ajena	0,82073	1,22265	0	5
Corr.Ciudadanos~Propia	1,10173	1,22242	0	5
Corr.Ciudadanos~Ajena	1,47948	1,39232	0	5

Table 6 Answers description

Data is obtained by a sample with a 400 respondents. First to run different analysis it was tested if data follows a normal distribution. If data does not follow normal distribution, it must use non parametric analysis. To test the distribution of the variables, it was made the Shapiro–Wilk and Shapiro–Francia because both are valid for the sample and are commonly used in the literature.

Variable	Shapiro-Wilk W test for normal data			
	W	V	z	Prob>z
Personal~Propia	0.94619	16.957	6.782	0.00000
Personal~Ajena	0.99367	1.994	1.654	0.04909
No Personal	0.76502	74.049	10.314	0.00000
General~Propia	0.77563	70.703	10.203	0.00000
General~Ajena	0.89081	34.407	8.478	0.00000

Variable	Shapiro-Francia W' test for normal data			
	W'	V'	z	Prob>z
Personal~Propia	0.95459	15.382	5.968	0.00001
Personal~Ajena	0.99662	1.146	0.298	0.38298
No Personal	0.78553	72.618	9.357	0.00001
General~Propia	0.81096	64.007	9.081	0.00001
General~Ajena	0.91065	30.253	7.445	0.00001

Table 7 Tests for normality distribution of data

In both tests it can be rejected the hypothesis that all variables are normally distributed, only in Saphiro-Francia is not possible reject that Personal Ajena is normally distributed. The values reported under W and W' are the Shapiro –Wilk and Shapiro –Francia test statistics. The tests also report V and V' , which are more appealing indexes for departure from normality. The median values of V and V' are 1 for samples from normal populations. Large values indicate nonnormality.

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