Deontological and Consequentialist Ethics and Attitudes Towards Corruption: A Survey Data Analysis

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Abstract

Much of the empirical research on corruption for the past 45 years has focused on perception-based definitions and measurements. Citizens' perceptions, their attitudes and (self) reported experiences of corruption have been widely studied through different perception-based measures obtained in surveys, interviews, and experiments applied to citizens in general, and experts, business leaders, politicians, or public officials. Notwithstanding the significant progress made to understand the complexity of citizens' understandings, judgements and practices, we are still unable to decipher by what criteria they establish what is or is not corruption and what types of corruption are susceptible of being condemned/tolerated. This paper makes an innovative contribution to fill this gap. We propose a methodological design to identify and measure different perception-based definitions of corruption based on two contrasting normative perspectives: deontological and consequentialist ethics. We identified four groups: the Virtuous; the Intransigent; the Pragmatic; and the Hypocrite. Using survey data from a national sample of Portuguese citizens, we employ discriminant analysis and logistic regression models to differentiate individual profiles in terms of process- and outcome-based social definitions of corruption and explore the explanatory factors that account for these different conceptualisations and their different degree of tolerance towards corruption.

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1 Introduction

There has been an enduring debate in the field of corruption studies, at the theoretical, empirical and policy levels, on whether corruption is a social bad or it can have positive benefits to the community. The first has a long tradition in the Western political thought. Corruption as a deviant behaviour/practice concerns the breach of legal/formal rules and standardised expectations governing an office of entrusted authority (de Sousa, 2008; Gardiner, 1992; Johnston, 1996; Jos, 1993). Corruption expressed a deviation from some idea of righteousness, "the manner in which things should be done" (Ledeneva, 2009, p. 71) or from "some basic shared understanding about the common good" (Etzioni, 2014, p. 143). As the study of corruption expanded to other social and cultural contexts, where informal institutions prevailed and turned out to be more effective than formal ones in providing goods and services for the community, corruption began to be regarded as "another form of political influence". During the 1960s, the focus shifted to the positive outcomes of corruption. Certain forms of corruption were tolerated in so far, they were perceived as enhancing the well being of individuals and helped to hold shaky systems together (Bayley, 1966; Huntington, 1968; Leff, 1964; Scott, 1972).

These two approaches highlight the centrality of deontological and consequentialist ethics in our reasoning about the way corruption is defined and judged at the individual level. People can judge a given action or conduct as corrupt, from a deontological perspective, as a breach of rules and standardised expectations governing an office of entrusted authority; but they can also judge it, from a consequentialist perspective, in terms of the value of the consequences of a given act or conduct in the discharge of official duties. Notwithstanding the significant progress made to capture gradients of corruption using real-life scenarios (Peters & Welch, 1978, 2002; Atkinson & Mancuso, 1985; Mancuso, 1993, 1995; Jackson et al., 1994; Jackson & Smith, 1996; NSW ICAC, 1994, 2001; Gorta & Forell, 1995; Jackson & Smith, 1995; McAllister, 2000; Atkinson & Bierling, 2005; Bezes & Lascoumes, 2005; de Sousa and Triães 2008; Pelizzo & Ang, 2008; Allen & Birch, 2015), and, to a lesser extent, to measure tolerance towards corruption (Moreno, 2002; Gatti, Paternostro & Rigolini, 2003; Pop, 2012; Lavena, 2013; Pozsgai-Alvarez, 2015; Chang & Kerr, 2017; Hunady, 2017; Gouvêa Maciel, 2021), we have still not fully deciphered by what normative criteria individuals establish what is or is not corruption. Most of these studies entertained the idea that the lack of consensus that typifies ethical judgements on real-life integrity-based scenarios indicates that when people are faced with making a decision about a given act or conduct in the discharge of official duties, they will hinge primarily upon personal ethical systems. Disagreements concerning what is or is not corruption are expected, when personal ethical systems are different (Forsyth, 1980).

Our paper makes a theoretical and empirical contribution to the literature that looks at gradients of corruption in order to understand what types of corruption individuals are more likely to accept, condone or endure corruption (Gouvêa Maciel, 2021; Pozsgai-Alvarez, 2015). By measuring the extent to which individuals position themselves in relation to two conceptual approaches to corruption, corruption as a *deviant process* and as a *deviant outcome* (Gouvêa Maciel et al., 2022), by classifying individuals into one of four different conceptual frames resulting from the intersection of those two dimensions and by inquiring on the individual level traits of each of those groups, we throw light on differences in ethical judgment processes when labelling a given act or conduct as corruption or not.

We use a normative ethics lens to better understand the ethical underpinnings of individual perception-based definitions of corruption. By doing so, we bring in two normative

theories that, cognitively or intuitively, guide the attitudinal evaluations of a given act or behaviour as corruption: deontological ethics by which individuals judge acts and behaviours based on a stricter (legal) or wider (beyond the law) interpretation of the ethical standards governing an office of entrusted authority; and consequentialist ethics, by which individuals makes their judgement based on the value of the consequences of acts and behaviours in the discharge of duties bring about. We are aware that this approach is a simplification of a more complex normative debate about the moral theories guiding individual ethical judgements and that such theories are not monoliths but include several variants (see Alexander and Moore, 2021 on *deontological ethics* and Sinnott-Armstrong, 2022 on *consequentialism* for a more detailed discussion of these variants).

Although we value the deontological and consequentialist perspectives to understand how people construct and express their opinions about corruption, we recognize that there are alternative ways of looking at these issues. Individuals construct their own perception-based definitions of corruption and express their judgements about certain actions or behaviours through different degrees of moral reasoning, based on their ability to process information in a logical manner from different sources, including familiarity or experience with the given scenarios. Some judgements are more cognitive than others, some are more consistent than others; some are more advanced and sophisticated than others. That said, we are neither measuring the moral development of individuals (Kohlberg, 1969), nor inquiring into the determinants of their ethical decision-making (Trevino, 1986). Instead, we are looking at how individuals construct their own perception-based definition of corruption by focusing on rules at the process level or consequences at the outcome level and how that affects the way they judge specific integrity scenarios as corruption or not.

In view of the above, this article intends to study (RQ1) how individuals construct their own definition of corruption by focusing on rules at the process level (deontological dimension) and consequences at the outcome level (consequentialist dimension); (RQ2) what profiles of conceptualisation emerge through the intersection of these two dimensions of perception-based definitions of corruption; and (RQ3) what attitudinal and sociographic determinants help to explain those profiles. We will do so in three steps. First, we conduct a cross tabulation of the *deontological dimension* ("corruption as deviant-process") and the *consequentialist dimension* ("corruption as deviant-outcome") to see how individuals position themselves along these two conceptual strands. We identify four groups of perception-based definitions of corruption held by individuals using these two normative dimensions. Second, a discriminant analysis (DA) and logistic regression is used to identify those attitudinal factors and sociographic attributes that might be more effective at predicting membership among these four groups. Third, we use regression analysis to test how these four groups issue their judgements on two hypothetical integrity scenarios (one on transactive corruption[1] and one on non-transactive[2] corruption). These scenarios are descriptive to elicit normative judgments about what one thinks corruption is or is not, rather than prescriptive or predictive judgements about what one *should* do or *would* do in such situations.

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[1] "Transactive corruption" involves an officeholder abusing entrusted power for private benefit with an immediate payoff (Alatas, 1968; Scott, 1972; Noonan Jr., 1984; Lowenstein, 1985; Husted, 1994; Cartier-Bresson, 1997; de Sousa, 2008).

[2] "Non-transactive corruption", making use of one's personal contacts to influence someone with decisional power in order to obtain an advantage for oneself or third parties with no (immediate) payoff involved (Alatas, 1968; Scott, 1972; Blundo, 2003; Husted, 1994; de Sousa, 2008).

Why is this exercise relevant? Outlining differentiated profiles of how corruption is defined/judged by individuals may help us design group-targeted control policies aimed at reducing margins of tolerance towards corruption in society. Countries and organisations put a lot of emphasis on awareness raising and ethics training initiatives and spend significant amounts of resources to put them into practice without prior knowledge on gradients of corruption. Gorta and Forell (1995) suggested that individuals' willingness to report corruption hinges primarily upon the scope of their perception-based definition of corruption. In other words, what people regard to be or do not be corruption, it will impact on their decision to report. Despite all the efforts developed in recent years to encourage individuals to report suspicious actions or conducts, many are still reluctant to do it due to a series of institutional and cultural constraints pending negatively on their decision (Mansbach, 2007; Previtali & Cerchiello, 2021; Rachagan & Kuppusamy, 2013). Unfortunately, we know more about the institutional constraints than we do about the way people think and make ethical judgements about corruption, hence the added value of this study.

The paper is organised in four parts. First, we discuss the importance of deontological and consequentialist normative theories to frame definitions and attitudes towards corruption. Second, we present the data and methods we used for our empirical study, based on a survey of Portuguese citizens. We then display the main results of our study. Finally, the paper concludes with a discussion of the main implications of these findings.

2 Theoretical Framework

Corruption as a social construct will hinge primarily upon individual value systems underpinning the evaluator's conceptualization of ethics (Rose, 2018). Different individuals have different conceptions of what corruption is or is not. Regardless of the sources of information individuals use to construct their abstract notion of corruption, two criteria are identified in the dedicated literature on perceptions of and attitudes towards corruption (Gouvêa Maciel et al., 2022) as important when people establish of what is or is not corruption: legal rules and standardised expectations guiding the discharge of official duties and responsibilities (de Sousa, 2008; Gardiner, 1992; Johnston, 1996; Jos, 1993; Kjellberg, 1992); and the positive/negative outcome that derives from those actions or behaviours in office (van Halderen & Kolthoff, 2017). These two dimensions of perceived corruption ('Deviant Process' and 'Deviant Outcome') invoke two opposing normative theories that, cognitively or intuitively, guide individual ethical judgements (Gouvêa Maciel et al., 2022): deontological and consequentialist ethics. Deontology is a rule-based normative ethical theory. Consequentialism is a retributive-based normative ethical theory. Both approaches demand special attention when studying how individuals define corruption.

In recent decades, philosophers and social psychologists have developed a range of hypothetical moral dilemmas that capture the tension between the consequentialist and deontological ethics. Neither the *trolley* problem (Foot, 1967; Thomson, 1976), nor the *footbridge* problem (Thomson, 1986) are suitable to understand the decision to accept, condone or endure in corrupt behaviour. In both dilemmas, the action involves physical harm and concrete victims, whereas in the case of corruption, the ultimate victim is an abstraction (the public good, the State) and damages are mostly financial, organisational, and reputational. Of course, one could argue that moral and legal persons can also be "victims of corruption", when the alternative for not entering a corrupt deal is too costly for

them. Moreover, the outcome of an act or conduct in the discharge of official duties can be judged positively, even if it implies costs to the officeholder or third parties.

The focus on acts of corruption is placed at the process level when conceptualising corruption from a deontological perspective and at the outcome level when viewing it from a consequentialist perspective. Through the lens of deontological ethics, individuals judge an action or behaviour as not corrupt if observing a set of legal rules and standardised expectations guiding the discharge of official duties and responsibilities; whereas through the lens of consequential ethics, they will judge an action or behaviour as not corrupt if it brings positive outcomes for the community (Spielthenner, 2005a, 2005b; Tiberius & Plakias, 2010). Even if it requires breaching the standing legal/formal norms at some point in time, an action or behaviour will not stand as corrupt if it is perceived on behalf of people's satisfaction, happiness, and welfare (Larry & Moore, 2016).

The literature is not conclusive whether the distinction between deontological and consequentialist normative inclinations as determinants of moral judgements is meaningful. Some authors suggest that such split is artificial, since '"norms" do not guide moral judgment unless they are expected to produce tangible consequences' (Hennig & Hütter, 2020). Others take a more conventional approach by viewing these two normative theories or inclinations guiding individual moral judgements are conceptually distinct and functionally independent processes (Conway & Gawronski, 2013; Greene, 2007).

In this study, we contend that, in abstract, these two normative approaches are conceptually different, but when people, make their judgement whether a given real-life scenario is corruption or not, they do not cognitively develop a clear theoretical framework, but may still intuitively invoke deontological and consequentialist approaches in multiple combinations. This means that individuals can display both inclinations at the same time when judging whether a given action or behaviour is to be regarded as corrupt or not. Let us consider, for example, the following scenario: "A local councillor informally charges 5% of "donations" for each urban project approved. The money is deposited in a bank account of a charitable organization that takes care of orphans." Individuals may judge the scenario as unacceptable by deontological terms since it is illegal (both in penal terms and in regard to public procurement laws), but acceptable in consequentialist terms since the money was used to improve the well-being and happiness of disadvantaged children. Such scenario displays a conflict between the two normative theories guiding perception-based definitions of corruption. However, if the same unduly charged money was used for personal or party benefit, to buy an expensive car or to pay for the electoral expenses it would be both unacceptable in deontological and consequentialist terms.

The literature is also inconclusive in regard to the prosocial effect of these two normative approaches. Some authors argue that both deontological and consequentialist ethics have equal prosocial footing (Greene, 2007; Uhlmann et al., 2015). We contend that both normative theories contribute to moral judgment formation and ethical decision making in multiple combinations, and that individuals who hold some combinations of ethical reasoning are less willing to accept, condone or endure corruption than others.

Toward this end, we will independently quantify the strength of deontological- and consequentialist-oriented definitions of corruption held by individuals using two separate variables and produce a 2×2 typology of perception-based definitions of corruption.

From a deontological perspective, perception-based definitions range from a minimalist to a maximalist understanding of deviance at the process-level. Some individuals are more inclined to believe that corruption is foremost a violation of established legal norms governing the exercise of an office of entrusted authority (Nye, 1967). Others contend that legal standards represent an important criterion to judge deviant behaviour in the discharge

of duties, but not the sole criterion. A pure legal definition of corruption would simply omit those conducts and practices which do not necessarily imply a breach of law, but still involve 'a serious violation of the standards and expectations associated with a public role' (Gardiner, 1992; Jos, 1993; Kjellberg, 1992).

From a consequentialist perspective, individuals are inclined to consider that any action, omission, and/or intention committed by natural or legal persons with entrusted authority is to be considered as corruption or not, depending on the value of the consequences of the intended action for the society (Philp & Dávid-Barret, 2015; van Halderen & Kolthoff, 2017; Rose, 2018; Crank & Caldero, 2000; Klinkhammer, 2013). Under certain circumstances, such externalities can be regarded as positive, or at least not sufficiently harmful, independently of the conduct or action that gives rise to such outcomes being considered illegal or improper at the deontological level.

The remainder of this article describes how the 2×2 typology of perception-based definitions of corruption was operationalized to represent and examine individual variations in ethical judgments. In order to test the adequacy of the typology we investigate those attitudinal factors and sociographic attributes that might be more effective at predicting differences in individuals' attitudes towards corruption and their placement among the resulting four groups.

As we explain in the next section, our empirical analysis focus on Portuguese citizens. In this regard, Portugal stands as an interesting case study because there is a high degree of inconsistency regarding citizens' perceptions and attitudes towards corruption. Recent empirical studies (Gouvêa Maciel, 2021; Hunady, 2017) demonstrate a strong association between the perceived extension of corruption within a country and citizens' tolerance towards corruption. In Portugal, we observe the opposite. According to Eurobarometer data, Portuguese citizens show a high degree of intolerance towards corruption, similar to Nordic European countries;[3] while at the same time, they believe, unlike their Nordic counterparts, that corruption is a major problem in the country.[4]

3 Data and Methods

Since perceptions of corruption will hinge "primarily upon which value systems underpin the evaluator's conceptualization of ethics" (Rose, 2018), we have assessed how respondents define corruption from two normative perspectives: as either a deviant process from established legal norms and/or accustomed or expected ways of behaving in the exercise of duties and the discharge of responsibilities (*deontological perspective*) or a deviant outcome with negative externalities (*consequentialist perspective*) (Philp & Dávid-Barrett, 2015; Rose, 2018; van Halderen & Kolthoff, 2017).

The data used in our analysis was collected through a mass survey developed under the auspices of the EPOCA project, conducted by the Institute of Social Sciences of

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[3] EB92.4 (2020). QB4T (Tolerance index to corruption) "Talking more generally, if you wanted to get something from the public administration or public services, to what extent do you think it is acceptable to do any of the following? To give money; To give a gift; To do a favour." 88% of Portuguese respondents found unacceptable using any of those three resources for that goal. This was the single highest score out of the 27 countries of the EU (EU27 average: 68%).

[4] EB92.4 QB5. "How widespread do you think the problem of corruption is in (OUR COUNTRY)?". In 2005, 91% of the Portuguese perceived corruption as a major problem in their country, with an increased to 97% in 2009 and 2011, and a slight drop to 92% in 2017 and then a slight upheaval to 94% in 2020.

the University of Lisbon on social and political issues in Portugal, to a sample of 1020 respondents, which ensures compliance with a high sample size (of 15 cases per predictor variable), for the logistic models, and normality, linearity, and equality of intragroup variances for the discriminant models.

As discussed above, the lack of theoretical models that address the question regarding individual-level predictors of perception-based definitions of corruption has led us to seek an empirical model to explore this research question. At the same time, the academic literature has insufficiently addressed the question of which traits characterize people who have different definitions of corruption and how that affects their judgements towards corruption.

For this purpose, we have independently quantified the strength of deontological- and consequentialist-oriented definitions of corruption held by individuals using two separate variables which, combined by cross-tabulation,[5] result in four ideal types –explained below– that will help us in addressing our research question:

- From a deontological perspective, perception-based definitions of corruption range from a minimalist (legal breach) to a maximalist (beyond legal breach) understanding of deviance at the process-level. Corruption can be understood, more narrowly, as an infringement of legal standards in the discharge of official duties (Nye, 1967) or, more broadly, as conducts or practices that involve a serious violation of the standardised expectations associated with an office of entrusted power, but which do not necessarily imply a breach of law (Jos, 1993; Kjellberg, 1992; Gardiner, 1992). In other words, for some individuals conducts or actions need to be unambiguously illegal to be considered as corruption. Their understanding of corruption resumes to acts of bribery, theft, or embezzlement. Others hold a wider definition and would extend the corruption label to acts which they consider unethical but not necessarily illegal, such as conflicts of interest, corporate political donations, ministers taking jobs with firms in sectors they covered in government, lobbying for reward and parliamentary paid advocacy (Mancuso, 1993; Peters & Welch, 1978; Rothstein & Teorell, 2008; Teremetskyi et al., 2021). Our respondents were asked about their degree of agreement (in a scale from 0 to 10) with the statement "Conduct must be illegal for it to be corruption". We considered individuals holding a minimalist definition, those who agree with the statement (scoring 6 to 10) and a maximalist definition, those who disagree (scoring 0 to 4). Those individuals who score 5 in this variable (83 individuals) are excluded from the analysis in order not to attribute them arbitrarily one of the possible four groups that are obtained from this cross-tabulation.
- From a consequentialist perspective, perception-based definitions of corruption vary from whether the value associated to the consequences of that act or conduct is positive or not, that is, if the behaviour brings positive or negative benefits or externalities for most society (Spielthenner, 2005a, 2005b). Some individuals exclude a given act or conduct by natural or legal persons with entrusted power from their definition of corruption in so far, its perceived externalities are regarded as positive or, at least, not sufficiently harmful under certain circumstances. Let us consider, for example, the Mayor who solicits bidders in municipal public procurement processes to donate 5% of the value of the contract to a local charity that supports disabled and disadvantaged children in order

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[5] Cross tabulation of variables and their distribution can be found in the appendix.

to be invited or consulted to submit a proposal. Despite the clear legal implications of the action, some individuals might consider that this is not condemnable since it brings positive benefits to the community. This social understanding of corruption has been described in the literature under different labels: 'noble cause' corruption (Crank & Caldero, 2000), 'Robin Hood' corruption (de Sousa, 2008), or 'useful illegality' (Klinkhammer, 2013). Others consider certain actions as corrupt because its effects are considered negative to society as a whole or to third parties who had no control over the deviant conduct or process that generated them. The decision of a given corporation to pay its taxes in a different jurisdiction due to fiscal advantages may be judged as a corrupt or fraudulent conduct by citizens from the country of origin, since it negatively affects their country's redistributive capacity, even if no illegality has been committed (Alexander & Moore, 2007; Philp & Dávid-Barrett, 2015; Rose, 2018; van Halderen & Kolthoff, 2017). Our respondents were asked about their degree of agreement (in a scale from 0 to 10) with the statement "If the action brings benefits to the population in general". Thus, we regarded as individuals more prone to a consequentialist attitude those who score 6 to 10 in the scale and less prone those who disagree with the statement (scoring 0 to 4). Again, we excluded from the analysis the 188 individuals who scored 5 in this variable.

The choice of these two variables to assess the strength of deontological- and consequentialist-oriented definitions of corruption is both theoretically and empirically grounded. We draw these two variables from a set of five attitude statements along which a given action is evaluated as corrupt or not (NSW De Sousa, 2008; de Sousa et al., 2022; ICAC, 1994, 2001): the breach of legal norms; the conformity to social norms; the noble cause intention; the (positive) externalities to third parties; and the unawareness of the law. These items have been used in different survey rounds and were pre-tested in focus group discussions prior to conducting the fieldwork to check their intelligibility and appropriateness (de Sousa et al., 2021). We also conducted a PCA analysis using these five conceptual dimensions. Two factors come out from this analysis, capturing the two normative theories of political ethics: deontological and consequentialist ethics.[6] A recent scoping review on corruption articles in high-impact journals (Gouvêa Maciel et al., 2022) has also observed that the explicit or implicit definitions of "corruption" discussed in those publications tend to fall into two categories: corruption as a "Deviant Process" (deontological dimension) or as a "Deviant Outcome" (consequentialist dimension). Although there is room for improvement, we believe the selected items are adequate to measure the two conceptual dimensions.

- The 'Virtuous', who believes corruption is foremost an unethical conduct (broader than the legal definition) and that the ends (positive/negative outcome for the community) do not justify the means.
- The 'Intransigent', who believes that corruption is by definition a legal breach and that it is always condemnable even if it is done for positive/negative outcome for the community.
- The 'Pragmatic', who accepts that corruption is not merely a legal breach and that it may also be justifiable when done for positive/negative outcome for the community.
- The 'Hypocrite', who believes that the law defines what is to be qualified as corruption but feels that sometimes the ends (positive/negative outcome for the community) justify the means.

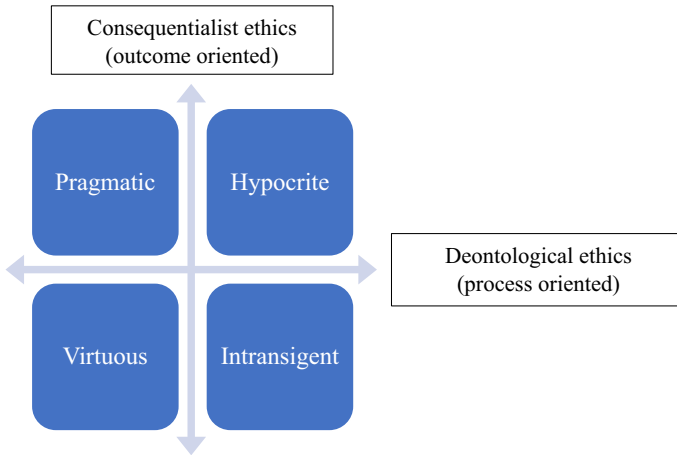[6] The results can be consulted in the appendices.

Fig. 1 depicts the four potential groups that come out from this operation

In this sense, our hypothesis is that a ranking of tolerance towards corruption among these four groups of conceptualisations could be established. We expect that the group less prone to tolerate corruption would be the Virtuous: they have a broader conception of corruption (legal definitions are not enough) and think that whatever the outcome corruption is always unacceptable. We also expect, on the contrary, that the group with the most tolerant attitude towards corruption would be the Hypocrites who have a narrower conception of corruption (only defined by legal norms) and tend to excuse corrupt behaviour when it justifies the means. Finally, we contend that, the other two other groups –the Intransigent and the Pragmatic– will stand in a middle position. After tracing the different social and attitudinal profiles of these four groups we will be testing this hypothesis on their different degree of tolerance towards corruption.

The 2×2 typology to classify variations in ethical judgment processes, may be an oversimplification of reality, but it is not unprecedented. As an attempt to classify individual variations in approaches to ethical judgements, Forsyth (1980) proposes a 2×2 taxonomy of two different ideological perspectives: idealism and relativism. Four different approaches to making ethical judgments ('situationism', 'absolutism', 'subjectivism', and 'exceptionism') emerge from this analysis and individuals are classified into one of these groups depending on whether they espouse idealistic or non-idealistic values, and believe moral rules are universal or relative. More recently, Mazzoleni (2008) developed a 2×2 typology of moral tolerance towards politicians resulting in four groups of individuals ('indulgents', 'formalists', 'legalists' and 'intransigents'). One of the dimensions of analysis assessed the extent to which individuals believed "politicians were allowed morally to transgress in pursuit of a 'just' result, in accordance with the principle that 'the ends justify the means'"; another evaluated "people's tolerance of situations in which the moral reputation of a politician comes under discussion". Similar to these studies, the four groups emerging from our 2×2 typology of different perception-based definitions of corruption are theory driven and empirically derived. However, given that we cannot arbitrarily attribute to one of our four groups resulting from our cross-tabulation those respondents who score five in any of the dependent variables, and being aware that this could be an

important limitation, we have also performed an alternative discriminant analysis including this additional group that we called " neutrals".[7]

The independent variables we have used to explain variations in perception-based definitions corruption can be grouped into four sets. We have used the standard sociodemographic predictors that are treated in the dedicated literature on tolerance towards corruption (sex, age, education, employment status, income, habitat) and we have also added political attitude variables (ideological self-positioning, political interest, political trust); egocentric economic evaluations (envy, lucky, precariousness index, economic security) and corruption perceptions (Gouvêa Maciel, 2021). The aim of our various analyses is to find what traits characterize the individuals in these four groups and then to test whether individuals display a higher or lower tolerance towards corruption when exposed to two hypothetical real-life scenarios. As already said, we start with an exploration of the differences among the four groups we have established.

For this purpose, we complement the logistic regression with a discriminant analysis, which allows us to describe the characteristics that differentiate the individuals of one group (subjects) from those of other groups –getting a clearer description of the respondents' individual traits within each group, thus obtaining the linear combination of independent or predictor variables (called the canonical discriminant function) that maximises the differentiation between groups. As a result, the probability of a subject belonging to a given group can be predicted based on the values presented in the variables that integrate each function. This method provides an explanatory model with greater and more robust statistical corroboration of the results.

Finally, we run a very simple logistic regression model in order to observe whether statistically significant differences in tolerance towards corruption exist among our four groups of individuals. The following section presents the results of both steps in our methodological strategy.

4 Results

Table 1 shows the results from the multinomial logistic regression model, where the Virtuous (who believes corruption is foremost an unethical conduct and that the ends do not justify the means) is the reference category. The model fit is assessed by the AIC where a lower AIC suggests a better model fit in comparison to other models (Long, 1997). Four additional pseudo-R squared values are also provided in Table 2 to show the fit of the models. All of them show high fit levels. Model 3, the most complex model, is invariably the most powerful predictor. The sample size dropped[8] from 1020 to 676 respondents due to the elimination of those individuals –271– who score 5 in any of the scales that comprised the cross-over in the dependent variable, and to missing values on certain variables. This reduction in sample size could also lead to small cell counts, and for some variables the

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[7] This analysis with five profiles of tolerance towards corruption, which can be consulted in the appendix, displays worse predictive strength than that with four profiles, and is not as significant, while variables such as interest in politics or the real impact of corruption on respondents' lives are no longer significant. The main discriminant variable would be income, being the lowest among the five groups. In any case, this group would represent less than 3% of the population, so the significance of the results could be questioned (see tables 14 and 16 in Appendix).

[8] The drop in N is due both to the operationalisation of the dependent variable and to the introduction of independent variables in the model. This reduction does not affect the robustness of the results, according to the CLT.

lack of significance might have to do with lack of cases rather than lack of correlation. In any case, this decision is taken consistently so as not to arbitrarily attribute the ascription of these cases –which score 5 in any of the questions that make up the dependent variable– to one group or another when it was clearly not possible to ascribe them exclusively to one of the 4 theoretical groups. Likewise, as our sample was sufficiently large (n > 30, following the Central Limit Theorem (CLT)) whatever the sample mean distribution is, it will follow approximately a normal distribution.

In Table 1 we can see that only some of the variables included in the model have a significative effect, but it is not consistent across all groups. For example, only education (particularly those with less than primary studies) have a strong significative and negative effect in distinguishing between the Intransigent (who believes that corruption is by definition a legal breach and that it is always condemnable even if it is done for positive outcome for the community) and the other three groups. But for the remaining groups, the coastal/inland variable is the most relevant to differentiate them. This is one of the most interesting findings in the analysis, although its effects need to be nuanced through the interpretation of the marginal effects and the DA.

Other significant variables, albeit for specific individual typologies, are precariousness index, income or the fact of paying bribes. More precisely, the indicators of personal economic perception (fairness of wealth redistribution, degree of precariousness, degree of envy) have a significative effect in distinguishing the Hypocrite from the other three groups. Another prominent and significant effect is the impact of corruption, with positive relationships on pragmatic and intransigent individuals. Not having been asked for bribes is positively related to these ideal types. However, the multinomial logistic regression results only allow us to compare the three groups to the control group. Coefficients from multinomial logit can be difficult to interpret because they are relative to the base outcome. The main purpose of the analysis is a comparison across the four groups. Another way to evaluate the effect of covariates is to examine the marginal effect of changing their values on the probability of observing an outcome. Hence, post-model estimation in the form of predicted probabilities is necessary. Predicted probabilities were calculated on the model in Table 1 and are presented in Table 3.

We can estimate the predictive marginal effect of each covariate on the likelihood of observing each outcome of our dependent variable. By default, we estimate the average marginal effect over the estimation sample and that is what we see in the table. Predicted probabilities tell us how likely is for any respondent to fall into a particular category of the dependent variable –our four groups– based on the characteristics these individuals have on the independent variables included in the model (Long & Freese, 2006). A higher mean shows a higher probability.

The results in Table 3 show that the more precarious the economic situation is for an individual, the less likely it is that she/he will belong to the Virtuous group. In terms of probability, as a person's precariousness increases, the likelihood of being part of the Virtuous group decreases by 1,3 percentage points. This is also true for wealth redistribution. When wealth redistribution is perceived to be very unfair, the probability of belonging to the virtuous group decreases by 21%. According to our hypothesis on the ranking of tolerance towards corruption among the four groups, where the Virtuous group is expected to be the least tolerant, those individuals in a better-off economic situation and who feel that they are not mistreated in the wealth redistribution are likely to be more intolerant towards corruption. Those who consider that wealth redistribution

Table 1 Multinomial logistic regression results

	PRAGMATIC			VIRTUOUS	HYPOCRITE			INTRANSIGENT		
	Model1	Model2	Model3	Model 2 (base outcome)	Model1	Model2	Model3	Model1	Model2	Model3
	Coef. b	b	b	Coef. b	Coef. b	b	b	Coef. b	b	b
SEX	0,49,296	0,45,469	0,27,363		−0,02465	−0,08697	−0,21,573	0,13,482	0,00442	0,07906
AGE	−0,00459	−0,0042	−0,00377		−0,00301	−0,00044	0,0031	0,00511	0,00821	0,00987
Educational level/uneducated	0,511	1,14,789	1,25,698		1,58,634	1,99,542	1,93,807	−10,47,603	−10,16,254	−11,69,642***
Primary	−0,73,996	−0,51,836	−0,8799		0,84,336	0,91,169	0,64,517	0,60,668	0,94,344	0,60,874
Secondary	−0,68,426	−0,55,711	−0,86,622		0,35,446	0,40,774	0,21,069	0,18,483	0,32,942	0,01235
Undergraduate	−0,58,345	−0,62,579	−0,98,231		0,74,618	0,81,387	0,62,377	0,53,486	0,53,632	0,32,862
Graduated	0	0	0		0	0	0	0	0	0
Coastal habitat	1,68,462**	1,75,032**	1,97,648**		2,69,087***	2,89,189***	3,20,634***	4,05950***	4,3047***	4,15,483***
Rural areas	0,31,791	0,21,674	0,19,467		−0,56,321*	−0,56,282	−0,56,531*	−0,15,063	−0,1741	−0,11,499
Urban areas	1,96,126***	1,81,587**	1,55,587**		−0,54,799	−0,59,508	−1,02303*	−0,24,369	−0,26,224	−0,14,131
Suburban areas	0	0	0		0	0	0	0	0	0
Income	−0,52,481***	−0,46,580**	−0,50,876***		−0,15,125	−0,03782	−0,13,804	0,06451	0,07563	0,0615
Ideology	0,31,218*	0,27,761*	0,25,605		0,151	0,16,621	0,15,643	0,15,631	0,13,684	0,15,711
Political interest	−0,1702	−0,12,979	−0,14,654		−0,19,058	−0,17,641	−0,23,631	−0,35,598***	−0,37,132**	−0,43,411***
Trust on parliament	0,02784	0,04701	0,02644		0,05883	0,07932	0,0443	0,04623	0,07247	0,08361
Trust on the judiciary	0,10,564	0,08771	0,03687		−0,08533	−0,0884	−0,13,267*	−0,03974	−0,0559	−0,06586

Table 1 (continued)

	PRAGMATIC			VIRTUOUS	HYPOCRITE			INTRANSIGENT		
	Model1	Model2	Model3	Model	Model1	Model2	Model3	Model1	Model2	Model3
Precariousness index		0,08801	0,12,018			0,10,790*	0,11,387		0,11,908*	0,12,182*
Envy index		0,00881	0,00424			0,13,259*	0,11,181		0,03813	0,08578
Luck index		0,03049	0,01853			−0,10,661*	−0,10,957*		−0,05533	−0,03482
Wealth redistribution _unfair		1,32,552	1,42,915			1,63,859	1,61,502*		1,93,952	2,38,214
W. red_neither fair nor unfair		0,75,579	0,84,886			0,91,041	1,00285		1,46,088	1,82,101
W. redistribution_fair		0	0			0	0		0	0
ECOS Bad		−0,50,592	−0,83,127			0,20,985	−0,09901		−1,01599	−0,99,081
ECOS Good		−0,04866	−0,15,424			0,34,198	0,14,066		−0,41,497	−0,38,793
ECOS Very Good		0	0			0	0		0	0
Life satisfaction		−0,03172	−0,01023			0,10,733	0,12,365		0,11,049	0,1068
Worsened personal economic situation		1,11,498	1,18,404			0,59,036	0,60,409		1,21,654	1,52,381
Unchanged pers. Eco. Sit		0,87,689	0,86,315			0,63,341	0,5708		0,79,131	1,02904

Table 1 (continued)

	PRAGMATIC			VIRTUOUS	HYPOCRITE			INTRANSIGENT		
	Model1	Model2	Model3	Model	Model1	Model2	Model3	Model1	Model2	Model3
Improved pers. Eco. Sit		0	0			0	0		0	0
GES worsened		−2,12,909	−2,3715			−1,3603	−1,35,664		−0,47,249	−0,51,911
GES equal		−1,27,126	−1,42,586			0,02557	0,07219		0,60,804	0,65,335
GES improved		0	0			0	0		0	0
ICP			0,15,903				−0,1734			0,2494
RIC			−0,01107				0,0438			−0,53,649
Perceived corruption			−0,0144				−0,01457*			0,00298
P18_1PICCv19			−0,06948				0,04596			−0,12,346
P18_2PICCv19			0,15,035				0,23,496***			−0,06236
Corruption impact (bribery) Non impact			15,62,564***				0,41,766			14,99,313***
Corruption imp. Medium			15,04565***				−0,97,279			13,44,769***
Corruption imp. High			0				0			0
constant	−1,48,488	−2,23,407	−17,0469***		−0,70,548	−3,90,777*	−3,54,976	−2,99,901**	−6,46,138**	−20,08314***

*p < 0.05, **p < 0.01, ***p < 0.001

Table 2 Adjustment of models

Adjustment of models	Model 1	Model 2	Model 3
N	713	694	676
McFadden's R2:	0.157	0.196	0.264
R2 Nagelkerke	**0.355**	**0.425**	**0.53**
Maximum Likelihood	**0.327**	**0.391**	**0.488**
Count R2:	0.238	0.254	0.26
Cragg & Uhler's R2:	**0.355**	**0.425**	**0.53**
AIC:	1610,46,206	1574,43,611	1463,27,078
BIC:	1816,08872	1942,37,634	1919,40,628

$*p<0.05, **p<0.01, ***p<0.001$

Table 3 Predictive marginal effects of belonging to the four groups

	Pragmatic		Virtuous		Hypocrite		Intransigent	
	dy/dx	P > z	dy/dx	P > z	dy/dx	P > z	dy/dx	P > z
Sex	0,02017	0,324	0,0034	0,900	−0,05225	0,104	0,02867	0,368
Age	−0,0005	0,498	−0,00059	0,563	−0,00033	0,787	0,00141	0,250
Academic studies								
(uneducated)	0,25,776**	0,008	0,45,150**	0,004	1,44.423***	0,000	−2,1535***	0,000
Primary Education	−0,08082	0,143	−0,05034	0,463	0,07552	0,485	0,05564	0,565
Secondary Education	−0,05699	0,295	0,00055	0,993	0,05766	0,587	−0,00122	0,990
Undergraduate	−0,08076	0,139	−0,03426	0,609	0,10,171	0,331	0,01331	0,887
Graduate	0		0		0		0	
Coastal	−0,0478	0,189	−0,3921***	0,000	0,10,254	0,203	0,33,736***	0,001
Rural	0,02832	0,289	0,03172	0,302	−0,09215**	0,008	0,03211	0,368
Urban	0,1213***	0,000	0,03765	0,386	−0,2041***	0,000	0,04522	0,391
Suburban	0		0		0		0	
Income	−0,029***	0,001	0,01103	0,290	−0,01696	0,198	0,03378*	0,010
Ideology	0,00804	0,265	−0,01911*	0,042	0,00535	0,628	0,00572	0,634
Political interest	0,00602	0,430	0,03512**	0,005	0,00492	0,706	−0,0461***	0,000
Trust in Parliament	−0,00123	0,809	−0,00668	0,339	−0,00111	0,907	0,00902	0,310
Trust in Judiciary	0,0069	0,183	0,00945	0,143	−0,01761*	0,044	0,00127	0,878
Precariousness index	0,00178	0,718	−0,01336*	0,021	0,00487	0,530	0,00672	0,365
Envy index	−0,00432	0,317	−0,00992	0,130	0,01099	0,152	0,00325	0,690
Success index	0,0046	0,356	0,00702	0,197	−0,01615*	0,023	0,00453	0,506
Wealth redist. unfair	−0,00414	0,932	−0,21,749*	0,017	0,01235	0,937	0,20,928	0,300
Wealth redist. neither fair nor unfair	−0,01166	0,835	−0,1511	0,112	−0,02464	0,880	0,18,741	0,362
Wealth redist_fair	0		0		0		0	
ECOS_Hard + Very hard	−0,027	0,537	0,06452	0,301	0,10,059	0,175	−0,13,811*	0,033
ECOS_Just living	−0,00502	0,886	0,01377	0,753	0,06621	0,288	−0,07496	0,111

Table 3 (continued)

	Pragmatic		Virtuous		Hypocrite		Intransigent	
	dy/dx	P > z	dy/dx	P > z	dy/dx	P > z	dy/dx	P > z
ECOS_Comfortable	0		0		0		0	
Life satisfaction	−0,0059	0,401	−0,01134	0,200	0,01137	0,266	0,00587	0,563
SITECOPER1 worsened	0,02434	0,777	−0,12,096	0,103	−0,07367	0,600	0,17,028	0,205
SITECOPER2 equal	0,01603	0,849	−0,09086	0,190	−0,02304	0,867	0,09787	0,450
SITECOPER3 improved	0		0		0		0	
SITECOG1 worsened	−0,09544	0,069	0,12,685	0,322	−0,12,469	0,372	0,09328	0,477
SITECOG2 equal	−0,09937	0,108	−0,01582	0,907	−0,01452	0,920	0,12,972	0,338
SITECOG3 improved	0		0		0		0	
Increase Corruption Perception	0,0089	0,607	−0,00545	0,778	−0,05854*	0,020	0,05508*	0,028
Real impact corruption	0,00891	0,604	0,02395	0,386	0,06016	0,070	−0,09301**	0,006
Perceived corruption	−0,00054	0,241	0,0008	0,156	−0,0025***	0,001	0,00220***	0,001
Pandemic more corruption Portugal	−0,00284	0,604	0,0046	0,499	0,02180*	0,012	−0,02357**	0,003
Pandemic sensible ignoring principles	0,00413	0,311	−0,01101*	0,028	0,04310***	0,000	−0,0362***	0,000
Real impact bribery								
(non −impact)	−0,03205	0,503	−0,15380**	0,01	0,07654	0,519	0,10931	0,386
Medium impact	0		0		0		0	
High impact	−0,649***	0,000	0,80931***	0,000	1,8648***	0,000	−2,0252***	0,000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

in Portugal is unfair tend not to belong to the Virtuous group (reducing the probability of belonging to this group by 21%). Finally, the likelihood of being part of the Virtuous group decreases when one lives on the coastal areas (39%).

As it would be logically expected, the theoretical opposite group to the Virtuous, i.e., the Hypocrite group, the one with the expected highest tolerance to corruption according to our initial hypothesis, tend to live more in suburban cities. Also, feeling successful in life decreases the probability of belonging to the hypocrite group by 1.6%, for each unit that one moves up the success scale. Although the major difference with the opposite group, i.e., the Virtuous, lies in the belief that in certain contexts, like the pandemic, it makes sense to ignore ethical principles if this serves to solve problems, a view that fits perfectly with a consequentialist stance.

Regarding the Intransigent group, who believes that corruption is by definition a legal breach and that it is always condemnable even if it is done for positive outcome for the community, worse economic security decreases the likelihood of belonging to this group, with the probabilities standing at 14%. In a very consistent pattern, when an individual has a higher income, the probability of belonging to the Intransigent group increases by 3%. Finally, when one tends to believe that ignoring ethical principles to solve problems in a pandemic context is acceptable and that corruption has impacted directly on her/his own life, a decrease in the probability of belonging to the Intransigent group by 3 and 9% respectively is expected, and even up to 200% if bribes were paid.

To delineate more clearly the typology of the individuals according to their expected attitudes about their ethical attitudes on corruption, an additional discriminant analysis was also run. Table 4 lists the variables that are part of the discriminant model by applying Wilks' lambda statistic for the variable selection. The variables are listed according to the step at which they were incorporated into the model. In each step, the variable chosen is the one that satisfies the double condition of having the smallest lambda value and the highest F-value. That is, the variables chosen for the model are those with the greatest homogeneity among group members and the highest heterogeneity between different group members. Both requirements are related to variables whose means differ significantly across the three groups, leading in turn to high intra-group cohesiveness (among members of the same group).

Knowing the predictor variables that compose each discriminant function and their contribution to the group differentiation, the features of each group can be outlined. The group means (or centroids) represent the mean of the discriminant scores of all cases classified in each group according to the variables that define them. It is interesting to know its value, with respect to each function, because it allows us to discover which are the groups that the linear combination of variables in each discriminant function differentiates. This information is presented at the end of Table 5.

According to the first function, the Virtuous group would live in the country's inland regions, would be in the least precarious situation and, logically, enjoy the highest economic security, compared to the other groups. The second function would differentiate the Intransigent from the other groups. The Intransigent are those individuals who are clearly against the idea that in contexts such as the pandemic, it makes sense to ignore ethical principles if it serves to solve problems—their means are the lowest in this respect. They have

Table 4 Explanatory variables for belonging to the different groups

Introducidas	Wilks' Lambda	F exact	Discriminant function 1		Discriminant function 2		Discriminant function 3		
			Coef. Structure	Potentiality index	Coef. Structure	Potentiality index	Coef. Structure	Potentiality index	Composed Pot. index
Coastal vs. inland	0,709	91,267	0,941*	0,567	−0,204	0,011	0,081	0,001	0,579
Pandemic sensible ignoring principles	0,628	58,022	0,154	0,015	0,766*	0,155	−0,099	0,001	0,171
Urban	0,591	43,302	0,103	0,007	0,098	0,003	0,928*	0,081	0,091
Income	0,578	33,711	−0,137	0,012	−0,346*	0,032	−0,186	0,003	0,047
Perception of corruption	0,562	28,325	−0,044	0,001	−0,0329*	0,000	−0,001	0,000	0,002
Political interest	0,552	24,308	−0,187*	0,022	0,174	0,008	0,034	0,000	0,031
Real impact corruption	0,542	21,452	0,039	0,001	0,277*	0,020	−0,055	0,000	0,022

Relevance of canonical discriminant functions

Function	Canonical correlation	Wilks' Lambda		Chi-square			% Success
		Contrasted functions		Contrasted functions			
		1 to 3	2 to 3	1	2	3	
1	0,559	0,542	0,789	406,198	157,358	42,797	58,5*
2	0,398						
3	0,25		To function 3 0,938				

*Overcomes the proportional causation criterion#

#Following the criterion of proportional causality, which is more suitable for groups with high disproportionality, it would be above 25% of 0.163 (20,39)

All groups are involved in the calculation, not just the largest. To calculate it, the proportion that each group represents with respect to the total number of cases analyzed is squared

The first percentage exceeds the minimum amount commonly taken as a reference of 25% higher than the percentage obtained by chance alone

$Cpro = p1^2 + p2^2 + p3^2 + p4^2 = 0,163,138,484 + 25\% = 20,39$

also the lowest interest in politics, and a high level of precariousness, although they are below the individuals belonging to the hypocritical and pragmatic groups.

Finally, the third and last discriminant function allows us to differentiate the Pragmatic group from the rest. These individuals live mostly in urban environments, find it difficult to live within their economic level and stay at the highest point in the precariousness index, with a poor perception of economic security at home, although not as high as individuals belonging to the Hypocrites group.

In short, the data analysis supports and reinforces the results of the previous logistic model. These results are in line with expectations of the previous analysis. The worse the perceptions about the economic situation at home and, consequently, the lower the satisfaction with life, the greater the likelihood of belonging to the Hypocrite group, that is, of having a more lenient stance towards corruption.

We found clear social and attitudinal differences among individuals belonging to our four groups, but to what extent does that lead to different degrees of tolerance towards corruption? We have run a very simple model of logistic regression to test our expectations as we were not interested in the explaining strength of the model but on the most parsimonious way to test whether we could find differences among our four groups, but controlling still by sex, age, and education (see the model's adjustment in Table 6). We have chosen the two most extreme hypothetical cases of corruption in our survey out of a list of eleven scenarios covering different types of corruption discussed in the specialised literature. We asked our respondents to evaluate each of these scenarios from 0 to 10 according to whether they considered it to be a case of corruption or not (0 meant that it was not a case of corruption at all and 10 that it was a case of corruption). We picked the two most extreme scenarios in the list: one of *transactive corruption* and another of *non-transactive corruption* (see footnote 1 and 2 for the respective operational definitions). The *transactive corruption* scenario was formulated, as follows: "A prosecutor has asked a businessman for 500,000 euros in return for closing a money laundering investigation in the real estate sector". The *non-transactive corruption* scenario was designed, as follows: "An individual asked his sister, a nurse at a hospital, to talk to the doctor to bring forward his appointment that was on a 2-month waiting list". We grouped the scores in these variables in two values from 0 to 7 and from 8 to 10 to clearly differentiate between individuals who saw most distinctly the corruptive nature in that scenario (8–10) and the rest. In case there was no difference in the degree of tolerance to corruption among our four groups, we should find no statistically significant difference among the groups. Results in Table 7 confirmed instead our hypothesis. The Hypocrite group tended to be more lenient towards the transactive corruption scenario, and the Virtuous group was harsher to the non-transactive corruption scenario.

Table 5 Composition of canonical discriminant functions

Discriminant variables		
1st Discriminant function	2nd Discriminant function	3a Discriminant function
Coastal vs. inland	In a pandemic context, it makes sense to ignore certain ethical principles if it serves to solve important problems	Urban
Political interest	Income	Economic security
Precariousness Index	Perception of corruption	
	Real impact of corruption	
The function differentiates the Virtuous (group 2) from the Pragmatic, the Hypocrite and the Intransigent, being the centres of their clusters − 1,222; 0,204; 0,415; 0,352	The second function differentiates group 4 (the Intransigent) from the Pragmatic, the Virtuous and the Hypocrite. Their centroids are: − 0,575; 0,477; 0,011; 0,411	The last function discriminates the pragmatic (group1) from the rest. Their centroids are: 0,857; − 0,037; − 0,173; 0,023

Table 6 Differences in the degree of tolerance to corruption

	Pragmatic dy/dx	Virtuous dy/dx	Hypocrite dy/dx	Intransigent dy/dx
Sex	0,02983	− 0,01346	− 0,02482	0,00845
Youngsters	0,00553	0,00239	0,02328	− 0,0312
Adults	− 0,00227	0,00378	− 0,01342	0,0119
Seniors	0	0	0	0
Basic Educ	− 0,00907	0,02321	0,01321	− 0,02735
Medium Ed	0,00249	0,07868	− 0,03966	− 0,04151
Higher Ed	0	0	0	0
Prosecutor	− 0,01213*	− 0,02404*	− 0,05599***	0,09216***
Nurse	− 0,01068***	0,03336***	− 0,01310*	− 0,00957

$*p < 0.05$, $**p < 0.01$, $***p < 0.001$

Table 7 Adjustment of model

N	731
McFadden's R2:	0.049
Pseudo R2	0.0494
Maximum Likelihood	0.117
Count R2:	0.220
Cragg & Uhler's R2:	0.127
AIC:	1803,76,799
BIC:	1914,03392

5 Discussion

The results of our research have provided two relevant findings. On the one hand, we found significant social and attitudinal differences between our four groups of individuals. On the other hand, these differences also reflect different levels of tolerance towards corrupt behaviour. These findings are a relevant contribution to existing debates in the literature on citizens' attitudes towards corruption and have also important implications for the design of anti-corruption strategies and policies.

Beginning with the contribution to the debates in the academic literature on the subject, our research on Portugal reinforces the position of those authors who postulate that individuals have a more deontological approach to their ethical judgments on corruption are more likely to be pro-social and to put less priority over their self-interest than consequentialist ones (Kreps & Monin, 2014). Some proponents of deontological ethics, more attentive to fulfilling moral obligations regardless of the short-term consequences they may entail, have argued that human evolution itself has favoured a process of natural selection in which individuals with a deontological inclination have prevailed because of the advantages these attitudes have for the preservation of the social group. In this case, we have found that Portuguese citizens who are more prone to deontological ethical positions,

especially those with a broader definition of corruption such as the Virtuous group, are also the most intolerant towards corruption.

In addition, our research has found a striking difference in terms of social profile between our different groups. We found that the more affluent the economic position and the higher the life satisfaction of individuals, the likelier they are to belong to the Virtuous group. On the contrary, experiencing a situation of economic precariousness increases the probability of approaching corruption from a consequentialist perspective, and, of belonging to the Hypocrite group, which is the group more lenient towards corruption.

This finding has significant practical implications for corruption control policies. The more an individual is exposed to a situation of greater precariousness or material deprivation, the more inclined he or she might be to develop a more sympathetic attitude towards corruption. Therefore, as some have said before us (Ariely & Uslaner, 2016; Rothstein & Uslaner, 2005; Rothstein, 2016), we must never lose sight of the fact that the success of the fight against corruption cannot be separated from the objective of mitigating major social inequalities (Fig. 1).

Finally, another relevant finding of our study is the clear impact that the factor of whether one lives in the inland regions or on the coast has on the likelihood of belonging to one of the four groups we have differentiated. More specifically, we have observed that the Hypocrite group tends to live on the coast, while the Pragmatic tend to live in the inland regions and also in rural environments. We do not have an empirically proven explanation for this observation, but we can speculate that it is probably related to the 'broken windows' theory (Amini & Douarin, 2020; Kelling & Wilson, 1982). A court case study by de Sousa and Calca (2020) shows that the municipalities in coastal areas (in particular in the judicial districts of Lisbon, Oporto, and Coimbra) are those that register the highest number of corruption and embezzlement offences. The authors advance two possible explanations for this: 'Much of the corruption cases that took place in the metropolitan area of Oporto, involved municipalities and construction companies and had to do with rapid urban sprawl and land management policies. The fact that embezzlement figures are higher in Lisbon could be related to the fact that most central administration services and public companies are located in this metropolitan area.' (de Sousa & Calca, 2020). Given that the incidence of corruption and related offences has been more frequent in coastal areas, more precisely, in large metropolitan cities with multiple public services, higher rates of public procurement and urban expansion policies, it is possible that individuals living in those places have been more exposed to corruption on a daily basis and therefore may have developed less demanding ethical attitudes and a greater tendency to introduce the calculation of consequences into their moral judgements. However, this is merely speculative and by no means conclusive. In another study on the quality of local governance, Tavares et al. (2018) conclude that larger municipalities in coastal areas, with greater party diversity in the composition of their local government executive and deliberative bodies, tend to display higher corruption control scores. In fact, small towns in the hinterland of Portugal tend to display a series of risk factors conducive to corruption, such as, low political competition, low alternation (with leaderships and parties staying in office for long periods of time), weak institutional checks-and-balances, low independent media scrutiny and a feeble civil society. Not surprisingly, mayors in those places have often been suspected of corruption and abuse of power. However, the greater visibility of corruption in coastal areas could explain why it is more likely to find people in these places who are more inclined to approach corruption through the value of its consequences and with a narrower definition

of corruption at the process-level (the Hypocrite group), even if they are very much in the minority in numerical terms. As the 'broken windows' theory suggests, this greater visibility of corruption might lead some individuals to believe that in such social environments there is no great concern with corruption and therefore it is less costly in social terms to maintain a more sympathetic stance towards corruption.

There are some limitations in this study that could be addressed in future research. First, our 2×2 typology allows progress in knowledge on how individuals construct and express their opinions about corruption, but like all typologies it is always a simplification of a more complex social reality. Further investment is needed in designing better questions to unfold the complexity of perception-based definitions of corruption. We also underline the need to find alternative ways of studying the group of individuals who fall somewhere in between our deontological and consequentialist ethics scales, as they represent an interesting group to analyse. Second, the single-case approach design has also its limitations. The empirical findings reported should be considered in the light of a potential Eurocentric bias. The deontological and consequentialist normative theories may be valid to understand how citizens define and judge corruption in European democracies, but probably less useful to compare opinions and attitudes of people across different cultures. Unfortunately, some of the survey items used in this analysis are new and have not yet been replicated in other countries. Third, our study looks at individual profiles at a point in time. Future research could explore how these individual profiles evolve over time and how that impacts ethical judgements on corruption. This would be an ambitious project, since repeating survey instruments over time is costly. Finally, and related to the two previous limitations, we realize that we could have approached attitudes towards corruption from a different angle, for instance, by measuring the level of moral development across individuals using one well-established methodologies (Colby & Kohlberg, 1987) and then explore how different stages/clusters of moral development give rise to different definitions and levels of tolerance towards corruption. Another perspective that we have not covered in this study is the degree of influence a variety of individual level traits might have on moral judgements, when the ethical dilemma at stake concerns the daily life of individuals (*egocentrict*) or when it is a broader, societal issue (*sociotropic*). These two alternative research designs would require including a new set of questions into the survey questionnaire to collect data for those specific purposes.

Notwithstanding these limitations that could be addressed in future research, we sustain that our study has made a positive contribution to the field, using new observational data, to understand how people construct their definitions and express their attitudes towards corruption.

Appendix

See Tables 8,9,10,11,12,13,14,15.

Table 8 Descriptive information on variables

Descriptive statistics

Independent variables

	N	Minimum	Maximum	Mean	Std. Deviation
Sex	1020	0	1	0,48	0,5
Age	1020	18	75	46,31	15,819
Academic studies (uneducated)	1020	0	1	0,0098	0,09858
Primary Education	1020	0	1	0,5441	0,49,829
Secondary Education	1020	0	1	0,2608	0,43,928
Graduate	1020	0	1	0,1578	0,36,477
Post-graduated	1020	0	1	0,0275	0,16,347
Coastal	970	0	1	0,833	0,37,318
Rural	1020	0	1	0,5539	0,49,733
Urban	1020	0	1	0,15	0,35,725
Suburban	1020	0	1	0,2961	0,45,675
Income	1020	0	10	3,75	1,55
Ideology	1020	0	9	3,44	1,477
Political interest	1020	1	5	3,94	1,318
Trust in Parliament	1020	0	10	4,62	2,219
Trust in Judiciary	1020	0	10	4,67	2,368
Precariousness index	1009	0	10	4,58	2,914
Envy index	1015	0	10	2,87	2,652
Success index	1006	0	10	4,81	2,662
Wealth redist. unfair	1015	0	1	0,8916	0,31,101
Wealth redist. neither fair nor unfair	1015	0	1	0,0916	0,28,864
Wealth redist_fair	1015	0	1	0,0167	0,12,839
ECOS_Hard + Very hard	1020	0	1	0,3392	0,47,368
ECOS_Just living	1020	0	1	0,5304	0,49,932
ECOS_Comfortable	1020	0	1	0,1304	0,3369
Life satisfaction	1018	0	10	6,69	1,847
SITECOPER1 worsened	1020	0	1	0,4529	0,49,802
SITECOPER2 equal	1020	0	1	0,5235	0,49,969
SITECOPER3 improved	1020	0	1	0,0235	0,15,165
SITECOG1 worsened	1019	0	1	0,8557	0,35,152
SITECOG2 equal	1019	0	1	0,1266	0,33,268
SITECOG3 improved	1019	0	1	0,0177	0,13,179
Increase Corruption Perception	1020	1	6	3,65	0,795
Real impact corruption	1020	1	5	3,21	0,56
Perceived corruption	1020	0	100	40,16	26,328
Pandemic more corruption Portugal	1020	0	10	6,75	2,308
Pandemic sensible ignoring principles	1020	0	10	4,54	2,71
Real impact bribery (non-impact)	993	0	1	0,9668	0,17,933
Medium impact	993	0	1	0,0262	0,15,976
High impact	993	0	1	0,007	0,08371
N valid (as listed)	916				

Table 9 Selected Items from the Survey

Variables	Item
Coastal	Area/region
Urban	Habitat
Income	Income
Ideology	Placement on left right scale
Political interest	Follows news on politics and society through the media
Trust in Parliament	Trust in parliament
Trust in Judiciary	Trust in justice
Precariousness index	Index 0 (not at all)-10 (completely) constructed based on the questions: You have had to manage on a smaller family budget Had to take money out of savings or go into debt to cover everyday expenses He had to cut back on holiday spending or new things for the house
Envy index	I feel frustrated when I think about what I have compared to what other people like me have
Success index	When I compare what I have with what others like me have, I realise I'm doing pretty well in life
Wealth redist	Income distribution in Portugal
ECOS	Household income
Life satisfaction	How satisfied with life as a whole
SITECOPER	Personal economic situation
GES	Country's general economic situation
Increase corruption perception (ICP)	Perception of the corruption increase in Portugal in the last year
Real impact corruption (RIC)	How corruption has affected your personal and professional life over the last year
Perceived corruption	Perceived corruption expressed as a percentage
Pandemic more corruption Portugal P18_1PICCv19	In the context of the Covid-19 pandemic, the opportunities for corruption in Portugal have greatly increased
Pandemic sensible ignoring principles P18_2PICCv19	In a context like the Covid-19 pandemic, it makes sense to ignore some ethical principles if this serves to solve important problems
Real impact bribery	Number of times in the last 3 years that you have been asked for bribes in exchange for services by civil servants

Table 10 Cross-tabulation deontologist-consequentialists

		Consequentialist (P16.5)											Total
		0	1	2	3	4	5	6	7	8	9	10	
Deontologist													
0	Count	23	1	3	2	2	4	4	1	2	3	4	49
	%	2.3%	0.1%	0.3%	0.2%	0.2%	0.4%	0.4%	0.1%	0.2%	0.3%	0.4%	5.0%
1	Count	0	9	6	5	3	4	3	2	4	1	0	37
	%	0.0%	0.9%	0.6%	0.5%	0.3%	0.4%	0.3%	0.2%	0.4%	0.1%	0.0%	3.8%
2	Count	0	7	23	14	7	6	2	1	0	1	2	63
	%	0.0%	0.7%	2.3%	1.4%	0.7%	0.6%	0.2%	0.1%	0.0%	0.1%	0.2%	6.4%
3	Count	1	1	6	14	10	9	2	5	0	3	1	52
	%	0.1%	0.1%	0.6%	1.4%	1.0%	0.9%	0.2%	0.5%	0.0%	0.3%	0.1%	5.3%
4	Count	2	1	5	5	10	11	1	5	5	2	2	49
	%	0.2%	0.1%	0.5%	0.5%	1.0%	1.1%	0.1%	0.5%	0.5%	0.2%	0.2%	5.0%
5	Count	4	9	5	7	13	29	2	6	2	2	4	83
	%	0.4%	0.9%	0.5%	0.7%	1.3%	2.9%	0.2%	0.6%	0.2%	0.2%	0.4%	8.4%
6	Count	0	3	8	6	9	21	16	9	0	0	0	72
	%	0.0%	0.3%	0.8%	0.6%	0.9%	2.1%	1.6%	0.9%	0.0%	0.0%	0.0%	7.3%
7	Count	4	4	6	14	13	29	19	28	18	3	0	138
	%	0.4%	0.4%	0.6%	1.4%	1.3%	2.9%	1.9%	2.8%	1.8%	0.3%	0.0%	14.0%
8	Count	2	17	17	19	9	20	9	23	27	9	0	152
	%	0.2%	1.7%	1.7%	1.9%	0.9%	2.0%	0.9%	2.3%	2.7%	0.9%	0.0%	15.4%
9	Count	2	7	7	6	6	18	9	6	7	15	5	88
	%	0.2%	0.7%	0.7%	0.6%	0.6%	1.8%	0.9%	0.6%	0.7%	1.5%	0.5%	8.9%
10	Count	34	13	16	12	15	37	13	8	12	4	37	201
	%	3.5%	1.3%	1.6%	1.2%	1.5%	3.8%	1.3%	0.8%	1.2%	0.4%	3.8%	20.4%
Total													
Count		72	72	102	104	97	188	80	94	77	43	55	984
%		7.3%	7.3%	10.4%	10.6%	9.9%	19.1%	8.1%	9.6%	7.8%	4.4%	5.6%	100.0%

Table 11 Definitions of corruption

		Frequencies	%	Valid %	Cumulative %
Valid	Pragmatic	56	5.5	7.5	7.5
	Virtuous	160	15.7	21.6	29.1
	Hypocrite	277	27.2	37.3	66.4
	Intransigent	249	24.4	33.6	100.0
	Total	742	72.7	100.0	
Missing	System	278	27.3		
Total		1020	100.0		

Table 12 Group centroid functions

Definitions of corruption	Function		
	1	2	3
Pragmatic	0.204	0.477	0.857
Virtuous	− 1.222	0.011	− 0.037
Hypocrite	0.415	0.411	− 0.173
Intransigent	0.352	− 0.575	0.023

Table 13 Comparisons of means and parametric and non-parametric tests

	PRAGMATIC M	PRAGMATIC SD	VIRTUOUS M	VIRTUOUS SD	HYPOCRITE M	HYPOCRITE SD	INTRANSIGENT M	INTRANSIGENT SD	MEAN CONTRAST TESTS Pearson or F values	df	p	Test method
SEX	0.58	0.499	0.46	0.500	0.45	0.499	0.46	0.500	2.4868	3	0.478	Chi
AGE	43.80	15.940	46.04	15.553	45.65	16.017	46.34	15.060				ANOVA
Educational level	2.71	0.947	2.68	0.833	2.65	0.852	2.75	0.884	15.3459	12	0.223	Chi
Graduated	0.06	0.240	0.03	0.159	0.02	0.155	0.04	0.188				Chi
Coastal habitat	0.90	0.303	0.50	0.502	0.94	0.240	0.99	0.116	207.3176	3	**0.000**	Chi
Rural vs. urban	0.96	0.933	0.43	0.649	0.63	0.704	0.622	0.753	46.1058	6	**0.000**	Chi
Income	3.37	1.117	4.16	1.562	3.65	1.394	4.12	1.663	9.15	3	**0.000**	ANOVA
Ideology	3.70	1.494	3.06	1.306	3.49	1.474	3.45	1.562	4.54	3	**0.0037**	ANOVA
Political interest	4.08	1.158	4.28	1.137	3.97	1.298	3.78	1.352	18.6983	12	0.096	Chi
Trust on parliament	4.76	1.879	4.51	2.106	4.72	2.273	4.84	2.229	0.5	3	0.6836	ANOVA
Trust on the judiciary	5.12	2.372	4.70	2.211	4.53	2.513	4.80	2.429	1.78	3	0.1505	ANOVA
Precariousness index	4.99	3.184	3.41	2.893	4.95	2.751	4.71	2.995	11.79	3	**0.0000**	ANOVA
Envy index	2.58	2.619	1.92	2.252	3.46	2.709	2.68	2.490	12.61	3	**0.0000**	ANOVA
Luck index	5.50	2.509	4.45	3.098	4.76	2.455	5.39	2.498	5.07	3	**0.0018**	ANOVA
Wealth redistribution	1.18	0.471	1.19	0.452	1.12	0.376	1.12	0.346	6.3576	6	0.384	Chi
ECO. Security	2.70	0.814	2.95	0.638	2.61	0.769	2.87	0.806	37.1407	12	**0.000**	Chi
Life satisfaction	6.50	2.140	6.97	1.707	6.62	1.713	6.95	1.966	2.56	3	0.0538	ANOVA
Personal economic situation	1.46	0.542	1.66	0.552	1.58	0.534	1.57	0.532	8.5046	6	0.203	Chi
General eco. Situation	1.22	0.545	1.12	0.360	1.23	0.476	1.15	0.398	11.2982	6	0.08	Chi
Perceived increase corruption	3.71	0.807	3.67	0.781	3.57	0.760	3.67	0.806	6.1444	12	0.909	Chi
Real impact corruption	3.26	0.694	3.19	0.467	3.29	0.544	3.13	0.543	30.2134	12	**0.003**	Chi
Perceived corruption	35.16	23.753	40.90	28.570	35.52	24.326	44.14	27.565	5.25	3	**0.0014**	ANOVA
Pandemic more corruption Portugal	6.77	2.146	6.82	2.660	6.95	1.987	6.38	2.437	3.19	3	**0.0233**	ANOVA
Pandemic sensible ignoring principles	5.26	3.174	3.98	2.788	5.48	2.537	3.43	2.439	32.03	3	**0.0000**	ANOVA
Corruption impact (bribery) Non impact	1.04	0.198	1.05	0.250	1.04	0.244	1.02	0.134	5.0472	6	0.538	Chi

*p < 0.05, **p < 0.01, ***p < 0.001

Table 14 Explanatory variables for belonging to the five different groups (appendix)

Introduced	Wilks' Lambda	F exact	Discriminant function 1		Discriminant function 2		Discriminant function 3		Discriminant function 4		
			Coef. Structure	Potentiality index	Coef. Structure	Potentiality index	Coef. Structure	Potentiality index	Coef. Structure	Potentiality index	Composed Pot. index
Coastal vs. inland	0.694	76.124	0.970*	0.741	0.231	0.010	0.053	0.000	−0.048	0.000	0.751
Pandemic sensible ignoring principles	0.617	47.140	0.135	0.014	−0.801*	0.124	−0.105	0.000	0.407	0.003	0.142
Urban	0.580	34.757	0.145	0.017	−0.74	0.106	0.948*	0.017	0.262	0.001	0.141
Income	0.561	27.328	−0.77	0.467	0.428	0.035	−0.123	0.000	0.871*	0.015	0.517
Perception of corruption	0.545	22.863	−0.038	0.001	0.339*	0.022	−0.002	0.000	−0.214	0.001	0.024

Relevance of canonical discriminant functions

Canonical correlation				Wilks' Lambda				Chi-square				% Success
Function				Contrasted functions				Contrasted functions				
1	2	3	4	1 to 4	2 to 4	3 to 4	4	1	2	3	4	
0.561	0.380	0.249	0.094	0.545	0.796	0.930	0.991	418.382	157.786	50.431	6.164	54.6*

*Overcomes the proportional causation criterion

Table 15 Composition of canonical discriminant functions to the five different groups (appendix)

Discriminant variables			
1st Discriminant function	2nd Discriminant function	3a Discriminant function	4a Discriminant function
Coastal vs. inland	In a pandemic context, it makes sense to ignore certain ethical principles if it serves to solve important problems Perception of corruption	Urban	Income
The function differentiates the Virtuous (group 2) from the Pragmatic, the Hypocrite, the Intransigent and freelances, being the centres of their clusters − 1.116; 0.278; 0.446; 0.374; 1.251	The second function differentiates group 4 (the Intransigent) from the Pragmatic, the Virtuous and the Hypocrite. Their centroids are: − 0.535; -0.378; − 0.58; 0.078; 0.533	The third function discriminates the pragmatic (group1) from the rest. Their centroids are: 0.869; 0.000 − 0.172; − 0.171; 0.014	The last function discriminates the neutrals group from the rest. Being the centroids: − 0.12; 0.08; 0.03; − 0.037; − 0,424

Declarations

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