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### **Title**

The Sweet Temptation of Corruption: Understanding Corrupt Actions by Experiments in the US and Germany

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Every country must confront corruption.<sup>1</sup> It is detrimental to economic, social and political development and violates the fundamental principles of democracy such as equality, fairness, transparency and accountability (Sandholtz and Koetzle, 2000; Warren, 2006). The large negative impact of corruption on all areas of individuals' lives suggests that it is vital for the well-being of citizens to understand why people act corruptly and why corrupt actions are sometimes punished and sometimes not. This paper asks "What correlates with an individual's propensity to engage in and punish corrupt actions from a comparative perspective?"

Corruption is typically defined as "the abuse of entrusted power for private gain" (Transparency International, 2014), and usually occurs where private wealth and public power overlap (Rose-Ackerman, 1999; Banuri and Eckel, 2012). A corrupt act typically requires three parties: a corrupter, a corruptee and a disadvantaged party. One party, often a public official, abuses a position of power, often by accepting or demanding a payoff. The second party, often a private party, a corporate body, a representative, or even another public official (e.g. judiciary executive, a police officer etc.) is either forced or to or seeks to make a payoff to the first party. The third party is external to the decisions made but adversely affected by them. For example, if a private party bribes a public official to receive a valuable government contract, then then the private party and the official both benefit from the transaction, but the third party, in this case the wider public, may suffer if the private party is

not the best candidate for the contract. The experiment will consider a setting with three such parties.<sup>2</sup>

Unfortunately, corruption is difficult to measure directly because it is secretive by nature and takes place in hidden and unofficial settings because all participants are highly interested in hiding their actions. It is common to study corruption indirectly with aggregated data on individual perceptions (e.g. the Corruption Perception Index of Transparency International and the Control of Corruption Index by the World Bank). Studies using these measures have been criticized on several grounds (Tetlock, 2005; Sampford et al., 2006; Olken, 2009; Wroe et al., 2013). The measures are usually evaluations of corruption levels in a country and can be influenced by a wide range of different factors such as government delays and incompetence. The data can include a highly subjective evaluation as they often measure the perception of corruption itself rather than the actual level of corrupt activity. Finally, these indices measure corruption using aggregated data at the macro level, although the action itself takes place at an individual level, and the perceptions data cannot reveal within-nation variations between individuals.

I consider experiments as a complementary method that identifies the factors that influence an individuals' propensity to engage and punish corrupt actions. Laboratory experiments were conducted in the U.S. at the University of California, Irvine and Germany at the Leuphana University Lüneburg in 2013/2014 by comparing individual decision making of over 700 participants. The U.S. and Germany are consistently ranked among the least corrupt countries in the world – the USA had the 19<sup>th</sup> place out of 177 countries with a score of 73 out of 100 in 2013 and Germany had even the 12<sup>th</sup> with a score of 78 out of 100 (0 means highly corrupt and 100 means free of corruption, see the Corruption Perceptions Index 2014). I hypothesize that in environments that are characterized by lower levels of corruption, there is both a lower propensity to engage in and a higher propensity to punish corrupt actions. I therefore focus on the correlations between an individual's propensity to engage in and punish corrupt acts, depending on the amount of bribe and punishment and certain socio-demographic characteristics such as gender, religion, field of study, income, work experience, time spent in other countries, experience with corruption and culture (measured as individualism) as well. Before the experiments started, we told the students that they will get candies for their participation.

The quasi-experimental design follows the work of Alatas et al. (2009) and Cameron et al. (2009) in which people confront a common bribery problem. The sequential-move game consists of three persons in which two players can act corruptly to increase their own payoff at the expense of a third player. The third player, the victim, is also allowed to punish the first two players at a cost to herself. I consider punishment as an endogenous choice that occurs if the victim decides to incur the cost associated with punishment. Thus, I was able to examine both the incentives to engage in corruption and the incentives to punish corrupt behavior. Understanding the motives of actors to punish others is important since societal control of corruption often relies on an individual bringing the act to the attention of enforcement officers (Cameron et al., 2009). Similar corruption experiments have been run in India, Indonesia, Singapore and Australia. Aside from the study of Banuri and Eckel (2011), who conducted their laboratory experiments in the US (Texas), and Pakistan, there are no studies that analyze the propensity to engage and punish corrupt actions of U.S. citizens. The study involves one-shot behavior and thus allows for more direct comparison with the findings of Alatas et al. (2009) and Cameron et al. (2009).

In contrast to my assumptions, almost 70% of the Californian offered and accepted a bribe even with knowledge that their actions may be sanctioned by a third person. In Germany almost 50% of the participants took the opportunity to offer and 40% accepted a bribe. I found that in both countries the probability to bribe decreases if the participants have

work experiences and increases with the time the participants spent in other countries. Additionally, in Germany men have a higher propensity to bribe than women, while in California males tend to give higher bribes compared to females. In the US, 52% of the citizens punished corrupt acts, in Germany even 80%. I also found a relationship between punishment and an individual's field of study.

Californian participants studying economics, engineering and psychology students punished less compared to other students, while students studying public health, computer science, or physical science punished most. There are also relationships between punishment and between the amount of bribery and gender and the wish to work in private or public sector. Men punished corrupt acts with higher amounts than women. However, 48% of the Californian and 50% of the German citizens who punished chose the lowest amount of 2 experimental dollars, although they had the opportunity to use a very effective punishment system for corrupt actions.

Interestingly, I also found that a significant minority self-reported having experience with corruption at the university in California ("cheating on exams") or in the surrounding area such as the workplace of their family. Furthermore, the survey reveals that a lot of the participants are well informed about corruption in the US and Germany and all over the world by the media. I explain the results mainly by cultural differences (individualism). A contribution of this paper is that it provides additional data in a U.S. and German setting, which can allow for cross-country comparison of individuals' corrupt actions in future research. Furthermore, I show that established democracy does not necessarily guarantee honest governments and corruption-free societies (Treisman, 2000; Kubbe, 2014). Corruption appears regardless of the regime type and scandals turn up frequently in young as well as well-established liberal democracies. In this study, I aim to find out the factors that cause corruption in matured democracies such as the U.S. and Germany.

## **Theoretical Background**

Previous corruption research has either focused on the effects of corruption (Mauro, 1997; Rose-Ackerman, 1999; Richey, 2010) or concentrated on the causes that particularly hinder or foster its occurrence (Seldadyo and Haan, 2006). Besides, a vast majority of publications advance long lists of anti-corruption strategies, reforms and policy prescriptions on how to deal with the problem (Johnston, 2013; Mungi-Pippidi, 2013). To explain the causes of corruption, studies offer a variety of theoretical-conceptual approaches from different disciplines and a broad spectrum of variables based on various methodological avenues.

From a theoretical-conceptual perspective, corruption researchers have mainly focused on economic approaches such as principal-agent theory that consider human beings as self-interested actors. Thus, individuals attempt to maximize their benefits and minimize their costs by making rational judgments (*homo oeconomicus*) (Olson, 1971; Klitgaard, 1988; Lambsdorff, 2002). Corruption is, therefore, regarded as individual misbehavior, motivated by material interests, that arises where and when the costs of behaving corruptly do not exceed the gains that are expected from it. However, economic approaches, in particular, tend to overlook social norms and reciprocal relationships between actors that play an important role in corrupt transactions (Elster, 1989; Green and Shapiro, 1994).

In contrast, sociological approaches, namely cultural approaches such as sociological or historical institutionalism, strengthen the focus on an individual's social behavior and highlight social norms and values. That way, corruption is often conceived as a way of life, as a kind of tradition and as a set of values that belong to a society's culture and its institutions. Hence, sociological approaches allow researchers to identify and explain differences in

behavior and actions among groups and societies and enable them to get beyond explanations of social processes that are the mere aggregate of individuals' actions (Keating, 2008). This implies that corrupt actions are not only caused by rational interests and lacks of competition and transparency in economic and political areas but also by certain contexts such as culture, traditions and informal conventions that, in turn, influence institutions and organizations people operate in (March and Olsen, 2006). Besides, sociological approaches do not deny that individuals attempt to calculate their interests, but argue that outcomes are the product of a society's culture implying the interaction among various groups, interests, ideas, and institutional structures (*homo sociologicus*) (Dahrendorf and Abels, 2010; Thelen, 1999). Thereby, cultural approaches complement economic approaches and have a great potential to elicit the factors that influence an individual's corrupt behavior as well.

Previous research indicates that corruption and culture are strongly interrelated (Husted, 1999; Sandholtz and Taagepera, 2005; Barr and Serra, 2010; Cameron et al., 2009; Banuri and Eckel, 2012). In these studies, culture often refers to concrete factors such as trust, religiosity, or institutional arrangements, or to less tangible elements such as values, norms, or morals. Usually culture is described as property of whole societies that consists of attitudes and behaviors and essentially observed as a collective concept, applicable to social groups, composed of shared meanings and interpretations (Geertz, 1973; Hofstede, 1997).<sup>3</sup>

Generally, culture interacts with corruption through two channels, formal institutions and informal institutions such as values and social norms, and that both can differ across and within countries (Elster, 1989; Banuri and Eckel, 2012). Formal institutions are usually observed as formal rules that govern individual behavior and that are also influenced by values and attitudes (Harrison and Huntington, 2000).<sup>4</sup> Informal institutions are usually defined as informal rules, driven by values and beliefs that are constitutive elements of personal identities and govern interaction, and are both shared and sustained by group members (Posner, 2002). They can include forms of trust such as interpersonal trust, reputation and reciprocity. As a result, people's actions are partly intentional and values constitute a central element in people's intentions. They are a powerful motivator of action and can be a moral resource from societies can profit (Welzel, 2013). People exhibit and signal their norms and values through communication and other forms of social interaction. In this context, corruption norms are a specific form of social norms and dictate the extent to which individuals engage in, and expect others to engage in corruption (Sandholtz and Taagepera, 2005; Banuri and Eckel, 2012). However, while formal institutions are directly observable, informal institutions are more difficult to capture empirically and to isolate from other influences. Nevertheless, they play a central role in explaining corruption and require particular considerations. In this paper we focus on culture as informal institutions.

To measure culture, I also refer to the individualism-collectivism dimension as one of Hofstede's (1997) six cultural dimensions. It is defined as the extent to "which decisions about a person's life are determined by the individual or by the ingroup - a person's circle of family, friends, or peers" (Husted 1999, p. 344).<sup>5</sup> According to Hofstede (2014), the high side of this dimension, called individualism, can be defined as a preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families. Therefore, individualism refers to the degree of interdependence a society maintains among its members. It has to do with whether people's self-image is defined in terms of "I" or "We". In individualist societies people are rather supposed to look after themselves and their direct family. In contrast to this, collectivism, represents a preference for a tightly-knit framework in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty.

## Experiments on Corruption and Punishment

Experimental research in political science has blossomed in the last 20 years. As in economics, political scientists have started to use experimentation to test formal models in controlled empirical settings such as in the research fields of voting and elections (Green and Gerber, 2003; Kam, 2005), media studies and political communication (Huddy and Terkildsen, 1993; Ansolabehere et al., 1994), committee and jury decision making (Ostrom, 1998; Guarnaschelli et al., 2000), coordination and cooperation (Palfrey and Rosenthal, 1994; Geva et al., 2000) and election fraud (Hyde, 2007, 2010). Experimental research on corruption has grown in the last years, but is still in its infancy (Banuri and Eckel, 2012). Prior experimental studies have focused on individual determinants of corruption and consider the influence of an individual's gender (Rivas, 2012; Frank et al., 2011), religion (Armantier and Boly, 2010), culture, amount of wages (Azfar and Nelson, 2007; Van Veldhuizen, 2013), the amount of bribe, level of monitoring and punishment (Schulze and Frank, 2003; Banuri and Eckel, 2011; Frank and Schulze, 2000).

Abbink et al. (2006) published one of the most important studies analyzing individual-decision making in an experimental corruption game. Their experiment examines the influence of punishment and negative external effects on the incidence of corruption and has been replicated in subsequent work. They model corruption as a variant of the two-person trust and reciprocation game, where the participants play the role of a firm or a public official. The firm has the opportunity to propose a bribe to the public official and has to pay a relatively low transfer fee. If the public official rejects the bribe, both players get their initial endowment, less the transfer fee. If the public official accepts, both payoffs increase significantly. In the second stage of the game, the public official decides between two options: one option significantly increases the pay-off of the firm but has a lower pay-off for the public official. The other option is better for the public official but has a negative effect on the pay-off of other players. They find that the introduction of a negative external effect in the form of a reduced payoff of other players does not seem to significantly influence the amount and frequency of bribing, and that the average bribing amount and frequency of corruption both decrease after the introduction of a punishment mechanism.

Alatas et al. (2009) used the set-up design of Abbink et al. (2006) for experiments run in Australia, India, Indonesia and Singapore. They investigate gender differences in behavior when three persons are confronted with a common bribery problem. The authors demonstrate that Australian women are less likely to offer bribes and more likely to punish corrupt behavior than men in Australia. In India, Indonesia and Singapore, there are no significant gender differences. They conclude that the gender differences are rather more culture-specific than universal as reported in previous studies. In response, Cameron et al. (2009) find that there is a greater variation in the propensities to punish corrupt behavior than in the propensities to engage in corrupt behavior across cultures. Consistent with the existing corruption indices, the subjects in India exhibit a higher tolerance of corruption than the subjects in Australia. However, the subjects in Singapore have higher levels than the subjects in Indonesia. They also vary their experimental design to examine the impact of a more effective punishment system and the effect of the perceived cost of bribery.

Banuri and Eckel (2011) conduct laboratory experiments in the US and Pakistan, with different levels of corruption, to assess the use and effects of sanctions. They use a repeated three-person game design that varies the sanctioning institution (with and without a citizen option to punish) to study the long-term impacts of a short-term policy shock on bribing behavior. They find that punishment is effective in constraining favor provision, but has no independent effect on bribes. Rather, bribes are reduced as a response to lowered favor

provision in the US, but no reduction in bribes is observed in Pakistan. They conclude that bribery is unresponsive to the Punishment regime, while favors respond similarly to the US. Thus, in the US, the sanction mechanism is viewed as a reinforcement of low corruption norms, and US firms would reduce their level of bribe initiation. In Pakistan, however, since corruption norms are stronger, this would have a reduced impact.

The experiment design incorporates features of Abbink et al. (2006) and Alatas et al. (2009). A contribution of the paper is that it provides additional data in a U.S. setting, which can allow for cross-country comparison of individuals' corrupt actions in future research. Furthermore, I show that in established democracies corruption is a problem as well. Democracy does not necessarily guarantee honest governments and corruption-free societies (Treisman, 2000; Kubbe, 2014). Corruption appears regardless of the regime type and scandals turn up frequently in young as well as well-established liberal democracies. In the study, I aim to find out the factors that cause corruption in matured democracies such as the U.S.

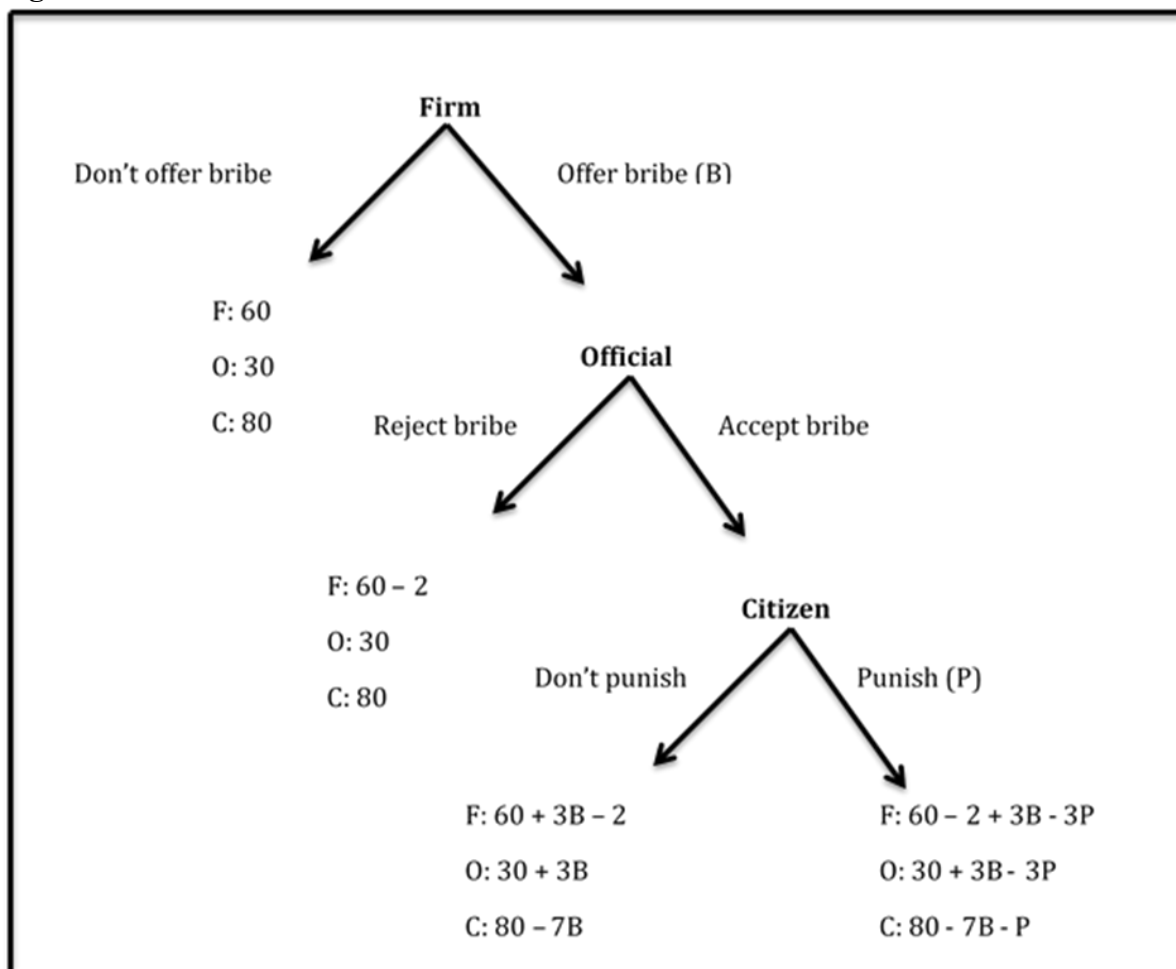
## Methodology

### Design

Similar to the experiments of Alatas et al. (2009) and Cameron et al. (2009), I have conducted laboratory experiments designed as a sequential-move game. In the experiments, three persons are confronted with a common bribery problem. The included persons are a manager of a firm, a government official, and a citizen who start respectively with a fictitious endowment of 30, 60, and 80 experimental dollars. Figure 1 contains an extensive-form representation of the game, where all of the payoffs are denoted in experimental dollars. The interaction proceeds in three steps.

1. The firm decides whether to offer a bribe to the government official to avoid complying with an environmental regulation, and if so, how much to offer as the bribe. The bribe can be either 4 or 8, but making a bribe incurs a transaction cost of 2 regardless of whether the bribe is accepted.
2. If the bribe is offered, the official can either accept or reject it. Acceptance of the bribe implies favorable treatment of the firm and increases the payoffs of both the firm and the official by  $3B$ , but decreases the payoff of the citizen by  $7B$ . Bribery has a significant impact on society. This is captured by the large decrease in the citizen's payoff. The official's payoff also increases by  $3B$  even though the amount of bribe paid by the firm is  $B$  due to a difference in the marginal utility of income. Since the income earned in the public service is likely to be lower than that earned in private firms, the same amount of money can be assumed to have a lower marginal utility value to the firm than to the official.<sup>6</sup>
3. The third player, called the citizen, moves last after observing the choices made by the firm and the official. The citizen can punish them for the act of bribery by choosing a penalty amount  $P \in [2, 12]$ . Punishment is costly to the citizen. It reduces the citizen's payoff by the amount of the punishment  $P$ , but it also imposes a monetary sanction on the firm and official by reducing their payoffs by  $3P$ . Hence, the net benefit to the firm and the official from the corrupt transaction is  $3B - 2 - 3P$  and  $3B - 3P$  respectively.

**Figure 1: The Game Tree**



Source: Cameron et al. (2006, p. 33)

To avoid any repeated game effects, the experiment is conducted as a one-shot game. In this experiment, the punishment has no economic benefit to the citizen and so the decision to punish is not affected by the anticipation of possible future economic gains. Hence, with a one-shot game, a comparison of the citizens’ willingness to punish corrupt acts across different cultures reveals the differences in the tolerance levels for corruption. The citizens who choose to punish in a one-shot game would have even more incentives to punish in a multi-period game since by doing so, they can deter corruption and decrease the harm they suffer. The one-shot nature of the game also helps to avoid the issues associated with repeated games, such as signaling, reputation formation and serial correlation in decisions. Each subject in the database participated in the experiment only once and played only one role. The subjects playing the three roles were grouped anonymously in the experiment to avoid conscious or unconscious signaling.

As Alatas et al. (2009) and Cameron et al. (2009), I decided to use emotive terms such as “bribe” and “punishment” in the instructions presenting a deviation from the standard practice of using neutral language in economics experiments. However, since the aim was to simulate a real-life corrupt transaction, loaded language is used. As indicated in Harrison and List (2004, p. 1022), “it is not the case that abstract, context-free experiments provide more general findings if the context itself is relevant to the performance of subjects.”<sup>7</sup>



## **Sample and Procedure**

The experiments were conducted at the University of California, Irvine and at Leuphana University in Lüneburg in 2013 / 2014. From the questionnaire at the end of the experiment (see appendix), I obtain socio-demographic information about the subjects. Subjects were largely bachelor and master students from different fields of study. Subjects were largely bachelor's and master's students from different fields of study participated.

### **US-Sample**

In California, 366 subjects took part once in the experiment. The sample consisted of 63% females ( $n = 229$ ) and 37% males ( $n = 137$ ), the average age was 20.3 years (std. dev. = 1.87). The participants were mainly students from economics (18%), biology (13%), engineering (12%), public health (8%), psychology (7%) and pharmacy (6%). 33% are non-religious, 25% Catholic, 11% Protestants, 9% Buddhist, 7% Atheists and 15% other. The average monthly income is \$642 (std. dev. = 1958.74). 61% of the participants ( $n = 224$ ) have had a job on an average of 17 months (std. dev. = 20.42). The average participant spent 24 months (std. dev. = 55.56; median = 2 months; mode = 1 month) living in other countries. 17% are experienced in corruption, this means that they have been in contact with corruption personally in their workplace or at university. In contrast to this, 65% of the students are well informed about corruption including that they have heard about corruption via friends / family or mass media such as TV, newspaper or radio. 28% have never been in contact with corruption that means they have never been involved or heard about corruption. 24% of the participants attempt to work in the private sector, 22% in public sector, however, 55% do not know at the time of the experiment (see appendix).

### **German-Sample**

In Germany, 348 subjects took part once in the experiment. The sample consisted of 51% females ( $n = 175$ ) and 49% males ( $n = 171$ ), the average age was 22.7 years (std. dev. = 3.31). The participants were mainly students from economics (22%), political science (19%), environmental science (11%), cultural studies (11%), education, BA (15%), business psychology (9%) or sustainability studies (5%). 42% were Protestants, 27% non-religious, 16% Catholic, 11% Atheists, 3% Islam and 1% other. The average monthly income is €681 (std. dev. = 315.35). 80% of the participants ( $n = 276$ ) have had a job on an average of 35 months (std. dev. = 34.33). The average participant spent 16 months (std. dev. = 29.04; median = 12 and mode = 0) living in other countries. 14% are experienced in corruption, this means that they have been in contact with corruption personally in their workplace or at university. Similar to the US, 63% of the students are well informed about corruption including that they have heard about corruption via friends / family or mass media such as TV, newspaper or radio. 23% have never been in contact with corruption that means they have never been involved or heard about corruption. 22% of the participants attempt to work in the private sector, 36% in public sector, however, 42% do not know at the time of the experiment (see appendix).

Each session, which lasted approximately 30 minutes, consisted of at least 15 subjects who, on entering the room, were randomly assigned to the roles of firms, officials or citizens. Each group was located far apart from the others in a recognizable cluster. Thus, each group

could see the members of the other groups, but individual subjects were unaware of which three specific subjects constituted a particular firm-official-citizen trio. At the beginning of each session, each subject received a copy of the instruction of the game and was told that payoffs are converted into candies. Then, the subjects playing the role of a firm were asked to decide whether or not to offer a bribe. If they chose to offer a bribe, they also had to choose an amount (4 or 8 experimental dollars). The envelopes with the bribe amounts were then collected and distributed by the experimenter to the corresponding officials. After the officials made their decisions, the corresponding citizens were informed by the envelope about whether a bribe was offered and whether it was accepted. The game ended after the citizens decided whether to punish by choosing a punishment amount (2 or 12 experimental dollars).

All the subjects filled out the questionnaire (see appendix). At the end of session, every participant received some sweets as compensation (in addition to a fixed \$7 show-up payment in the US sample). They were told that they can take as much as they want, regardless of their performance.

### **Hypotheses and Measurement**

My reading of past literature suggests four hypotheses to test. The first two are:

*Hypothesis 1a):* According to the low level of corruption in the US and Germany, I assume that the first two participants of the game acting as firm and official will not engage in corrupt actions.

*Hypothesis 1b)* According to Hofstede's cultural dimension of individualism-collectivism and the higher level of corruption compared to Germany, I expect that US citizens have higher propensity to engage in corrupt actions.

*Hypothesis 2a):* The third person of the game acting as citizen will punish the firm and official when they behaved corruptly even though such punishment is costly.

*Hypothesis 2b):* According to the individualism dimension, I also expect that the US citizens, compared to the Germans, have a lower propensity to punish corrupt actions.

From a cultural perspective, I also suspect that in environments that are characterized by lower levels of corruption, such as the environment from which the American and German participants are drawn, individuals are less likely to act corruptly. I expect that individuals' propensity to engage in corrupt actions are shaped by their everyday general experiences of corruption determined by the social, political, legal and economic systems of the countries they live in. As a result, lower levels of exposure to corruption in daily life may reduce a tolerance of corruption. For low corrupt ranked countries such as the USA and Germany, this implies that the firms do not have a high propensity to offer a bribe and in the case they bribe, the officials will not have a high propensity to accept. Moreover, I expect that if the firms bribe, they will choose the lowest amount of bribe.

Moreover, according to Hofstede's cultural dimension of individualism-collectivism and the higher level of corruption compared to Germany, I expect that US citizens have higher propensity to engage in corrupt actions. By a score of 91 out of 120 (0 means very

collective and 120 very individualistic), the U.S. is characterized as one of the most individualistic societies in the world in which the community plays a minor part, compared to other countries such as Germany or New Zealand, countries that show low corruption scores as well (Hofstede, 2014). In individualist societies people are rather supposed to look after themselves and their direct family. Individualism holds that a person attempts to further his or her own interests, or at least demands the right to serve his or her own interests, without taking the interests of society into consideration. According to the higher level of individualism, I believe that the US participants act more selfishly in the experiment than the Germany. I assume that the US firms and officials pursue their own goals and attempt to increase their payoff. The German society is individualistic as well, but lower ranked by a score of 67 than the US (Hofstede, 2014). To check this assumption, I measure individualism (culture) in the study by a dummy variable (1/0). Yet, according to the individualism dimension, I also expect that the US citizens, compared to the Germans, have a lower propensity to punish corrupt actions because they are more individualistic and are less interested in the whole society.

Though I cannot directly study the motivations for engaging in corruption and punish it in the current experiment design, I do ask the participants at the end of the experiment to select which possible explanation best matches the reasons behind their choices. The firms can select between the following answers if they have bribed: “payoff maximation”, “for the social / economic good of the country (e.g. reduce unemployment etc.)”, “to see the response of the official / citizen” or “other reasons”. If they have not bribed they can choose between “morality”, “to reduce corruption (social cost)”, “profit-maximisation (in the long run it is bad for the firm)”, it is “not necessary for firms to bribe”, “equity” or “other reasons”.

If the officials accepted the bribe, then they can decide between the options “necessary for firms to bribe / will be able to help the firm”, “necessary because salaries are low”, “payoff maximation”, “equity”, “game will continue” or “other reasons”. If they refused the bribe, then they can select between the reasons “morality”, “to reduce corruption (social cost)”, “scared of implications / risk”, “payoff maximisation”, “fairness”, “bribe to small” or “other reasons”. Responses to these questions may lend additional insights. I also measured various socio-demographic characteristics of the participants, and I conjecture that certain traits may help predict behavior.

### Hypothesis 3:

- (a) The propensity to engage in corrupt actions does not differ across genders, but the propensity to punish does, with women punishing at higher rates than men.
- (b) The first two participants of the game acting as firm and official will engage in corrupt actions if their religious affiliation is Catholicism, Orthodoxy or Islam.
- (c) Economics students will be more likely to engage in corruption than other students.
- (d) Subjects with lower income will engage in and punish corrupt actions.
- (e) Willingness to punish is unrelated to income.
- (f) If the individual has experienced more corruption while working, then she or he will be more likely to engage in corrupt action and not punish.
- (g) If the individual has spent more time outside the U.S./Germany, then she or he will be more likely to engage in corrupt action and not punish.

Abbink et al. (2002)<sup>8</sup> did not find a significant relationship between gender and the likelihoods of offering or accepting bribes, and given that the design is similar I expect a similar findings. However, there are other studies who find different effects, e.g., Rivas (2012) who finds that women are less corrupt than men. One interpretation, following

Gottfredson and Hirschi (1990) is that women are more risk-averse and self-controlled and therefore remain from engaging in corrupt behavior. Another explanation he offers is that women are more sensitive to others' losses and that is why they choose the corrupt alternative with negative externalities over all the other participants less frequently. Evidence does suggest that women dispense punishment at higher rates (Armantier and Boly, 2010). My (a) prediction follows.

For (b), I also check if there is a relationship between an individual's religious affiliation and the propensity to offer or accept the bribe (Armantier and Boly, 2010; Treisman, 2000). For instance, Dreher et al. (2007, p. 448) theorizes that "religion may shape social attitudes towards social hierarchy and family values and thus determine the acceptability, or otherwise, of corrupt practices. In more hierarchical systems (for example, Catholicism, Orthodoxy and Islam), challenges to the status quo are less frequent than in more egalitarian or individualistic religions." Religion is measured by seven dimensions (Catholic, Protestant, Islam, Hindu, Atheist, none, other).

My prediction for (c) is inspired by Frank and Schulze (2000) and Schulze and Frank (2003) who found that economics students are significantly more corrupt than others, not because of their exposure to economic theory but rather because more selfish students self-select into the economics major.

For (d), having low incomes creates a strong incentive to take some extra money in form of bribery (Abbink et al., 2006). Van Veldhuizen (2013) found that increasing the wage of public officials significantly reduces their corruptibility. Experienced low wage public officials accept 91% of bribes on average. In contrast to this, high wage public officials accept 38% and are less likely to choose the corrupt option.

For (e), I suppose that punishing, when it occurs, is done for non-monetary motives that should be unrelated to the subject's income (Bowles and Gintis, 2002; Carpenter and Seki, 2005).

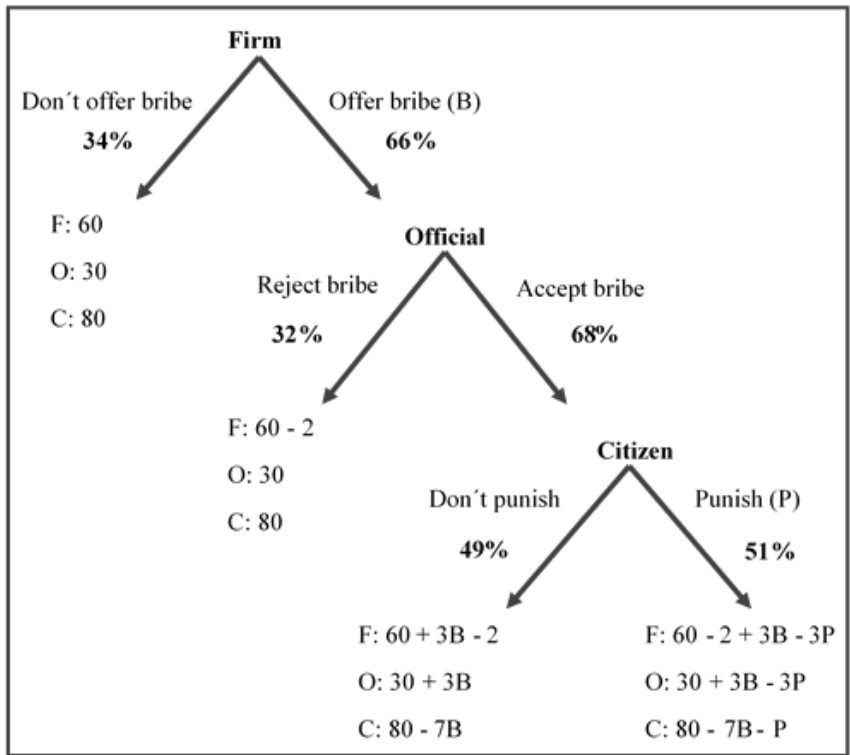
I suspect that an individual's work experience (two dimensions: 0=no; 1=yes) has an influence on her propensity to engage in and punish corrupt actions because she may be more experienced with corruption in the workplace. Similarly, time outside the U.S. may have led to more exposure to corruption. My (f) and (g) predictions follow.

I also ask, if they have heard about or have come in contact with corruption and look for correlations. For this question, I have five dimensions (personally in your workplace, personally at university, via friends / family, via mass media, no contact). I ask them to provide us relevant examples. Additionally, I ask them if they want to work in the private or public sector after graduating to see trends in which positions the participants may work in the future.

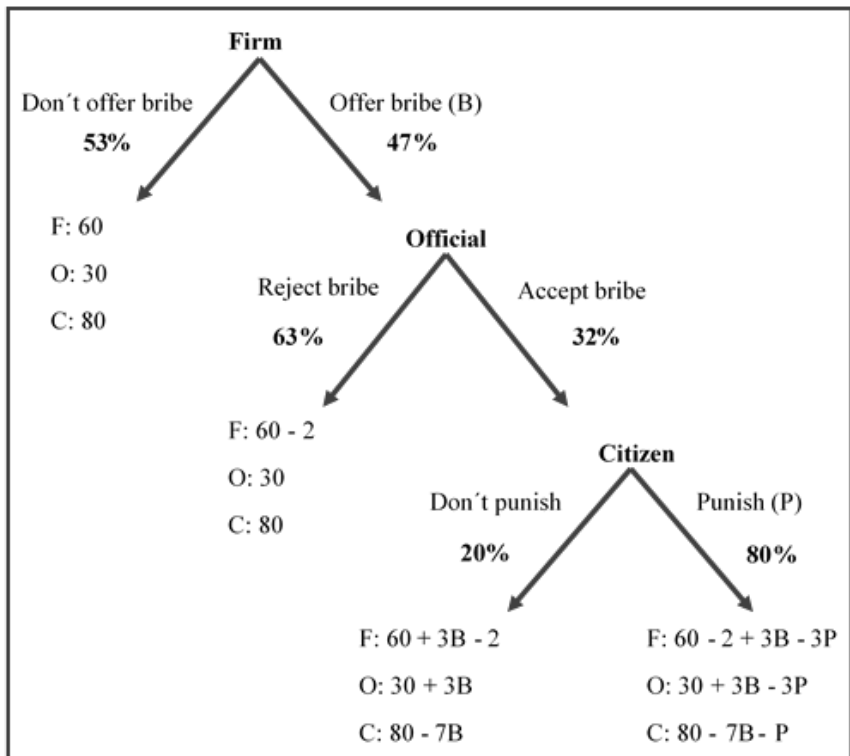
## Results

Figure 1a illustrates that out of 122 Californian firms, 80 participants bribed (66%). Out of these offered bribes, 54 (68%) officials accepted the offer. In Germany (Figure 1b), out of 116 participating firms, 54 people bribed (47%) and 20 officials (37%) accepted these bribes. This result does not confirm the first hypothesis suggesting that the first two participants of the game acting as firm and official have a low individual propensity to engage in corrupt actions. More than half of the firms and officials offered or accept a bribe in California<sup>9</sup> and almost one half in Germany accept the bribe. However, this finding does confirm the assumption that the US participants have a higher individual propensity to engage in corrupt actions compared to Germans.

**Figure 1a: The Game Tree with results**  
**US-Sample**



**Figure 1b: The Game Tree with results**  
**German-Sample**



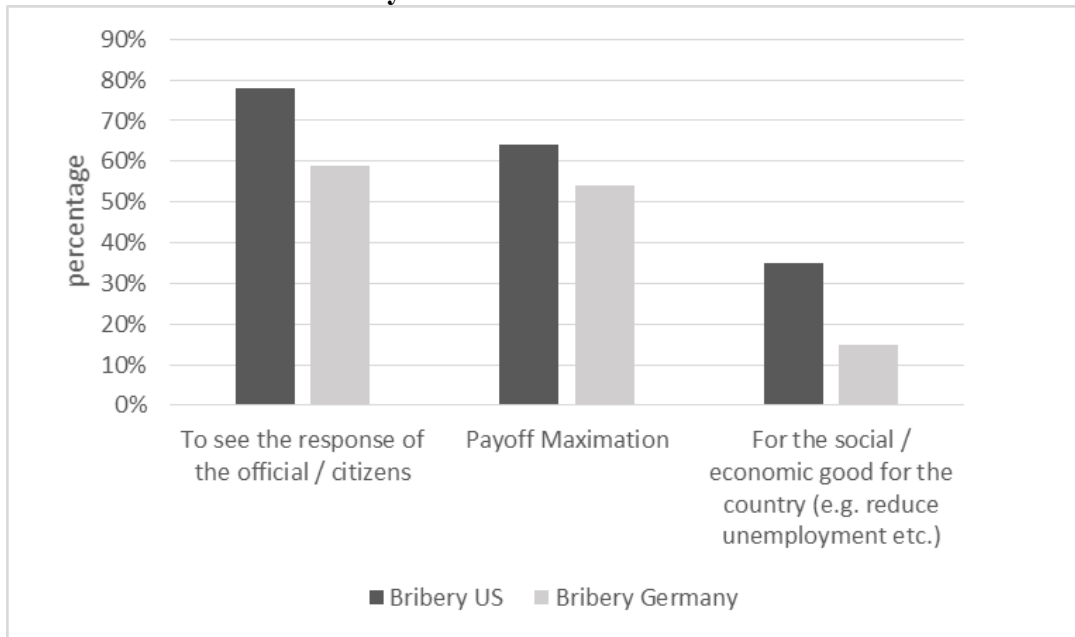
To control for an individual's socio-demographic characteristics and an individual's propensity to engage in and punish corrupt actions, I conduct logistic regression analyses. In both countries, I find a negative significant relationship with an individual's work experience. This implies that the probability to bribe decreases if the participant has work experience. In Germany, this relationship is even stronger. Additionally, there is a weak positive relationship between the propensity to offer a bribe and time spent in other countries. This result illustrates that the probability of offering a bribe increases if the participant has spent time in other countries. In the German sample, I also find that men have a higher propensity to bribe than women. Almost 60% of the German men bribed (24 out of 41). In contrast to this, only 41% of the women (30 out of 73) offered a bribe. Additionally, I found a significant relationship between bribery by the firms and acceptance of bribes and individualism. This implies that there are cultural differences in corrupt actions between both countries (see appendix).

With regard to the amount of bribe, 53% of the Californian and 55% of the German bribers chose the highest amount of bribe. This finding does not confirm the expectation that the firms will choose the lowest amount of bribe. A regression analysis also reveals that in California males tend to give higher bribes compared to women. While 22 out of 31 men (71%) offered 8 experimental dollars, only 42% of the female offered the highest amount. This finding confirms previous studies such as of Rivas (2012) and Esarey and Schwindt-Bayer (2014) indicating that women seem to be less risk-averse than men. All other control variables are not significant in the models (appendix).

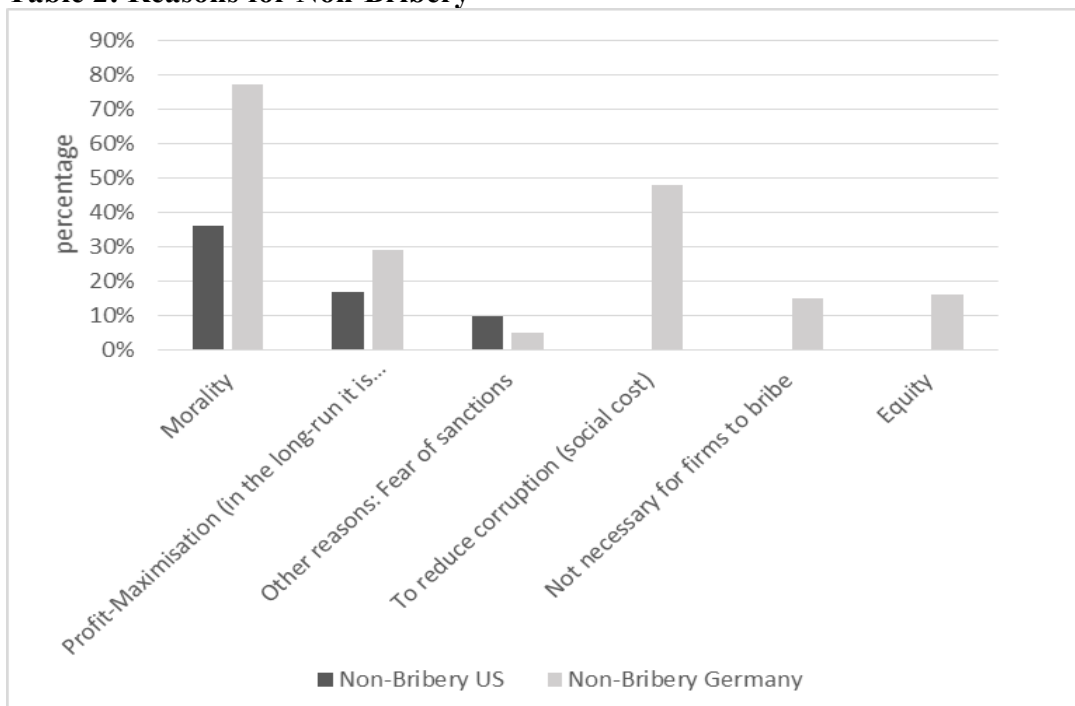
Asking for the reasons of the firm's behavior, Table 1 indicates that most participants in California, almost 80%, claimed that they bribed because they were interested in seeing the response of the official and citizens (62 people stated this). In Germany, 60% claimed this (32 people). I interpret these answers as justifications or rationalizations because people asserted that they were not corrupt but merely wanted to see whether the other person is. That might be a typical example of self-serving behavior with a post-hoc rationalization (Bersoff, 1999; Mazar et al., 2008). At least, 51 bribes were justified with profit-maximization (64%), while 28 firms did it for the social / economic good for the country to reduce unemployment, for instance (35%) in the US. In Germany, 29 times people justified bribes by payoff maximization and 8 times they did it for the social / economic good for the country.

Looking at Table 2 and the reasons for non-bribery, the majority of the US and Germans non-bribers explained their decision by ethical reasons (morality, 15 times in the US and 48 times in Germany). In the US, seven times participants refused to bribe because of profit-maximisation and because they assumed that in the long-run bribery is bad for the firm, 10% mentioned that they were afraid of sanctions. In Germany, even 48% stated they did not bribe to reduce corruption and 16% because of equity. 29% refused to bribe because of profit-maximisation and 15% because they believe that it is not necessary to bribe. Even four people stated that they did not bribe because they don't want that the firm can overcome the environmental regulation.

**Table 1: Reasons for Bribery<sup>10</sup>**



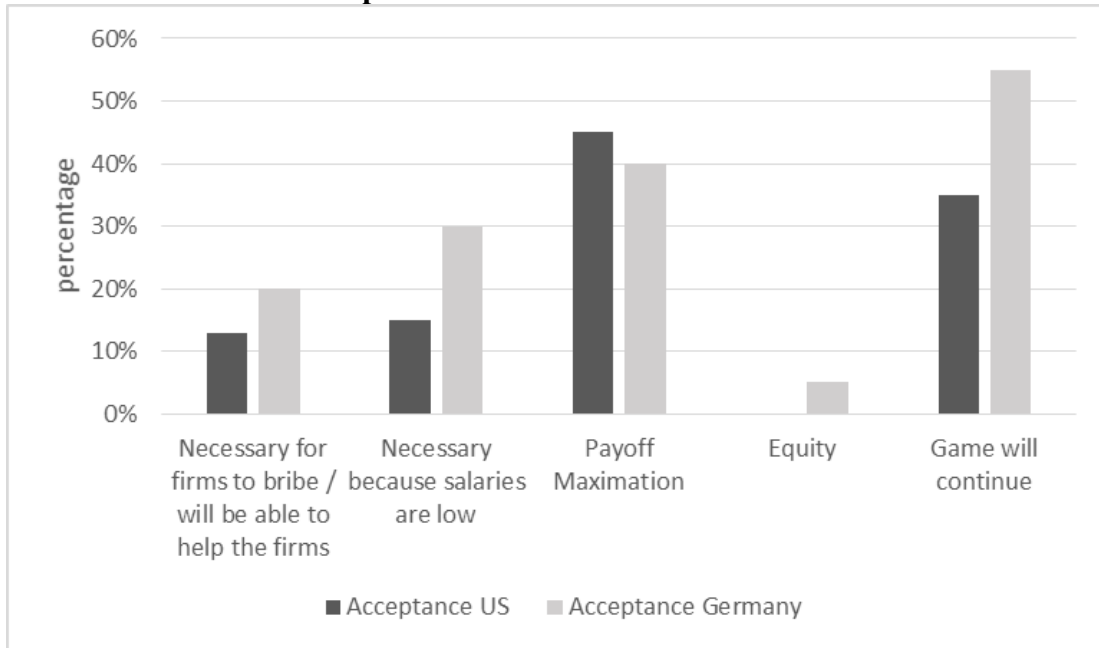
**Table 2: Reasons for Non-Bribery**



When I asked the US officials for the reasons for the acceptance of the bribe, the majority, 24 people, stated that they did it because of payoff maximation. However, 19 times people were interested only in continuing the game, while 8 times it was mentioned that the salaries were too low. 7 times they accepted the bribe because they believed that it is necessary for the firm to survive (Table 3).

In Germany, the majority, 11 people (55%), stated that they did it because they were interested in continuing the experiment, 40% (8 times) because of payoff maximation. Five times (30%) people accepted the bribe because the salaries are too low, while 4 times (20%) it was mentioned that it is necessary for the firm to survive.

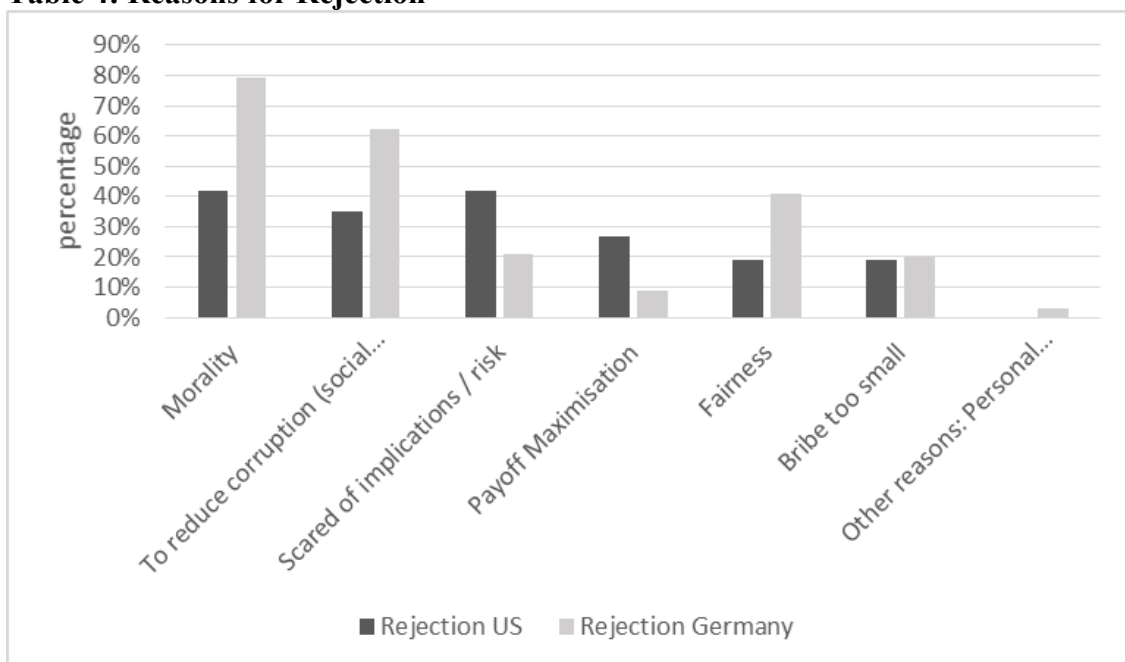
**Table 3: Reasons for Acceptance**



Asked about the rejection of the bribery, 42% of the US participants either stated it was because of moral reasons or they were scared of potential consequences and risks (respectively 11 times). However, 9 times the officers rejected the bribe to reduce corruption and 5 times because of fairness. Nevertheless, 19% stated that the bribe was too small (Table 4).

In Germany, 79% of participants (27) either stated it was because of moral reasons, 62% (21 times) to reduce corruption, 41% (14) because of fairness and 21% (7) were scared of potential consequences and risks. For 20% (7 times) the bribe was too small and 9% (3 times) because of payoff maximisation. In both countries, a logistic regression analysis indicates that there are no significant relationships between the acceptance of bribes and the control variables (appendix).

**Table 4: Reasons for Rejection**





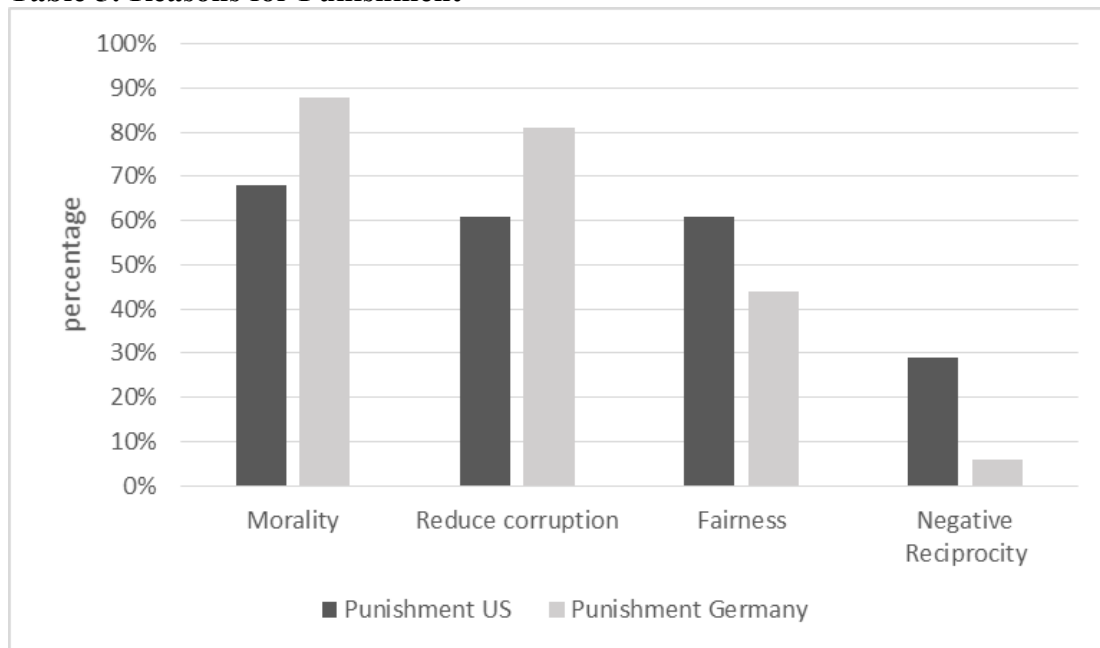
In the US, out of the 55 corrupt acts, 28 were punished by the citizens (52%). With regard to the second hypothesis, this result does confirm the assumption that the citizens are willing to punish the firms and officials when they behaved corruptly – even, if such punishment is costly to the citizen. However, in Germany, even 80% (16 corrupt acts) of the participants punished corrupt actions. Four people did not punish.

In the Californian sample, I found a relationship between punishment and an individual’s field of study. Participants studying economics (7 out of 11 did not punish), engineering (5 out of 7) and psychology students (4 out of 4 did not punish) punished less compared to other students. In contrast to this, 4 out of 5 public health students, 4 out of 6 pharmacy students, 3 out of 4 computer science and 3 out of 3 physical science students did not punish. Moreover, there is a significant relationship between the punishment of corrupt actions and individualism (see appendix).

However, 48% (n = 14) of the Californian citizens and 50% (n = 7) of the Germans who punished chose the lowest amount of 2 experimental dollars, although they had the opportunity to use a very effective punishment system for corrupt actions.<sup>11</sup>

Asking for the reasons for punishment, almost 70% of the Californian participants stated that they did it because of moral (19 times) and fairness reasons (17 times), and to reduce corruption (17 times). 29% of the participants acting as punishing citizens claimed they punished because of negative reciprocity. In Germany, almost 90% (14 times) stated that they punished because of morality, 81% (13 times) to reduce corruption and 44% (7 times) because of fairness (Table 5).

**Table 5: Reasons for Punishment**

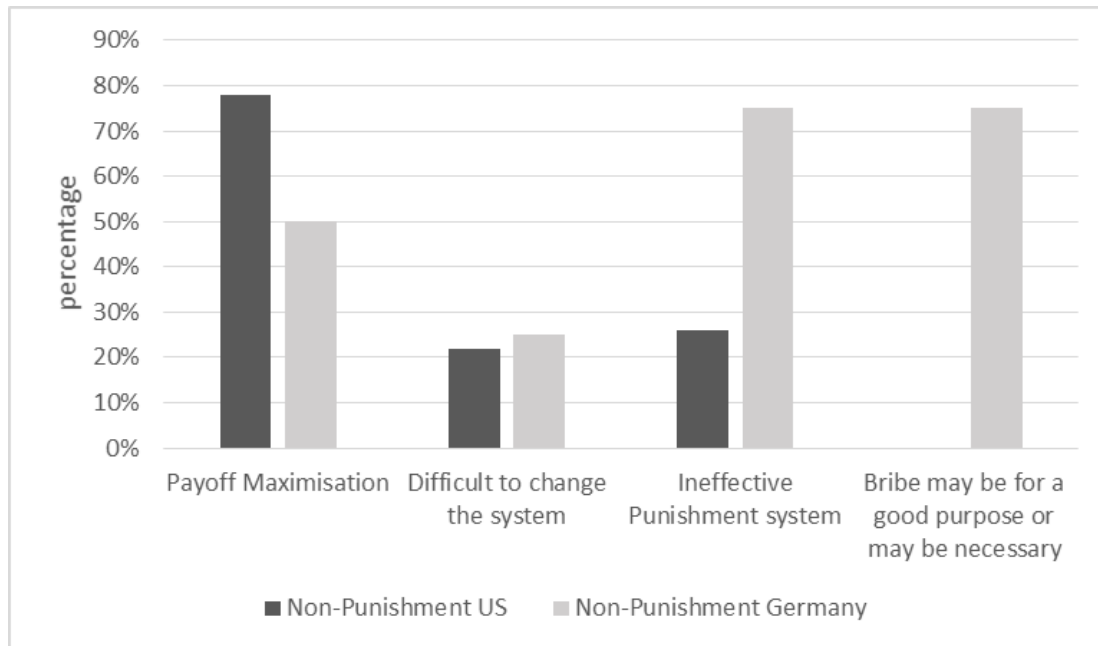


Asking the Californian non-punishers for their reasons, 78% said that they did not punish because of payoff maximation. Seven times (26%) people stated it is because of the ineffective punishment system and six times (22%) because it is difficult to change the system. Even two times people asserted that bribery may be for a good purpose or may be even necessary. In Germany, three people (75%) stated that they did not punish because of an ineffective punishment system, three participants (75%) said that the bribe may be for a good

purpose or may be necessary and two times (50%) people did not punish because of payoff maximisation (Table 6).

Yet, I could not find significant relationships between the amount of bribery and the control variables, except for the relationship with gender and the wish to work in private or public sector in the German sample. All the men (4) punished with highest amount, while out of the 10 women, seven chose the lowest amount of punishment (see appendix).

**Table 6: Reasons for Non-Punishment**



Asking the Californian participants for some examples of corruption that they have heard from or been, 25% associated corruption with politics and government (“officials take bribes”) – either with the Californian (“California state senator selling weapons”; “Arms Deals with San Francisco state senator”; “California Senators, government officials recently”), Mexican (“In Mexico, law enforcement can be easily bribed”), Chinese, North Korean (“North Korea and its propaganda to its citizens, the mass killings”) or Venezuelan governments. A few respondents just mentioned countries such as Mexico and China. People also mentioned the police several times (“Police asks for bribes to let people go sooner”), the bank system and media in general, nepotism at the workplace and the educational system (high school, university). 15 participants even admitted that they already cheated on exams and homework to get better grades at the university (“other people cheating on homework”; “buying fake diplomas”; “cheating classmates on exams”; “cheating on tests”; “people have paid for essays”, “bribing teachers to get higher grades”). They also give examples such as “on campus organization, student government”, “it’s hard not to encounter; sharing online pdfs of books”, “messed up how university trips to take so much money from students” or the “sociology department”. Two persons mentioned to bribe the doctor such as the dentist.

It is also considerable what some people understand by corruption such as “friends talking behind other’s back” or “people losing jobs because of personal feelings”, “most global affairs are driven by resources, but usually humanitarian / “democratic” motives are presented”, “False documentation, volunteer experiences”, “Reduction by winterbreak by 1 week to favor a specific ethnic/cultural group at the expense or ignorance of the other ethnic/cultural groups on campus”, “how some races are unjustly tried for their crimes while others do not get the same level of punishment”, “government has too much power, is the power really of the people/ Obama care? not optional”, “Malaysian ‘missing plane’”, “my

brother is a lawyer property corruption underhand dealings”, “NSA”, “my father bribes a lot of people to “look away” from his immoral doings”, “friends arguing with roommates about living situations” or “hook-ups at food places”.

Almost 40% of the German students experienced corruption while travelling: 11% (16 people) of the respondents have been in contact while travelling in South and Latin American countries such as Argentina, Ecuador, Columbia or Mexico; ; 8% (12 participants) in South Asian countries such as in India, Indonesia, Vietnam, Malaysia and Bali; 6% (8 people) in African states such as Uganda, Tansania or Kenya; 3% (5 people) in Eastern Europe such as Russia, 6% (8) in South European countries such as Greece and Spain. Moreover, 11% of the German participants associated corruption with politics and government and mentioned examples such as “Wulff-Affäre” or “Karl-Heinz Schreiber-CDU Spendenaffäre.“ 7% (10 people) mentioned “Berlusconi” or “Italy”, the ADAC (2%), 3% soccer, 6% of the students have heard from corruption at the university (“Liebeskind-Bau”; “Audimax”). 3% associated corruption with managers and private companies such as “Siemens”, 3% with the “USA-Waffenlobby”, 3% also mentioned the “police” and 1% have been in contact with corruption in the cultural scene (“theatre”; “Künstlerauftritte”). Furthermore, the German students seemed to be well-informed by the media because 8% (12 students) mentioned that they heard about corruption by the “media”, “news” and “documentations”.

### **Concluding Remarks**

The study has analyzed the propensity to engage in and to punish corrupt behavior in a three-person sequential move-game played by university students in California and Germany in 2013 / 2014. Focusing on the research question “What correlates with an individual’s propensity to engage in and punish corrupt actions from a comparative perspective?”, I could show that almost 70% of the Californian offered and accepted a bribe. In Germany almost 50% of the German participants took the opportunity to offer and 40% accepted a bribe. This does not confirm the assumption that in environments that are characterized by lower levels of corruption, individuals have a lower propensity to engage in corrupt actions. However, the finding confirms that US citizens have higher propensity to engage in corrupt actions. I hypothesized that their actions are shaped by their everyday corruption experiences determined by the social, political, legal and economic systems of the countries they live in. I assume that the higher propensity to engage in corrupt acts in the US could be related to the higher degree of individualism (Hofstede, 2014). A regression analyses confirms that there are differences because of a country’s culture.

Asking the firms for the reasons of their actions, the majority of both samples claimed that they bribed because they were just interested in seeing the response of the official and citizens. This answer rather suggests that the participants are reciprocal actors who like playing games and might indicate that the majority of the students bribed because they were curious about the further procedure of the game. However, this believability of what people indicate as their motivations has to be viewed with caution as we as humans typically are very good at coming up with self-serving justifications for our behavior (Epley and Caruso, 2004; Haidt, 2001; Shu et al., 2011). I assume that the participants acted selfishly and came up with alternative explanations because all of these actions were visible to the citizens and the firms did know that and nonetheless bribery occurred frequently.

I have also found that in both countries the probability to bribe decreases if the participants have work experiences and increases with the time the participants spent in other countries. Additionally, in Germany men have a higher propensity to bribe than women, while in California males tend to give higher bribes compared to females.

Looking at the reasons for non-bribery, the majority of the non-bribers in both countries explained their decision by ethical and fairness reasons. This implies that people seem to be motivated by improving their environment and avoid violating norms of fairness and morality. In Germany, even mentioned that they don't want that an environmental regulation is avoided.

A similar result shows the answers of the officials in both countries. Asking for the rejection of the bribery most of them either stated it was because of moral reasons and fairness or they were scared of potential consequences and risks. They also want to reduce corruption and is in line with the assumption that people are willing to punish unfair behavior (negative reciprocity), even when such punishment is costly and they do not benefit personally.

In the US, 52% of the citizens punished corrupt acts, in Germany even 80%. For the German sample, this finding reveals that people seem to be willing to sanction behavior which is socially regarded as immoral when they see it in others or when they are victimized by it. This confirms the arguments made in previous studies that the extent to which individuals care about others regarding preferences like fairness or morality may depend on whether they are predators or potential victims (Bolton and Ockenfels, 2000; Fehr and Schmidt, 1999). I also found a relationship between punishment and an individual's field of study in the Californian sample. Participants studying natural science such as economics, engineering, pharmacy, computer science or psychology students punished less compared to other students. Moreover, there is a significant relationship between the punishment of corrupt actions and individualism as well. However, 48% of the Californian and 50% of the German citizens who punished chose the lowest amount of 2 experimental dollars, although they had the opportunity to use a very effective punishment system for corrupt actions.

Asking for the reasons for punishment, almost 70% of the Californian and 90% of the German participants stated that they did it because of moral and fairness reasons, and to reduce corruption.

Yet, we could not find significant relationship between the amount of bribery and the control variables, except for the relationship with gender and the wish to work in private or public sector in the German sample. Men punished with highest amount, while the majority of the women chose the lowest amount of punishment.

The Californian and German results are in line with the corruption scores done by Transparency International. While this is an issue worthy of additional research, for a number of reasons I believe that the results reflect attitudes towards corruption rather than corrupt actions or punishment *per se*. Furthermore, the U.S. and Germany, are functioning democracies with a free press and the majority of the participants were very well-informed about corruption scandals in their country. Corruption receives, compared to countries with high levels of corruption such as India or Indonesia, more attention in media and was a major issue at that time when the experiments were conducted. The respondents have been sensitized to this issue and were influenced in their attitudes and actions towards corruption. They mentioned, for example, "the news", "the media" and "i see corruption in the news on tv." This would be in line with the study of Brunetti and Weder (2003) who find evidence of a significant negative relationship between press freedom and corruption. Moreover, based on the results of Brazil's anti-corruption program, Ferraz and Finan (2005) show that the media can enable voters to hold corrupt politicians accountable and to reward non-corrupt politicians by reducing informational asymmetries. Gentzkow et al. (2004) also discuss how the rise of the informative press may have been one of the reasons why corruption declined in the US. That is why, the role of media should be included in further research on the propensity to engage in and punish corrupt actions.

Some other avenues for future research is that experimental research involving other countries with different levels of corruption would also be valuable, particularly since the results suggest that the existing corruption indices might not be fully capturing how individuals behave in corrupt environments.

In general, the differences between the results and what one would expect to observe in these countries based on the existing corruption indices suggest that experiments can be used as an alternative methodology for eliciting attitudes towards corruption. Policymakers value more forward-looking measures that assess individuals' propensity to support anti-corruption policies in the future. The study suggests that experimental methodology can provide such information.

Finally, further research can compare the results with findings of Alatas et al. (2009) and Cameron et al. (2009) who have already run experiments in countries with high scores of corruption such as India and Indonesia. Subsequent studies can also look at how behavioral ethicists can increase the degree to which behavior in institutions conforms to generally accepted norms and promote ethical behavior and moral capital in societies to prevent corruption in the future.

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## Appendix

Age	Obs	Mean	Std. Dev.	Min	Max
Germany	346	22.73	3.31	15	38
US	365	20.30	1.87	17	34

Field of Study	Germany	US
African American Studies		1 (0.27%)
Anthropology		3 (0.82%)
Art		2 (0.55%)
Biology		49 (13.39%)
Business Psychology	32 (9.20%)	
Chemistry		4 (1.09%)
Chinese Studies		1 (0.27%)
Comparative Literature		1 (0.27%)
Computer Science		14 (3.83%)
Criminology		13 (3.55%)
Cultural Studies	39 (11.21%)	
Earth System Science		1 (0.27%)
East Asian Studies		2 (0.55%)
Economics	77 (22.13%)	66 (18.03%)
Ecology		2 (0.55%)
Education, BA	40 (11.49%)	
Education, MA	15 (4.31%)	
Engineering		43 (11.75%)
English		9 (2.46%)
Environmental Science	38 (10.92%)	
Film and Media		1 (0.27%)
Geography	1 (0.29%)	
Humanities		2 (0.55%)
Informatics		7 (1.91%)
Individual Studies	4 (1.15%)	
International Studies		5 (1.37%)
Journalism		1 (0.27%)
Latino Studies		1 (0.27%)
Law	4 (1.15%)	
Material Science		1 (0.27%)
Mathematics		7 (1.91%)

Neurobiology and Behavior		1 (0.27%)
Nursing Science		7 (1.91%)
PELP <sup>1</sup> Master	12 (3.45%)	
Pharmacy		23 (6.28%)
Physical Science		7 (1.91%)
Political Science	67 (19.25%)	13 (3.55%)
Political Science PhD		1 (0.27%)
Psychology		26 (7.10%)
Public Health		30 (8.20%)
Sociology		8 (2.19%)
Spanish		2 (0.55%)
Sustainability Master	17 (4.89%)	
Urban Studies		1 (0.27%)
Visual Studies		1 (0.27%)
Women's Studies		1 (0.27%)
Undeclared	2 (0.57%)	9 (2.46%)
<b>Total</b>	<b>348 (100%)</b>	<b>366 (100%)</b>

<b>Religion</b>	<b>Germany</b>	<b>US</b>
Agnostiker		8 (2.19%)
Atheist	37 (11.08%)	24 (6.56%)
Buddhist		33 (9.02%)
Catholic	53 (15.87%)	90 (24.59%)
Christian		22 (6.01%)
Hindu		11 (3.01%)
Islam	9 (2.69%)	5 (1.37%)
Protestant	139 (41.62%)	39 (10.66%)
None	91 (27.25%)	120 (32.79%)
Other	5 (1.50%)	14 (3.83%)
<b>Total</b>	<b>334 (100%)</b>	<b>366 (100%)</b>

<b>Income</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Germany	292	681.8664	315.3555	0	2500
US	249	642.8112	1958.747	0	25000

<b>Work Experience</b>	<b>Germany</b>	<b>US</b>
Yes	276 (80.00%)	224 (61.20%)
No	69 (20.00%)	142 (38.80%)
<b>Total</b>	<b>345 (100%)</b>	<b>366 (100%)</b>

<b>Work Duration</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
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<sup>1</sup> Public Economics, Law and Politics

Germany	261	35.62	34.33	1	200
US	217	16.78	20.42	0	144

<b>Time spent in other countries</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Germany	303	16.37	29.04	0	348
US	325	24.19	55.56	0	300

<b>Corruption Experienced</b>	<b>Germany</b>	<b>US</b>
Yes	49 (14.08)	57 (15.57%)
No	299 (85.92)	309 (84.43%)
<b>Total</b>	<b>348 (100%)</b>	<b>366 (100%)</b>

<b>Informed about Corruption</b>	<b>Germany</b>	<b>US</b>
Yes	218 (62.64%)	238 (65.03%)
No	130 (37.36%)	128 (34.97%)
Total	348 (100%)	366 (100%)

<b>Intend to work in private or public sector</b>	<b>Germany</b>	<b>US</b>
Private Sector	74 (21.51%)	86 (23.56%)
Public Sector	123 (35.76%)	80 (21.92%)
Don't know	147 (42.43%)	199 (54.52%)
<b>Total</b>	<b>344 (100%)</b>	<b>365 (100%)</b>

**Table 1a: Bribed as a Firm: Germany**

Variables	Dependent Variable: Bribed as a Firm	
	(1)	(2)
Gender	-0.712* (0.414)	
Religion	-0.057 (0.083)	
Field of Study	-0.022 (0.032)	
Work Experience	-0.954* (0.501)	
Time spent in other countries		0.023 (0.019)
Corruption Experience		0.740 (0.674)
Wish to work in private or public sector		-0.430 (0.267)
Constant	1.424** (0.639)	0.432 (0.635)
Observations	101	111
Pseudo R2	0.0513	0.0364
Prob > chi2	0.0961	0.1657

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 1b: Bribed as a Firm: US**

Variables	Dependent Variable: Bribed as a Firm	
	(1)	(2)
Gender	-0.318 (0.418)	
Religion	-0.003 (0.065)	
Field of Study	-0.015 (0.020)	
Work Experience	-0.779* (0.449)	
Time spent in other countries		0.008* (0.005)
Corruption Experience		0.103 (0.541)
Wish to work in private or public sector		0.286 (0.243)
Constant	1.635*** (0.630)	-0.236 (0.611)
Observations	122	108
Pseudo R2	0.030	0.036
Prob > chi2	0.451	0.166

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 2a: Amount of Bribe: Germany**

Variables	Dependent Variable: Amount of Bribe	
	(1)	(2)
Gender	-0.986 (0.594)	
Religion	-0.075 (0.122)	
Field of Study	-0.015 (0.047)	
Work Experience	0.152 (0.638)	
Time spent in other countries		0.034 (0.032)
Corruption Experience		0.364 (0.880)
Wish to work in private or public sector		-0.524 (0.376)
Constant	7.013*** (0.751)	6.968*** (0.898)
Observations	49	42
Prob > F	0.4815	0.4537
R-squared	0.0744	0.0658

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 2b: Amount of Bribe: US**

Variables	Dependent Variable: Amount of Bribe	
	(1)	(2)
Gender	-1.073** (0.477)	
Religion	0.0157 (0.0762)	
Field of Study	-0.0170 (0.0277)	
Work Experience	0.544 (0.464)	
Time spent in other countries		0.002 (0.003)
Corruption Experience		0.278 (0.652)
Wish to work in private or public sector		0.319 (0.294)
Constant	6.577*** (0.648)	5.332*** (0.772)
Observations	79	69
Prob > F	0.090	0.677
R-squared	0.101	0.023

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*



**Table 3a: Acceptance of Bribe: Germany**

Variables	Dependent Variable: Acceptance of Bribe	
	(1)	(2)
Gender	-0.214 (0.639)	
Religion	0.066 (0.140)	
Field of Study	-0.014 (0.057)	
Work Experience	0.498 (0.842)	
Time spent in other countries		-0.024 (0.028)
Corruption Experience		0.273 (0.759)
Wish to work in private or public sector		-0.298 (0.430)
Constant	-0.889 (1.015)	0.0929 (0.951)
Observations	51	46
Pseudo R2	0.010	0.025
Prob > chi2	0.952	0.685

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 3b: Acceptance of Bribe: US**

Variables	Dependent Variable: Acceptance of Bribe	
	(1)	(2)
Gender	-0.062 (0.521)	
Religion	0.126 (0.086)	
Field of Study	-0.011 (0.020)	
Work Experience	0.207 (0.494)	
Time spent in other countries		-0.000 (0.004)
Corruption Experience		-0.226 (0.603)
Wish to work in private or public sector		-0.158 (0.320)
Constant	0.245 (0.592)	1.124 (0.812)
Observations	80	72
Pseudo R2	0.025	0.004
Prob > chi2	0.625	0.937

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 4a: Punishment of Bribe: Germany<sup>2</sup>**

Variables	Dependent Variable: Punishment of Bribe	
	(1)	(2)
Religion	-0.001 (0.274)	
Field of Study	-0.269 (0.426)	
Time spent in other countries		0.166 (0.124)
Corruption Experience		-1.439 (1.912)
Wish to work in private or public sector		-1.540 (1.297)
Constant	1.623 (1.676)	3.518 (3.437)
Observations	12	16
Pseudo R2	0.029	0.214
Prob > chi2	0.801	0.277

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

<sup>2</sup> I had to exclude the variable gender and work in this model because of too less observations.

**Table 4b: Punishment of Bribe: US**

Variables	Dependent Variable: Punishment of Bribe	
	(1)	(2)
Gender	0.264 (0.676)	
Religion	0.107 (0.104)	
Field of Study	0.101** (0.0422)	
Work Experience	0.314 (0.597)	
Time spent in other countries		-0.005 (0.004)
Corruption Experience		-0.726 (0.806)
Wish to work in private or public sector		-0.057 (0.357)
Constant	-2.179** (1.038)	0.503 (0.904)
Observations	55	50
Pseudo R2	0.125	0.034
Prob > chi2	0.048	0.500

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 5a: Amount of Punishment: Germany**

Variables	Dependent Variable: Amount of Punishment	
	(1)	(2)
Gender	-7.930** (2.601)	
Religion	-0.692 (0.460)	
Field of Study	-0.604 (0.711)	
Work Experience	2.339 (2.727)	
Time spent in other countries		0.275 (0.163)
Corruption Experience		4.655 (3.303)
Wish to work in private or public sector		-4.064** (1.584)
Constant		11.46** (3.708)
Observations	14	11
Prob > F	0.030	0.055
R-squared	0.662	0.639

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 5b: Amount of Punishment: US**

Variables	Dependent Variable: Amount of Punishment	
	(1)	(2)
Gender	-2.791 (2.576)	
Religion	-0.233 (0.405)	
Field of Study	-0.007 (0.100)	
Work Experience	-0.228 (2.227)	
Time spent in other countries		-0.015 (0.020)
Corruption Experience		1.622 (3.241)
Wish to work in private or public sector		-0.904 (1.261)
Constant	10.92*** (3.371)	9.045*** (3.139)
Observations	29	27
Prob > F	0.779	0.673
R-squared	0.068	0.063

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\*  
p<0.01, \*\* p<0.05, \* p<0.1*

**Table 6a: Bribed as a Firm: Total Sample**

Variables	Dependent Variable: Bribed as a Firm
	(1)
Gender	-0.634* (0.328)
Religion	-0.026 (0.053)
Field of Study	-0.013 (0.018)
Work Experience	-0.837** (0.363)
Time spent in other countries	0.009* (0.005)
Corruption Experience	0.431 (0.431)
Wish to work in private or public sector	0.054 (0.190)
Individualism	0.747** (0.351)
Constant	0.065 (0.727)
Observations	206
Pseudo R2	0.0791
Prob > chi2	0.0043

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

**Table 6b: Amount of Bribe: Total Sample**

Variables	Dependent Variable: Amount of Bribe
	(1)
Gender	-1.544*** (0.404)
Religion	-0.043 (0.064)
Field of Study	-0.001 (0.024)
Work Experience	0.619 (0.394)
Time spent in other countries	0.001 (0.003)
Corruption Experience	0.210 (0.496)
Wish to work in private or public sector	0.367 (0.231)
Individualism	-0.130 (0.439)
Constant	6.276*** (0.880)
Observations	111
Prob > F	0.029
R-squared	0.150

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*



**Table 6c: Acceptance of Bribe: Total Sample**

<b>Variables</b>	<b>Dependent Variable: Acceptance of Bribe</b>
Gender	-0.326 (0.437)
Religion	0.067 (0.075)
Field of Study	-0.011 (0.020)
Work Experience	0.470 (0.460)
Time spent in other countries	-0.001 (0.004)
Corruption Experience	-0.058 (0.495)
Wish to work in private or public sector	-0.164 (0.262)
Individualism	1.595*** (0.507)
Constant	-2.256** (0.932)
Observations	115
Pseudo R2	0.0887
Prob > chi2	0.0806

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

**Table 6d: Punishment of Bribe: Total Sample**

Variables	Dependent Variable:
	Punishment of Bribe
	(1)
Gender	-0.035 (0.752)
Religion	0.152 (0.106)
Field of Study	0.105** (0.048)
Work Experience	0.424 (0.639)
Time spent in other countries	-0.004 (0.005)
Corruption Experience	-0.495 (0.773)
Wish to work in private or public sector	-0.112 (0.409)
Individualism	-1.915** (0.836)
Constant	2.128 (1.681)
Observations	65
Pseudo R2	0.159
Prob > chi2	0.077

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

**Table 6e: Amount of Punishment: Total Sample**

Variables	Dependent Variable: Punishment of Bribe
	(1)
Gender	-4.145* (2.176)
Religion	-0.532 (0.314)
Field of Study	-0.001 (0.090)
Work Experience	2.142 (1.901)
Time spent in other countries	-0.020 (0.021)
Corruption Experience	1.802 (2.556)
Wish to work in private or public sector	-1.527 (1.036)
Individualism	1.559 (2.197)
Constant	12.52** (4.574)
Observations	38
Prob > F	0.229
R-squared	0.281

*Note: Coefficients are from a logistic regression model; standard errors in parentheses\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

### **Experiments:**

Please fill out the following document:

Code Number: \_\_\_\_\_

FIRM    OFFICIAL    CITIZEN

1. **Age:** \_\_\_\_ years
2. **Gender:**  FEMALE    MALE
3. **Field of Study:** \_\_\_\_\_
4. **Semester:** \_\_\_\_\_
5. **Work Experience:**  YES    NO  
If yes, where and how long (in months): \_\_\_\_\_
6. **Religion:**  CATHOLIC    PROTESTANT    ISLAM    HINDU    ATHEIST     
Other \_\_\_\_\_  None
7. **Income:** \_\_\_\_\_
8. **Time spent in other countries (months):** \_\_\_\_\_
9. **Reasons for your behavior:**

#### **FIRM**

##### **Bribe?**

**IF, YES:**  PAYOFF MAXIMATION    FOR THE SOCIAL / ECONOMIC GOOD OF THE COUNTRY (e.g. reduce unemployment etc.)

TO SEE THE RESPONSE OF THE OFFICIAL / CITIZEN

OTHER REASONS \_\_\_\_\_

**IF, NO:**  MORALITY    TO REDUCE CORRUPTION (SOCIAL COST)    PROFIT-MAXIMISATION (IN THE LONG RUN IT IS BAD FOR THE FIRM)    NOT NECESSARY FOR FIRMS TO BRIBE    EQUITY

OTHER REASONS \_\_\_\_\_

#### **OFFICIAL**

##### **ACCEPT?**

**IF, YES:**  NECESSARY FOR FIRMS TO BRIBE / WILL BE ABLE TO HELP THE FIRM    NECESSARY BECAUSE SALARIES ARE LOW    PAYOFF MAXIMATION    EQUITY    GAME WILL CONTINUE

OTHER REASONS \_\_\_\_\_

**IF, NO:**  MORALITY    TO REDUCE CORRUPTION (SOCIAL COST)    SCARED OF IMPLICATIONS / RISK

PAYOFF MAXIMISATION    FAIRNESS    BRIBE TOO SMALL

OTHER REASONS \_\_\_\_\_

#### **CITIZEN**

##### **PUNISH?**

**IF, YES:**  MORALITY    REDUCE CORRUPTION    FAIRNESS    NEGATIVE RECIPROCITY

OTHER REASONS \_\_\_\_\_

**IF, NO:**  PAYOFF MAXIMISATION    DIFFICULT TO CHANGE THE SYSTEM    INEFFECTIVE PUNISHMENT SYSTEM

BRIBE MAY BE FOR A GOOD PURPOSE OR MAY BE NECESSARY    OTHER REASONS \_\_\_\_\_

### **10. After graduating do you wish to work in the private or public sector?**

PRIVATE SECTOR    PUBLIC SECTOR    DON'T KNOW

**11. Hear about or come in contact with corruption?**

- PERSONALLY IN YOUR WORKPLACE       PERSONALLY AT  
UNIVERSITY       VIA FRIENDS / FAMILY       VIA MASS MEDIA (TV,  
NEWSPAPER, RADIO)       NO CONTACT

If, Yes:

Example: \_\_\_\_\_

\_\_\_\_\_

**Thank you very much!!!**

## Endnotes

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<sup>2</sup> This situation describes one form of corruption. There are also individual forms of corruption where a power holder individually abuses power (e.g. see Abbink and Ellman, 2005; Azfar and Nelson, 2007; Barr et al., 2009).

<sup>3</sup> Hofstede (2001, p. 9) defines culture as "collective programming of the mind which distinguishes the members of one category of people from another." Welzel (2013, p. 64) even claims that "Like its biological basis, culture is a system of inheritance – programmed to accumulate, to store, and to transmit tried-and-tested knowledge of how to manage reality."

<sup>4</sup> Formal institutions are particularly considered by new institutional approaches that are often used by sociologists to analyze corruption by particularly stressing the role of institutions actors operate in. Thus, it is assumed that the relationship between institutions and actors are reciprocal and cyclical (Groenendijk, 1997; Scharpf, 2006).

<sup>5</sup> The other dimensions include: 1. Power distance; 2. Uncertainty avoidance; 3. Masculinity vs. femininity; 4. Long-term vs short-term orientation and 5. Indulgence vs. restraint (Hofstede, 2014).

<sup>6</sup> Abbink et al. (2002) make a similar assumption in their study. As in their paper, this multiplier also has the additional advantage of helping us prevent negative total payoffs.

<sup>7</sup> Cooper and Kagel (2003) consider the role of loaded language in signaling games and suggest that the use of a meaningful context might better capture behavior in field settings than the use of neutral language. However, Abbink and Hennig-Schmidt (2006) suggest that neutrally framed experiments are not necessarily less interpretable in terms of a real-life situation than those presented in a context. They find that the use of words like "bribe" do not make a difference in corruption games they have conducted.

<sup>8</sup> Alatas *et al.* (2009, p. 17) assume that "In the context of corruption, one possible explanation for the different gender effects that are observed in our data is the differing social roles of women across cultures. In relatively more patriarchal societies where women do not play as active a role in the public domain, women's views on social issues may be influenced to a greater extent by men's views. Hence, in such societies, one would expect to see less of a gender difference in behavior towards corruption in comparison to societies where women feel more comfortable in voicing their own opinions."

<sup>9</sup> Comparing the results with the findings of Banuri and Eckel (2011), at the University of Texas, where bribes were sent in 60 percent of decisions in the No-Punishment treatment and 42.33 percent of decisions with punishment, I can show that the propensity to engage in corrupt actions is even higher in California with the punishment treatment.

<sup>10</sup> The respondents could give several answers. That is why, the sum of percentages is over 100%.

<sup>11</sup> An alternative way of designing a more effective punishment system would be to increase the multiplier on the punishment level chosen by the citizen. However, I chose to increase the punishment options available to the citizens since I am also interested in examining "choice set" effects.