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HONEST INDIVIDUALS, (DIS) HONEST GROUPS?
EXPERIMENTS ABOUT THE INFLUENCE OF THE COLLECTIVE ON INDIVIDUAL BEHAVIOR

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To my mother, Claudia Marcia, who dedicated her life to me and my sister, to whom I dedicate my main and most important achievement.

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In the court of our conscience, we only call witnesses of defense. Unknown author.

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ABSTRACT

This study aimed to analyze the dishonest behavior of individuals when they are about to make a group decision. For this, three experiments were developed, based on the die-rolling game, and applied to students of Accounting in three different universities. Each experiment also had a different purpose: the first one intended to evaluate the influence of the group in the decision of the individuals regarding dishonesty; the second analyzed whether the existence of a leader could induce the participants to be more dishonest; and the third sought to present whether control mechanisms would be able to inhibit or decrease dishonesty. Therefore, three papers were prepared, each containing one experiment. The experiments were performed with 634 participants in total (250 in the first, 180 in the second and 204 in the third) in which they would watch a die-rolling game and report the number shown by the dice. Nevertheless, the payment was tied to the number they reported and not to the number displayed, making dishonesty possible. In all the experiments it was possible to corroborate the hypothesis of the research: in the first, it was verified that the individuals are more dishonest when they must make the decision in group rather than individually; in the second experiment, it was evidenced that the insertion of a leader made the participants have more dishonest attitudes; and, finally, in the third, the control mechanisms presented (auditing and reading articles in the Professional Code of Ethics of the Accountant) resulted in more honest decisions. This work puts into question the research on dishonesty, not only its ethical and moral aspects, but also its financial impacts. It is worth mentioning that this research does not propose to exhaust the subject about dishonesty nor does it seek to analyze individuals' internal motivations about their decisions, understanding that these topics are related to other sciences (such as Psychology and Sociology, for example). The objective was to verify the existence of dishonesty, its possible impacts and some mechanisms capable of decreasing it, where the decisions are made by a group of people, similar to the corporate environments.

Keywords: Dishonesty. Groups. Experiment. Leader. Control Mechanisms. Behavioral Finance.

RESUMO

Esse estudo teve como objetivo analisar o comportamento desonesto dos indivíduos quando os mesmos devem tomar decisões em grupo. Para isso, foram desenvolvidos três experimentos, baseados no jogo de dados, sendo aplicado em estudantes de Ciências Contábeis, em três universidades diferentes. Cada experimento também apresentou um propósito diferente: o primeiro teve como objetivo avaliar a influência do grupo na decisão dos indivíduos sobre a desonestidade; o segundo foi analisar se a existência de um líder poderia induzir os participantes a serem mais desonestos; e o terceiro, buscou apresentar se os possíveis mecanismos de controle seriam capazes de inibir ou diminuir a desonestidade. Para isso, foram desenvolvidos três artigos, cada um contendo um experimento. Os experimentos foram realizados com 634 participantes no total (250 no primeiro, 180 no segundo e 204 no terceiro) no qual eles deveriam assistir a um lançamento de dado e informar o número mostrado pelo dado. Contudo, a remuneração estava atrelada ao número que eles informaram e não ao número visto, possibilitando assim, serem desonestos. Em todos os experimentos foi possível corroborar a hipótese da pesquisa: no primeiro, verificou-se que os indivíduos são mais desonestos quando devem tomar a decisão em grupo do que individualmente; no segundo experimento, evidenciou-se que a inserção de um líder fez com que os participantes tivessem atitudes mais desonestas; e, por fim, no terceiro, os mecanismos de controle apresentados (auditoria e a leitura de artigos do Código de Ética Profissional do Contador) fez com que os mesmos tomassem decisões mais honestas. Esse trabalho coloca em discussão a pesquisa sobre a desonestidade, não só os seus aspectos éticos e morais, mas também os seus impactos financeiros. Vale ressaltar que o mesmo não se propõe a esgotar o assunto sobre a desonestidade nem busca analisar motivações internas dos indivíduos sobre suas decisões, entendendo que esses tópicos se relacionam com outras ciências (como a Psicologia e a Sociologia, por exemplo). O intuito foi verificar a existência da desonestidade, seus possíveis impactos e alguns mecanismos capazes de diminuí-lo, em locais onde as tomadas de decisões são realizadas por um grupo de pessoas, semelhante aos ambientes corporativos.

Palavras-chave: Desonestidade. Grupos. Experimento. Mecanismo de Controle. Finanças Comportamentais.

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LIST OF ABBREVIATIONS AND ACRONYMS

BFT Behavioral Finance Theory

BRL Brazilian Real

CFC Federal Accounting Council in Brazil

GDP Gross Domestic Product

IASB International Accounting Standards Board

MTF Modern Theory of Finance

PCEA Professional Code of Ethics of the Accountant

SMORC Simple Model of Rational Crime TTF Traditional Theory of Finance

USD American Dollar

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1. INTRODUCTION

In this research, three studies with application of different methodologies concerning the dishonest behavior of the individuals when they are inserted in a group will be carried out. For that, this introduction contextualize the theme in question, presenting the research problem, the general and specific purposes of the study, as well as the reasons that justify the choice of this theme and its significance to the science. Moreover, this very introduction provides explanations on the structure of the thesis, in three different studies.

1.1. Contextualization

Dishonest actions are common in everyday life: not only actions performed by professional criminals – robbery, kidnapping, drug trafficking, etc – but also consumers and companies who behave in an ethically questionable way, such as the company Enron, tax evasion in the declaration of income tax or even through illegal download files over the internet.

Several researches have tried to understand the dishonest behavior of the people and their reasons to cheat: DePaulo, Kashy, Kirkendol, Wyer and Epstein (1996) verified that the frequency with which people lie ranges from 20 to 31% in their social interactions; the United Nations Office on Drugs and Crime (2013) states that more than USD 1 trillion dollars is spent each year on bribes and about USD 2.6 trillion are diverted into corruption, which is equivalent to 5% of World's GDP (Gross Domestic Product); in the academic area, List, Bailey, Euzent and Martin (2001) identified the existence of a significant amount of misconduct, in relation to the expropriation of undergraduate and postgraduate student research and the inclusion of authors in undeserving academic works.

In traditional economics, the concept of fraud comes from economist Gary Becker (1968), who developed the theory of the Simple Model of Rational Crime (SMORC). This theory states that people commit a crime based on a rational analysis of each situation, taking into account the benefits they will receive from the action, the risk of being discovered and the applicable punishment. Namely, decisions about dishonesty are made on the basis of a cost-benefit analysis of the situation. However, Becker (1993) also states that ethical, social and cultural factors can influence this process; in other words it is not a purely rational decision.

Kahneman and Tversky (1979) admit that, when faced with questions of financial gains and losses, there are anomalies which violate the principles of rationality. In this sense, Ariely (2012) points out that fraudulent behavior is also influenced by self-justifications, which can be considered irrational. Namely, although there is an opportunity to achieve superior gains, individuals are not too dishonest so that they won't feel guilty or injure their own ethical standards.

Thereby, Ariely (2012) develops a theory whose central idea is that dishonest behavior would be driven by two opposing motivations: a financial motivation, the individual wants to benefit as much as possible through dishonest methods and also achieve the maximum possible profit (traditional motivation); and on the other hand, there is the ego motivation, people want to feel honest, look in the mirror and feel good about themselves. Since both are antagonistic concepts, people live in a constant internal conflict, trying to balance these two feelings. Because of that, this theory is called the Margin Maneuver Theory, since at all times, humans manage their actions and feelings in a way that they achieve the maximum possible benefits with cheating and without hurting their ethical self-concepts.

Nevertheless, both in Brazilian and international literature, there is relatively rich evidence on the dishonest behavior of individuals and their motivations (for example Mazar, Amir & Ariely, 2008; Mazar & Ariely, 2006; Gino, Ayal & Ariely, 2013; Castillo, Petrie, Torero & Viceisza, 2014; Melo Segundo, 2016; Lima, Avelino & Cunha, 2017; Tomazelli, 2011), however, there are few studies about the dishonest behavior of groups.

Recently, a number of examples of dishonest behavior in groups and in organizations stood out, with fraudulent accounting methods and bad practices of groups of executives that led large companies to bankruptcy, such as WorldCom and Enron. In Brazil, recent corruption scandals involving companies such as Petrobras, Furnas, Eletronuclear and several companies in the construction sector – Odebrecht, OAS, Queiroz Galvão, among others – have an impact not only on the Brazilian economy as a whole, but also externally in the public image of the country. This is identified in these recent scandals given that dishonest decisions were made by a group of individuals and not by a particular individual. In the same way, decisions made by committees of economic affairs and political organizations are taken by a group of individuals . Researches such as Charness and Sutter (2012) and Kugler, Bornstein, Kocher and Sutter (2007) suggest that the same people who make honest decisions individually are or may be dishonest when they decide as a group. In his laboratory experiment, Sutter (2009) showed that people behave more dishonestly in groups than individually.

However, there are also researches that argues that, when people are in a group, there is a tendency for less dishonest behavior than otherwise: first, social concerns about the image are stronger in the group than individual ones (Bénabou, 2012; Bénabou & Tirole, 2006); second, group interaction can make individuals better at understand norms, and such interaction can reduce dishonest behavior (Kocher, Schudy & Spantig, 2017); and third, there is also evidence that moral reminders – such as reciting the 10 commandments or swearing on the Bible – can reduce dishonesty (Pruckner & Sausgruber, 2013; Ariely, 2012). Therefore, when conducting group discussions, they may lie less.

1.2. Research Problem

The topic about honesty, be it individual or in a group, is closely connected with accounting. This discussion pervades areas such as controllership, auditing, fiscal and public accounting, among others. Understanding how dishonesty takes place within a social group and the mechanisms that trigger this attitude and its effects on the generation of value to an organization and society is relevant.

Thus, it is extremely important to study dishonest behaviors, especially in countries that suffer the most from this type of problem, as it is the case in Brazil: according to the index of corruption measured by the World Economic Forum (2016), Brazil is the fourth most corrupt nation in the world, behind only Chad, Bolivia and Venezuela, which leads the ranking. The survey carried out by the Swiss organization was conducted with 15,000 business leaders from 141 countries and Brazil received the 2.1 score on a scale of one to seven. In another study released by the NGO (non-governamental organization) Transparency International (2016), the country ranked 79th in a list of perception of corruption in the world among 176 countries.

Furthermore, there is a shortage of papers that investigate the influence of the group on the dishonest behavior of individuals, both in Brazil and internationally: there are already numerous studies that address the issue of individual dishonesty (Glätzer-Rützler & Lergetporer, 2015; Ariely, 2012; Gneezy, 2005; Gneezy, Rockenbach & Serra-Garcia, 2013; Melo Segundo, 2016; Lima, Avelino & Cunha, 2017; Santos, 2011; Mazar; Amir & Ariely,

2008; Mazar & Ariely, 2006). However, when it comes to the dishonest behavior of individuals in groups, the research is still incipient, and only international studies are found: some results corroborate the assertion that individuals are more dishonest when they are inserted in a group context rather than individually (Kocher, Schudy & Spantig, 2017; Conrads, Irlenbusch, Rilke & Walkowitz, 2013; Fischbacher & Föllmi-Heusi, 2013; Chitilová & Korbel, 2014). On the other hand, other results indicate that, when inserted in a group, people behave more honestly, either by the concern with their image or by living with others (Bénabou, 2012; Bénabou & Tirole, 2006; Sutter, 2009; Charness & Sutter, 2012; Kugler *et al.*, 2007).

Thus, this study proposes to investigate the influence of the group in the decision making of the individual and possible mechanisms that would be able to influence dishonest behavior.

Based on this context, the study aims to explore the following question:

Are there differences in the degree of dishonesty of groups and individuals?

1.3. General and Specific Purposes

The main objective of this study is to analyze dishonest behavior, comparing individual and collective decisions, as well as identifying mechanisms capable of influencing this behavior.

As the focus lies on dishonest behavior, three studies will be conducted with the following purposes:

<u>Study 1</u>: Evaluating the effect that a social group can have on the individual's honesty. In this way, it will be verified if the group influences the decision of the individual, especially concerning the fulfillment of ethical norms.

Study 2: Analyzing whether the existence of an individual in a situation of superiority (such as a boss or high executive) would influence a dishonest behavior. Thus, it will be verified if the individual power of the leader influences the dishonesty of its subordinates.

<u>Study 3</u>: Showing how the insertion of control mechanisms, in this case auditing and professional ethical norms, influence the dishonest behavior of individuals in groups.

The nature of these studies composes a subset of researches about *dishonest behavior*, both individual and in group, whose purpose is to identify differences in dishonesty committed individually and collectively and possible mechanisms that influence this behavior.

1.4. Theme Justification

The dishonest behavior and the morality of the individuals have been analyzed in several studies, both in Brazil and international (Mazar, Amir & Ariely, 2008; Mazar & Ariely, 2006; Gino, Ayal & Ariely, 2013; Santos, 2011; Melo Segundo, 2016; Lima, Avelino & Cunha, 2017). In the study of Ariely (2012), it was perceived that the problem of dishonesty has a universal character: different cultures, be it national, regional or business-related, contribute to the occurrence of dishonest acts. Ariely (2012) compared, using an experiment out of any cultural context, the dishonesty of individuals from different countries,

such as Israel, the United States, Italy, England and Turkey, and found no different levels of cheating. This corroborates the idea that the human being is morally flexible and is able to reshape situations and actions so that they can feel comfortable with themselves.

However, daily activities are intertwined in a cultural context that can influence dishonesty, modifying the tolerable room for maneuver considered dishonest for each individual. In this way, as Ariely (2012) points out, there is still something to be learned about the influence of culture in cheating, not only in terms of social influences that help to curb dishonesty, but also in the social forces that make it stronger.

Thus, this study seeks to identify the influence of these social forces that can either decrease or increase dishonesty levels, and also become a basis for a study of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017), international researches that evaluated the influence of the group on the dishonesty of individuals.

Taking into account the concern regarding ethics in business attitudes, the study of dishonesty becomes even more relevant. Internationally, some authors have been developing studies about group effects and they found that dishonesty is greater in groups when compared with individuals (Kocher, Schudy & Spantig, 2017; Lee, Im, Parmar & Gino, 2015; Chytilová & Korbel, 2014; Sutter, 2009; Muehlheusser, Roider & Wallmeier, 2015; Conrads *et al.*, 2013; Fischbacher & Föllmi-Heusi, 2013). About Brazil, it can be seen that this issue is deeply engraved, and there is a need to understand dishonest behavior in its fullness, considering the group effect, aiming to bring to debate a relevant element to accounting researches, whereas the first researches was focused on the dishonesty of individuals, as in the case of Lima, Avelino and Cunha (2017), Santos (2011), Melo Segundo (2016) and Ganassin (2016).

The testimony of Andrew Fastow to US courts, the former CFO (Chief Financial Officer) of Enron, when asked about the accusations of corruption registered against him said the following: "(...) I stole from Enron. I really did. We stole from Enron" (The Enron Trial, 2016). When asked about what the "we" meant, the former Enron CFO said that it was referring to him and the other managers of the bankrupt company. From this statement, one can see that the scandals of corruption and fraud in a company are not always linked to one person only: these scandals are mostly held in large companies, involving several members, even seniors, as was the case of Enron, in US, and Petrobras, recently in Brazil.

Furthermore, corruption is one of the great evils of Brazilian society: in spite of having one the largest economies in the world, Brazil is still considered to be a developing country due to its high rates of illiteracy and corruption. In addition, 70% of Brazilians consider corruption as one of the main problems of the country (Rosa, Bernardo, Vicente & Petri 2015). Some reasons for this perception would be the corruption scandals involving Petrobras, the growing unemployment and problems in the economy.

Nevertheless, the problem of dishonesty is not exclusive to the public sector: by proposing the Agency Theory, Jensen and Meckling (1976) stated that the conflict of interests and the informational asymmetry existing in the relation between agent and principals can lead to the problem of Agency, causing the agent to incur ethical deviations to achieve his own interests. The assumption of this conflicting relationship and the maximization of well-being lead individuals to fraudulent actions and noncompliance with their obligations. Dumer, Brambati, Souza and Gobbi (2016) have shown that the main motivators of tax fraud by business managers are the disappointment with the State to perform the public administration function and the financial accumulation of the company, in order to yield greater profits.

Therefore, identifying those responsible for fraudulent acts and their motivators can help to combat these deviations. In this context, accounting can be inserted as a fundamental

piece in the control of dishonest acts, since it can help in the control of internal procedures of the company and in the verification of possible deviations.

Furthermore, the International Accounting Standards Board (IASB) in its Conceptual Framework (2018) expressed that the general purpose of financial reporting must have two fundamental qualitative characteristics: relevance and faithful representation. In other words, the financial information is to be useful in a sense that the information should not only present a relevant phenomenon, but also faithfully represent the reality being portrayed, being complete, neutral, and error-free. This indicates that the accounting information gains value as it is presented without deviations.

In view of the above, it is important to understand the mechanisms that drive dishonest attitudes and their effects on the value of companies and the general society in order to help in the creation of more effective control mechanisms.

1.5. Research Contributions

As previously seen on the topic of collective dishonesty, there are still few studies on the issue in question, and the ones that exist dates from the year 2005 onwards, characterized as recent.

In the international context, there is no consensus on whether individuals tend to be more honest in groups or individually: some researches points out that, when inserted into groups, people are more inclined to be dishonest than when they make decisions individually (Kocher, Schudy & Spantig, 2017; Conrads *et al.*, 2013; Fischbacher & Föllmi-Heusi, 2013; Chytilová & Korbel, 2014); on the other hand, other researches indicates that when in a group, people are more honest because of the fear that their image might be stained and the influence that social interaction causes in their decision-making (Bénabou & Tirole, 2006; Sutter, 2009; Kugler *et al.*, 2007). In Brazil, there is still no research that investigates dishonest behavior in a group, only at the individual level (Melo Segundo, 2016; Lima, Avelino & Cunha, 2017).

Thus, the contribution of this research is, given the increase of studies on the theme, to identify characteristics of dishonest behavior in a group in another cultural and legal context, as the case in Brazil. Besides the fact that there is no research on the topic of group dishonesty in Brazil, the analysis of the influence of the leader and the investigation of inhibiting mechanisms, such as auditing and ethics, are an innovation in dishonesty researches, expanding the scope of this subject. In addition, this thesis is structured in three related researches, addressing different and complementary aspects related to dishonesty, filling a gap in the literature, since national surveys deal only with dishonesty at the individual level.

Moreover, the three studies cover different topics about dishonesty: the first seeks to identify differences in collective and individual dishonesty; in the second, if the leader's individual power influences dishonest behavior; and in the third study, possible mechanisms inhibiting dishonesty in the group.

Although the format of the works the experiments is based on of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017), the present research differs substantially from the study presented by Fischbacher and Föllmi-Heusi (2013) since only the die-rolling was employed to test dishonesty, an element easily understood by different audiences, so there were no problems of misunderstanding the experiment by the participants.

From the study of Kocher, Schudy and Spantig (2017) the idea of the division of the groups in *GroupPC* (payoff commonality) and *GroupNoPC* (no payoff commonality) (the original names were kept in the study) and the conversation between the members of the

group through chat was withdrawn. However, there are substantial differences from the present research to the previous one: the experiment conducted by the authors in question was divided into three phases, the first and last at the individual level and only the second was performed in a group; between each stage of the experiment, participants should assume whether the members of the other groups were dishonest or not (participants made more money if their hypotheses were correct). In addition, the format of the second (when it comes to the influence of the leader) and the third experiment of the present research (on the mechanisms that inhibit dishonesty) have no relation with the researches cited above. This is an innovation in this research, because there is no paper that analyzes dishonesty in a group, with a component that is capable of influencing the others, such as a leader, and studies that explore control mechanism that stimulates a decrease in dishonesty.

It is also important to emphasize that this study does not intend to evaluate the internal considerations of each individual such as the choice of honesty or dishonesty, because this area is the aim of Psychology's studies. Although the present research uses concepts derived from this area, the purpose here is not to understand aspects related to the unconscious (as in the researches of Freud and Jacques Lacan) or subjective formations, but only analyzing the existence or not of dishonesty between individuals and groups, also trying to present possible mechanisms that inhibit dishonesty, applied in a simulation of a daily accounting reality.

Thereby, it is understood that this study contributes to the literature in the comprehension of the collective dishonest behavior, which is, for example, similar to the decision making in the companies, besides seeking to find inhibitor mechanisms of this behavior.

1.6. Thesis Structure

In order to analyze dishonest behavior in individual decisions and those taken in groups, experiments will be carried out with undergraduate students (Elliot, Hodge, Kennedy & Pronk, 2007; Elliott, Hodge & Jackson, 2008). This choice was made because of accessibility and ease of data collection, and also their answers can be used as proxies for individual investors with different knowledgment levels, and is justified because they will be the future decision makers of these companies, so their level of dishonesty, both individually and in groups, will impact the market as a whole, aware that there is a limitation to the research. Thus, the data found in this research can not be generalized to all environments, also due to the hypothetical nature of the experiments, however, the results serve as a parameter to identify dishonest behavior, especially in a group, in situations of a simpler character that can be indicative of the behavior of these individuals when faced with situations of greater complexity.

It was decided to structure the thesis as a set of studies (papers) listing the most relevant themes for the study concerning group dishonesty. The experiments were based on the die-rolling by Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017), in which the respondent's remuneration could be maximized by their dishonesty.

It is noteworthy that during all experiments, each participant used a computer, randomly, and all received the same instructions on how to proceed in each stage of the experiment, and questions were asked in order to verify that the participant understood the next steps. Each stage of the experiment only allows them to begin the next one when all the remaining participants finished the previous stage. Also, no communication was allowed between the participants during the experiments (except during chats). Before the

experiments, participants answered a questionnaire to identify their personal characteristics such as gender and family income, for example.

The pre-test was carried out with four undergraduate students to verify if the text was clear, if it was not too large and the time available for the chat. Two subjects judged that the time for the chat (initially 3 minutes) was excessive for the conversation, reducing it to 2 minutes. Furthermore, it was suggested, in the third experiment, the inclusion of a question to testify that the respondents read the articles from the Professional Code of Ethics of the Accountant.

About the experiments, the design chosen was the within-subjects design, that is the one in which the participants are exposed to different treatments (in this case, different aspects about dishonesty) and their decisions analyzed (Hsu, Simmons & Wieland, 2016). The choice of this design was due, in particular, to the possibility of sample reduction, since the individuals who participate also control each other, and the consequent decrease of the money spent. One of the drawbacks of this model is the so-called carryover effects, in which the responses from previous steps may affect subsequent treatments (Aronson, Wilson & Brewer, 1990).

The experiments were carried out in the laboratories of the universities, at the same time where the students would be in the classroom. This type of configuration has as main advantages the isolation of the participants from the real world, reducing noise and environmental influences (Colquitt, 2008) and their good suitability in subjects still little explored, as is the case of collective dishonesty due to its low cost, enabling it to be expanded later under more detailed conditions (Hsu, Simmons & Wieland, 2016).

One of the concerns when using experiments in papers lies on the external validity of the model, that is, if the results found in the research can be generalized to professionals working in the market. Although there is some questioning on the subject, there is evidence in Psychology and Sociology that emphasize that the purpose of using experiments is to examine their internal validity and causality, not generalization (Mook, 1983; Aronson, Wilson & Brewer, 1990; Shaver, 2014). The objective of using experiments is to investigate what the theory proposes (Hsu, Simmons & Wieland, 2016) and, if relations are supported, to test in the natural environment to propose generalization (Mook, 1983; Berkowitz & Donnerstein, 1982).

Beyond this introductory chapter, the thesis is organized in three more chapters, which present the three studies proposed in this research: each chapter containing the theoretical basis, the method that was used, the results found and the conclusions; a chapter where the conclusions of the study are combined with the answer of the central research question; and, finally, the references.

2 COLLECTIVE DISHONESTY: AN ANALYSIS OF THE GROUP'S INFLUENCE IN THE DISHONESTY BEHAVIOR OF INDIVIDUALS

News of dishonest acts has become increasingly frequent, whether in the politics or daily life by the citizen, as well as in cases of scandals involving corruption schemes in companies. To explain the dishonesty process, the Maneuver Margin Theory, developed by Ariely (2012), states that the individual performs internal "maneuvers", balancing the benefits that he will receive with the act and the self-concept that they have of themselves. In order to verify if individuals are more dishonest when they are about to make decisions in groups rather than individually, an experiment was conducted with 250 Accounting students, where they should observe the die-rolling game and then report the number seen. The remuneration of the participants was linked to the number reported and not the number displayed, thus enabling them to be dishonest. In the first round, the participants should make their decisions individually, and in the second stage, the individuals were divided into groups of 3 people each and should make the decisions collectively. For that, a chat was made available so that they could talk. The results of the research corroborated the initial hypothesis that individuals are more dishonest when making decisions in a group (36% of participants) comparing to decisions taken individually (23%).

2.1 Introduction

Cases of corruption involving well-known companies have been a recurring theme in the news, not only in Brazil, but also internationally. In many of these situations, the cases of fraud and corruption occurring in the company were committed not only by lower-level officials, but also by the top management of the company.

The traditional economic theory, based on the research of Becker (1968), is based on a dishonest act committed by taking into account a cost-benefit relationship, that is, the individual takes into account the benefits that he will receive with the dishonest act, the risk of being discovered and the punishment for the act. By balancing all these factors and verifying if the pros outweigh the cons, the individual will make a dishonest decision, which is purely rational.

Nevertheless, Becker (1993), years later, identified that non-rational factors, such as culture and ethics, can influence this process. Thus, Ariely (2012) developed the Maneuver Margin Theory, in which he affirms that dishonest acts are not committed rationally, but rather the individual performs internal "maneuvers", balancing the benefits that he will receive with the act and the self-concept they have of themselves. Even if the benefit of the dishonest act is too high, if it does not injure their threshold of dishonesty, the individual will not consider himself dishonest. The literature has shown that some individuals often renounce monetary benefits for honest behavior, in other words, even if there is a future positive cash flow when acting dishonestly, some individuals adopt an honest behavior (Abeler, Becker & Falk, 2014; Fischbacher & Föllmi-Heusi, 2013; Kröll & Rustagi, 2016; Gneezy, 2005; Gneezy, Rockenbach & Serra-Garcia, 2013; Mazar, Amir & Ariely, 2008; Glätzle-Rützler & Lergetporer, 2015).

Some authors have been conducting researches about dishonest behavior in individuals (Mazar, Amir & Ariely, 2008; Mazar & Ariely, 2006; Gino, Ayal & Ariely, 2013; Santos, 2011; Melo Segundo, 2016; Lima, Avelino & Cunha, 2017). Though, in view of recent corruption scandals involving companies around the world, such as WorldCom, Enron,

Volkswagen, Deutsche Bank, and in Brazil, such as those of Petrobras, Eletrobras, Furnas and the various civil construction companies involved in the "Lava Jato" operation, it became necessary to investigate the motivators of the dishonest behavior of individuals in organizations.

International investigations are beginning the studies about group dishonesty (Conrads *et al.*, 2013; Baeker & Mechtel, 2015; Sutter, 2009; Kocher & Sutter, 2005; Kocher, Strauß, & Sutter, 2006; Muehlheusser, Roider & Wallmeier, 2015; Kocher, Schudy & Spantig, 2017), however, no research was found in the Brazilian literature that approached the theme. Much of the previous research has focused on the study of individual dishonest behavior, which is due not only to the need for research purposes but also to the ease of obtaining the data. The study of collective dishonesty becomes more difficult due to the existence of few previous works, difficulty in the logistics of gathering a large group of people to perform the experiment and in the interpretation of the data obtained collectively.

In addition, with corruption scandals in Brazil recently, involving illicit money exchange between politicians and several companies of different branches such as civil construction and food products, it is necessary to understand the dishonest behavior of individuals, especially when they are inserted in a group context. Besides, and specifically, in 2016, the state of Rio de Janeiro decreed a state of public calamity due to lack of money in public treasury, which resulted in the lack of payment of salaries to employees, the maintenance of basic services such as health, education and security, and the attempt to implement measures to reduce spendings. One of the justifications for the state of Rio de Janeiro to have reached this level is corruption: the operation "Fatura Exposta", one of "Lava Jato" sevelopments in the state, has already arrested the former governor of Rio de Janeiro, Sérgio Cabral, the former secretary of health, several important businessmen for the state, such as Eike Batista, and even the president and four advisors of the Court of Audit of the State of Rio de Janeiro, caught in million-dollar corruption schemes.

With the recent corruption scandals involving Brazilian and international companies and based on the theory that individuals do not commit dishonest acts only by analyzing the situation rationally, the research problem arises: When analyzing the decision making process, individuals, when inserted in groups, present behaviors that are more dishonest than those that decide individually?

Thus, the objective of this research is to verify if there is more dishonesty when decisions are taken in group when compared to the individual ones. For this, an experiment will be carried out, adapting the methodology used by Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017).

In the next section it will be presented the theoretical basis with the concepts about Simple Theory of Rational Crime (SMORC) and Maneuver Margin Theory; then the design experiment, its application, stages and methodologies used will be outlined; soon after, the results found in the research are described, and, finally, the final considerations are put.

2.2 Literature Review

In order to investigate the dishonest behavior of individuals, there are two different approaches in the literature: the first concerns an exclusively cost-benefit analysis, in which the individual chooses to be dishonest or not based on the reward he will receive his act, estimating the probability of being caught and the corresponding punishment. On the other hand, the second approach, basically based on concepts from Psychology, Sociology, Behavioral Economics and Neuroscience, adds the dimension that there are also internal considerations of each human being that takes part in the dishonesty decision.

In the standard economic theory approach, the individual is rational, therefore he compares payoffs in order to choose the option that maximizes his earnings. As this analysis only considers external costs and benefits, the decision for dishonesty is made when the benefits (profitability) are greater than the costs (punishment) triggered by dishonest decision-making (Becker, 1968; Allingham & Sandmo, 1972).

This external cost-benefit view is the central theme of the SMORC theory and also serves as the basis for most of the existing policy measures to prevent dishonesty (Santos, 2011). As this view is widely adopted in the legal area, efforts to curb dishonest behavior are based on the creation of more severe punishments and on the ever-increasing supervisor of individuals.

Therefore, the external cost-benefit analysis or the SMORC theory claims that there are three variables that influence dishonest decision making: the probability of being caught, the applicable punishment, and the magnitude of the rewards.

Nevertheless, more broadly, other research has shown that dishonest behavior also takes into consideration internal rewards, such as internalization of norms and values of society in which it operates (Campbell, 1964; Dilulio, 1996; Henrich, Boyd, Bowles, Camerer, Fehr, Gintis & McElreath, 2001; Mazar, Amir & Ariely, 2008; Mazar & Ariely, 2006; Ariely, 2012).

The literature indicates that people have a strong belief in their own morality, value honesty, and want to keep this idea about their self-concept (Greenwald, 1980; Griffin & Ross 1991; Sanitioso, Kunda & Fong, 1990). This means that in order to maintain internal morality standards, a person may lose financial benefits, but will retain his positive self-concepts (Harris, Mussen & Rutherford, 1976). This does not mean that the individual will always be honest in their decisions: Mazar and Ariely (2006) claim that each individual has a threshold of dishonesty; if dishonest acts do not affect this threshold, the dishonest behavior of the individual will be based on the cost-benefit external relation. However, when the dishonest act becomes very evident, that is, it exceeds this previously established limit, the internal mechanism of reward is activated and it exerts its influence on the external rewards. That way, even if the benefits of being dishonest exceeded their costs, the individual will be honest, based on his self-concept of honesty. However, if the external benefits become extremely high, it is possible for the individual to ignore their moral self-concept and choose to make a dishonest decision (Mazar & Ariely, 2006; Mazar, Amir & Ariely, 2008). Therefore, in decisions about dishonesty, the individual takes into account not only the external rewards, the probability of being caught and the magnitude of the punishments, but also how the dishonest act causes him to change his own perceptions and self-concept.

As noted by Mazar, Amir and Ariely (2008), people do not exaggerate dishonesty – the authors call this an "incomplete lie" – just for the sake of maintaining their moralityandself-concept. In line with these findings, Fischbacher and Föllmi-Heusi (2013), in a simple die-rolling, found that the participants reported values greater than those shown, in order to increase their individual remuneration.

Thereby, some research has found that dishonest behavior is not always based on the maximization of profits, but rather that individuals are willing to refuse monetary benefits to behave in an extremely dishonest manner (Abeler, Becker & Falk, 2014; Cappelen, Sørensen & Tungodden, 2013; Erat & Gneezy, 2012; Fischbacher & Föllmi-Heusi, 2013; Glätzle-Rützler & Lergetporer, 2015; Gneezy, 2005; Gneezy; Rockenbach & Serra-Garcia, 2013; Kröll & Rustagi, 2016; Lundquist, Ellingsen, Gribbe & Johannesson, 2009; Mazar & Ariely, 2006; Mazar, Amir & Ariely, 2008; Santos, 2011; Ariely, 2012).

However, recent researches begun the study on dishonesty in groups (e.g. Baeker & Mechtel, 2015; Chytilová & Korbel, 2014; Conrads *et al.*, 2013; Muehlheusser, Roider & Wallmeier, 2015; Sutter, 2009). Group decisions add a number of variables to the problem of

dishonesty: the first relates to the aggregate of individual preferences, yet the individuals may not have preferences that are completely aligned, but in the end, the group will make only one decision (Kocher, Schudy & Spantig, 2017). Second, the group configuration may bring up social aspects that are relevant, such as whether rewards are standardized or not within the group, whether there is a possibility that one member may hide behind another, or even the social concerns.

Wiltermuth (2011) showed that people are prone to deceive others when the benefits of doing so are divided with other people, even though they are unknown. Schweitzer and Hsee (2002) pointed out that people more readily justify their lies when others can benefit from dishonest behavior. Gneezy (2005) found that individuals tricked more often the greater the reward for lying and the lower the loss for the deceived person.

Similarly, Mazar and Aggarwal (2011) have shown that, when individuals are embedded in a group, that is, their decisions are based on a collectivist mentality, they tend to behave more unethically (e.g. offering bribes), that they feel less responsible for their own actions. Thereby, committing dishonest acts seem to be easier in a group than individually because of the diffusion of responsibility, that is, the probability of cheating increases when unethical behavior is obscured (Bandura, 2014; Bandura, Barbaranelli, Caprara & Pastorelli, 1996). Some experiments show that, on average, individuals, when inserted in a group, show higher levels of cooperation (Chen & Li, 2009) and lower levels of punishment (Mussweiler & Ockenfels, 2013).

Based on existing studies, one can expect the groups to present more dishonest behavior than individuals for at least three reasons: first, the groups generally reason more than individuals (Kocher, Strauß & Sutter, 2006; Kocher & Sutter, 2005), that is, when they are involved in some collective work, members learn faster not only the characteristics of a given experiment being tested, but also in business life; they learn faster the characteristics of a given sector (e.g. enforcement, punishments), making them more susceptible to dishonest behavior (Sutter, 2009).

Second, groups may be more dishonest, as it may be easier to disguise lies within a group compared to the individual, that is, psychologically, it may be easier to be dishonest in a group, because such a configuration promotes the diffusion of responsibility among its members (Conrads *et al.*, 2013).

And third, recent researches suggest that groups may be more dishonest because other individuals may also benefit from dishonest behavior (Gino, Ayal & Ariely, 2013; Weisel & Shalvi, 2015; Wiltermuth, 2011; Schweitzer & Hsee, 2002). That is, when the dishonest act benefits oneself and can benefit other agents too, the individual can justify the lie more easily, since, after all, he is doing something "good" for another member of the team, such as is the case of Wiltermuth's research (2011).

Based on the research of Kocher, Schudy and Spantig (2017), Sutter (2009), Conrads *et al.* (2013), and Fischbacher and Föllmi-Heusi (2013) who claim that individuals are more likely to be dishonest when inserted into a group than individually, the following research hypothesis was elaborated:

 \mathbf{H}_1 : Individuals are more dishonest when interacting with a group than individually.

2.3 Experimental Design

The experiment was based on the die-rolling test of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017) and is divided into two stages. At each stage of the experiment, the participants watched a die-rolling on the computer screen. In the next screen, the participant should inform the number seen in the dice, choosing a number

from 1 (one) to 6 (six). The amount of points earned is linked to the number that the participant informed, and not to the real number launched (respondents will receive the same amount of points that they report), for example, if the respondent reports that the dice presented the number 3 (three), he will earn 3 (three) points. The number of points awarded corresponds to the number informed, and not to the number of the dice observed, giving room for dishonesty. Each point obtained is equivalent to BRL 1.00 (one real)¹. In this way, the respondents can put any number between one and six, thus with the possibility of being dishonest.

In the first stage of the experiment, the participants made their choices individually, that is, each participant watched the video with the die-rolling and answered the number without contacting any other person. At this stage of the experiment, the objective was to evaluate each person's dishonesty, individually, when they might take advantage of the rules and from the number reported. This is similar to the bonus that company executives receive, associated with the profit made: regardless of the actual number of profits that the company presented in a certain period, the executive can manipulate the real profit and disclose a fictitious profit, so that, he can pocket a higher value .

In the second stage of the experiment, the influence of the group on the dishonesty of the individual was analyzed. For this, Kocher, Schudy and Spantig (2017) experiment was adapted, in which the participants were randomly divided into two groups: *GroupPC* and the *GroupNoPC*, as will be explained later. The order of the experiment (first individually, then in group) was chosen because it resembles day-to-day decision-making: initially, each person internalizes its behavior before making a collective decision. Table 1, illustrates the design of the experiment:

Table 1: Design of the first experiment

	Part 1	Part 2		
Treatments	Individual	GroupPC		
	marviduai	GroupNoPC		

Source: prepared by the authors.

The participants randomly chosen by the system to compose the groups were divided into groups of three people and each watched, on their own computer, the same video with the die-rolling (so they all watched the same number). After watching the video, the group with the three participants had two minutes to discuss in an online chat. The chat allows free communication between participants without revealing their identities, allowing all members of the group to interact at the same time. The group interaction proposed in this part of the experiment resembles the collegiate decisions that are taken not only in Boards of Directors, Corporate Governance and Ethics Committees, but also to those who carry out the daily life of companies: in general, major decisions adopted by companies are not individual meetings, but through various stakeholder meetings.

After the chat conversation, each participant reported the value observed in the dice, individually, on the computer screen. The focus will be about the form of remuneration of the participants: those who selected to participate in the *GroupPC* will only receive if all the members of the group inform the same value, regardless of the actual release of the dice. If at least one member of the group reports a different number, all three members receive zero points. That is, the members of the *GroupPC* will only pocket the money if all the members of the group inform the same number, regardless of the actual release: even if the dice has

¹ To illustrate, at the time this the experiment was conducted, each BRL 1.00 equaled, on average to USD 0.31. And the minimum wage in Brazil corresponded to BRL 937.00, equivalent to USD 288.31.

informed the number 3 (three), if all the members of the *GroupPC* inform 6 (six), everyone will receive 6 (six); but if two members answer 6 (six) and only one inform 3 (three), everyone will receive 0 (zero) points.

The difference between *GroupPC* and *GroupNoPC* resides in the form of remuneration given to the participants: even if there is group interaction, in the *GroupNoPC*, each participant will receive the amount reported, regardless of the number that other members of the group have reported. That is, members of the *GroupNoPC* will receive their remuneration independently from the values reported by the other members of the group: if two members inform 3 (three) and the other inform 6 (six), in that group category, each participant will receive the amount reported in the system, regardless of the others.

As a matter of fact, there are two stages in the experiment that has the purpose to investigate the influence of the collective in the dishonesty of each individual: does the individual become more or less honest when his decision can influence the whole group? And when this decision does not influence the others, will only the influence of the group impact the decision in terms of honesty?

Before starting the experiment, each participant answered personal questions, such as gender, study institution and family income, in order to obtain an overview of the respondents. During the experiment, each participant used a separate computer and no communication was allowed, except through the chat environment. Before each stage of the experiment, instructions were displayed on the computer screen for participants. In addition, a set of on-screen control questions ensured the understanding of the game: each stage only started after the participant answered the control questions correctly. Participants could fail repeatedly and the Applicator of the experiment was allowed to provide explanations.

At the end of all stages of the experiment, the last screen showed the participant his identification code, how many points he got throughout the game, and the amount (in reais) of money pocketed. In each table, there was a paper with three blank spaces to be filled with information of the participant. Therefore, at the end of the experiment, each participant filled out the paper with the data reported in the last screen of the experiment, took the paper to the Applicator, who then delivered the corresponding amount. In this way, dishonesty can be verified in three different moments: a) in the first stage of the experiment, in which the participant played individually; b) in the second stage, after the interaction with the group; and c) in the third stage, when the participant puts in the paper the points and corresponding amount (in reais) to be earned at the end.

Table 2 summarizes the stages of the experiment:

Table 2 : Stages of the first experiment

PHASES	DESCRIPTION					
	Instructions are given to participants to guide them in the					
General Instructions	experiment, such as payment, anonymity and chat interaction.					
Questionnaire	The participants answer a questionnaire with personal					
Questionnaire	information, such as age, study institution, family income.					
PART	1 OF THE EXPERIMENT					
	Instructions about the next stage of the experiment and they					
Instructions	must respond correctly if they understood the given guidelines.					
	Participants watch (individually) a video with the die-rolling. In					
Die-Rolling	this stage, the video was the same for all the participants,					
Die-Kolling	presenting the number 3 (three).					
Decision making	The participants individually report the result of dice,					
Decision making	considering that the remuneration is tied to the number they					

report.						
PART 2 OF THE EXPERIMENT						
Instructions	The system automatically and randomly divides the participants into two groups (<i>GroupPC</i> and <i>GroupNoPC</i>) and sends instructions about the next step to each participant, taking into account the type of group they are inserted. Participants should also inform if they understood the task to be performed.					
Die-Rolling	Participants watch (individually) a video with the dierolling. Members of the same group watch the same video. Also in this step, the video is the same for all participants, presenting the number 1 (one).					
Instructions for group interaction	Participants received instructions about how the chat will work, such as the time they would have to talk and the prohibition of identifying themselves.					
Group interaction	Participants interact in a virtual chat, without identifying the other members of the group.					
Decision making	The participants individually report the result of the data entry, considering that the remuneration is tied to the number they have informed and the group in which they are inserted.					
FINAL PART						
Payment	The participant is informed of the sum of points and the amount in reais earned at the end of the experiment. The participant writes it down on the paper and delivers it to the Applicator to receive the corresponding remuneration.					

Source: prepared by the authors.

The sessions of the experiment were carried out in the laboratory of the Federal Fluminense University, Volta Redonda campus, in the state of Rio de Janeiro, due to the accessibility, during the period of May 25th, 2017 to June 8th, 2017, with undergraduate students of the courses of Accounting, Administration and Public Administration.

Data were collected in 19 rounds, with 310 participants in total. However, only 250 responses were used in the research, due to problems presented, such as internet connection, which made it impossible for some participants to complete the experiment, and participation in the non-multiples group of 3: how the system formed groups with three participants exactly. When there were groups that was not multiple of 3, the system discarded the other participants and they only participated in the first stage of the experiment. Of the students enrolled in the Accounting course, data were collected from 72% of the students, and 58% of them were used.

Each session lasted about 30 minutes (each participant took, on average, 8 minutes to complete the experiment) and the income spent was BRL 1,562.00, an average of BRL 5.68 for each participant. The experiment was programmed and conducted through a software specially created for this research, through the link http://experiment-c10ad.firebaseapp.com.

After the conclusion of the experiment, the conversations were also analyzed during the chat between the participants: they were divides by the groups (*GroupPC* and *GroupNoPC*) and elaborated wordclouds, through the site www.wordclouds.com. The purpose was to verify the expressions used by the respondents during the conversations, and which were used the most.

In addition, the McNemar statistical test was performed in order to compare the two samples and to verify if individuals are more dishonest when making group decisions than

individual ones. The choice of this test was due to the fact that it was composed of paired samples (for that reason the non-use of the Chi-Square test, despite the similarity) with categorical variables: the individuals were honest or dishonest. For this, IBM SPSS® software, version 20, was used.

2.4 Results

In the experiment, the two die-rolling tests were the same for all participants: in the first stage, the dice always presented the value 3 (three), and in the second, always the value 1 (one). Thus, the individuals considered honest were those who presented a total of 4 (four) in their answers. No individual presented a value less than 4, nor greater than 12, because it was not allowed, since the system blocked the response by a maximum of 6 per stage.

Of the 250 valid answers, 138 individuals were honest, that is, 55% of the participants reported 4 in the sum; therefore, 112 individuals were dishonest (45%). Of the 112 dishonest participants, most of them, 38% received the amount of BRL 9.00, according to the table below:

Table 3: Overview of dishonest people

Sum of points	Number of respondents	Percentage
5	10	9%
7	19	17%
8	8	7%
9	42	38%
10	3	3%
11	5	4%
12	25	22%
Total	112	100%

Source: prepared by the authors.

Of the 42 people who answered 9 points, only 1 reported 4 in the first stage and 5 in the second: all others were honest in the first step, reporting 3, and the maximum of dishonesty in the second stage, reporting 6. This result is consistent with previous researches (Kocher, Strauß & Sutter, 2006; Kocher & Sutter, 2005; Sutter, 2009; Conrads *et al.*, 2013; Gino, Ayal & Ariely, 2013; Weisel & Shalvi, 2015; Wiltermuth, 2011; Schweitzer & Hsee, 2002) which claim that individuals may be more dishonest in group than individually due to factors such as faster learning when engaged in some collective work, ease of disguising lies and the ability to benefit others with dishonest behavior. Table 4 helps to understand the results:

Table 4: Matrix of responses – first experiment

	Honest – part 2	Dishonest – part 2
Honest – part 1	138	54
Dishonest – part 1	54	37

Source: prepared by the authors.

In addition, of the 112 people who were dishonest in this experiment, a part of them (54 people) were honest in the first stage, when they participated individually, and dishonest when interacting in a group. Another interesting fact relates to the individuals who reached the maximum level of individual dishonesty: those who reported 6 in the first stage of the

experiment, 34% (16 people) were honest in the second stage of the experiment, when they play in group.

When comparing the results of the first stage of the experiment (when the participants made the decisions individually) with that of the second part (when the decision was taken in a group), it was verified that there was an increase in group dishonesty when confronted with individual decisions: 36% of people were dishonest in the second stage versus 23% dishonesty in the first part.

Verifying whether this 13% increase in dishonesty when individuals make their decisions in a group is statistically significant compared to the individual level. The McNemar test for dependent samples was performed, as can be seen from the data in the table below:

Table 5: McNemar statistics – first experiment

Frequency	Individual	Group
Honest	76,8%	63,6%
Dishonest	23,2%	36,4%
Chi-Square	13,653	
McNemar test	0,000	
N of valid cases	250	

Source: prepared by the authors.

As McNemar's test presented a value lower than 0.05, this indicates that the null hypothesis of the test can be rejected, indicating that the increase in dishonesty seen in the frequency (from 23% to 36%) is really significant: the individuals analyzed in this experiment were more dishonest when they decided in group than individually.

The experiment was performed in 250 people, 49% were women and 51% were men. Of the 122 women who participated, 45% were dishonest versus 44% men.

Regarding the groups, 110 people (44%) participated in the *GroupPC* and 140 (56%), of the *GroupNoPC*, taking into account that the group was randomly chosen by the system. Of those who were in *GroupPC*, that is, all members of the group should report the same amount to receive, 48% were dishonest compared to 52% honest. In the *GroupNoPC*, 42% were dishonest, compared to 58% honest. Despite the small difference between the two groups (6%), it can be seen that the members of *GroupPC* were more dishonest than the members of the *GroupNoPC*, that is, when participants had to interact more, they only receive compensation if all members matched to inform the same release value (*GroupPC*), they were more dishonest than when the combination of the members was not needed for the payment (*GroupNoPC*).

The McNemar test was also applied to the sample, in the categories gender, income and group type, *PC* or *NoPC* and the data are described in Table 6:

Table 6: McNemar statistics by category – first experiment

Frequency	Men		Women		Income ≤ 5,000		Income > 5,000		GroupPC		GroupNoPC	
	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2
Honest	78,1	60,9	75,4	66,4	76,5	63,1	77,5	64,8	77,3	62,7	76,4	64,3
Dishonest	21,9	39,1	24,6	33,6	23,5	36,9	22,5	35,2	22,7	37,3	23,6	35,7
McNemar		0,000		0,108		0,001		0,078		0,017		0,006
N		128		122		179		71		110		140
Cochran'Q		0,000		0,078		0,002		0,050		0,108		0,007

Source: prepared by the authors.

In all the classifications, there was an increase in the dishonesty of the individuals, however, statistical significance was found only in the categories men, individuals with incomes less or equal BRL 5,000.00 and in the groups (*PC* and *NoPC*), indicating that the

people inserted in these categories were more dishonest when they decided as a group rather than individually.

In addition, some of the participants' reactions were interesting: **a)** because of connection problems, one participant was unable to participate in the second stage of the experiment; because of this, she got into confusion with the Applicator because "she had made little money"; **b)** 3 people showed regret that they had been dishonest at the time of receiving the money, but even so, they received the amount they reported; **c)** a participant had informed a 9, received the value, and after about 5 minutes, came back to the room and returned the difference (BRL 5.00) because he "felt guilty"; **d)** two people did not want to receive the money (they had been honest in the answers); **e)** most of the people believed that the experiment was about negotiation and persuasion strategies, not dishonesty (it was not reported that the experiment was about dishonesty so that there was no interference in the responses; it was reported that the experiment was about decision making); **f)** the participants justified dishonesty in different ways: "it was strategic"; "if I could win 12, why not?"; "it was at the end of the month and I was broke."

Through the analysis of the conversations in the chat, it was possible to elaborate a wordcloud, separating in the groups *PC* and *NoPC*:

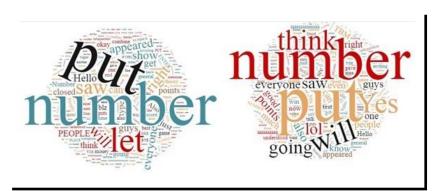


Figure 1: Wordcloud first experiment- *GroupPC* and *NoPC*

The *GroupPC* is characterized by the group in which the participants must put the same number displayed by the dice, otherwise they receive no points in the round. Through the wordcloud formed by the conversations carried out by the respondents of this group, a strong agreement among participants is seen in relation to the number they will put, through the predominance of the words "let", "put" and "number". Thus, it is possible to identify that there were agreements to choose the number to be informed by the participants, possibly with the intention of an all-win scenario.

In the *GroupNoPC*, although the words "number" and "put" have also occurred, it was possible to verify more verbs in singular than in plural: possibly this phenomenon is due to the fact that, in this category, the participants did not have to enter the same number displayed by the dice, since they would earn money according to the numbers informed.

In addition, some excerpts of dialogues have been removed from the chat: **a**) "because, in a company you can put anything in the balance, but you lose the credibility, right?!"; **b**) "nobody afterwards complain about corruption"; **c**) —"let's put 6"—"and ethics?" (laughs); **d**) "I chose 6 for the dice, and you?"; **e**) —"guys, I understood the test"—"me too, it is about honesty"—"yes, but there is a detail"—"must talk about the fame of the accountant to be corrupted"—"let's not talk here"; **f**) "I do not know if it's a 'character' test".

Here is the summary of the experiment:

a) Number of participants -310

- b) Number of usable data (sample) 250 (only the respondents who went to the second phase of the experiment were used, if the number of people in the room was not a multiple of 3, the system discarded the remaining ones, in addition there were problems with internet connection, which made it impossible for some participants to conclude the experiment);
- c) Number of dishonest people 112 (45%)
- d) Average amount received BRL 5.68
- e) Average amount received from the "dishonest" BRL 9.02
- f) Average time taken to complete the experiment, per participant 8 minutes
- g) Average attempts to understand the experiment, per participant -2
- h) Total amount spent BRL 1,562.00
- i) Extra amount spent due to dishonesty BRL 562.00.

2.5 Conclusions

The standard economic approach suggests that individuals are dishonest if the pros (especially financial ones) outweigh the cons (punishments). However, the results obtained from this experiment showed that the decision regarding dishonesty takes into account internal factors of each person, retaining their moral self-concepts.

The results of the experiment showed that less than half (45%) of the individuals were dishonest, although they had the opportunity to do so without suffering any kind of punishment and with their identities preserved. This shows that the decision on dishonesty may not be taken rationally, maximizing gains over costs but rather, consistent with the research of Mazar, Amir and Ariely (2008), Mazar and Ariely (2006) and Ariely (2012), that individuals believe in their own morality and seek to maintain the idea of their self-concept, even though they lose financial benefits to maintain their positive self-concepts (Harris, Mussen & Rutherford, 1976).

Although individuals generally behaved more honestly than dishonestly, when confronted with the two stages of the experiment, individuals were found to be more dishonest in groups (36%) than individually (23%), which corroborates the research hypothesis in which individuals are more dishonest when making decisions in group than alone. These findings are in line with previous researches that found that groups present more dishonest behavior than individuals (Kocher, Strauß & Sutter, 2006; Kocher & Sutter, 2005; Sutter, 2009; Kocher, Schudy & Spantig, 2017; Conrads *et al.*, 2013; Fischbacher & Föllmi-Heusi, 2013).

Possible justifications for presenting more honest rather than dishonest behaviors may have been observed as a result of learning: since the experiment was carried out in a single university, students may have communicated with each other and the following participants have already done the experiment with an idea of what it was about. Moreover, in some rounds, the Applicator of the experiment was a teacher of the department which may have inhibited participants from responding dishonestly, for fear of suffering some kind of punishment or being discovered.

One of the limitations of this research concerns its own design: as in the first stage of the experiment, the number seen in the dice was 3, and in the second stage, when the participants played in groups, the dice showed the number 1, this could have done with the participants being more dishonest in the second part than in the first. That is, the increase of dishonesty in the second part may have happened due to the increased benefit of dishonesty and not necessarily by the group element. One of the possibilities of verification would be to carry out a new experiment where half of the participants received 3 in the first part and the other half receives 1, to verify if there would be change in the dishonesty. However, the

analysis of the extracts of the conversations carried out in the chats and the elaboration of the wordclouds support the hypothesis that the group component influenced the decisions of the individuals in which they combined the number that they would inform, aiming at the maximization of the payoff.

For future researches, it is recommended that this same experiment be expanded not only in other courses but also in universities from different regions in order to provide an overview of the dishonest behavior of Brazilian students (future decision-makers in companies), especially when they interact in a group. Another suggestion is also to increase the number of people in each group so that the experiment might resemble the decision-making in real-life companies, because in the real life, the number of people engaging in dishonesty acts can vary greatly. In addition, the proposed experiment model can be enhanced by including possible dishonest elements (the influence of a leader) as well as inhibitors (auditing).

The results presented in this paper reinforce the idea that, both in groups and individually, internal considerations are important when making decisions about dishonesty. This can help to understand the motivators that lead people to be dishonest as well as to seek mechanisms that are capable of inhibiting this behavior.

3 THE INFLUENCE OF THE LEADER IN THE BEHAVIOR OF THE GROUP

The study of the role of leadership within companies has become a challenge to be addressed in order to understand behavioral phenomena within a corporation. A number of corporate corruption scandals have surfaced in the media recently involving not only company officials but also senior officials. Knowing that leadership has a fundamental role of influence in its leaders, the objective of this research was to analyze if the existence of an individual in a situation of superiority (as a boss or a leader) would influence the dishonest behavior of a group. For this, an experiment was carried out with 180 students, in November 2017 at the University of Brasília, based on the works of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2016). In the experiment, the participants should inform the number shown by the data, and their remuneration was tied to the number informed and not to the number seen, making dishonesty possible. First, the respondents made decisions collectively, and second, under the influence of a leader, whose pay was doubled before the others. The results found that individuals were more dishonest when they were under the influence of a leader (44%) than when they were not (36%). Although the research has some limitations, such as the leader's random choice or even the absence of a coercive mechanism on the other participants, it is proposed to be an initial step in the search for understanding the role of the leader in the dishonest behavior of individuals.

3.1 Introduction

The study about leadership in business has become a challenge to be addressed in order to understand the behavioral phenomena that occur in an organization. Regarding leadership, in the areas of administration, sociology, psychology and anthropology, several researches have been conducted in order to understand its effects on organizations (Katz & Kahn, 1978; Yukl, 2002; Bass, 1990; Siqueira & Amaral, 2006; Lucas, Diener & Suh, 1996; Sparrowe & Liden, 1997; Mueller & Lee, 2002).

The concept of leader can be understood as the person who has great responsibility, able to solve problems and balance the different personalities that reside in a work environment, through their experience and knowledge (Cooke, 2000). Because of this connection between leader and led, the psychological well-being of employees is associated with the management model adopted by the organization, that is, the company's human capital is under constant influence of its leaders, whether these are positive or negative influences.

Yukl (2002) understands leadership as a process of mutual influence between leader and led, the actions taken by both the leader and the ones led are the basis of a mutual relationship in which both are influenced. Being the people responsible for deciding, creating and innovating within a company, the continuous investment in the human capital of organizations, in relationships and interpersonal exchanges is of vital importance.

For a company to be considered ethical, it is necessary for its employees to perform ethical actions. If the leader is able to influence his/her employees, it is imperative, for a company that seeks transparency in its processes, to have ethical leaders (Sá, 2001).

Recently, a number of corporate corruption scandals have become prominent, especially through unethical practices taken by top corporate executives. Internationally, cases

such as Enron, WorldCom, Volkswagen, Deutsche Bank and WalMart have an impact not only on the industry but also on the local economy. The Brazilian case involving large companies like Petrobras, Furnas and companies in the construction industry (e.g. OAS, Odebrecht, Queiroz Galvão) not only damage the advancing in several national projects, especially connected to infrastructure, but also affects the politics and unemployment in the country. All these corruption scandals have in common the fact that these dishonest attitudes were not committed by a single individual but by a group of members of the company, in which, in many cases, were the ones leading.

In the international literature, there are studies on dishonesty committed by groups of people (Charness & Sutter, 2012; Sutter, 2009; Kugler *et al.*, 2007; Fischbacher & Föllmi-Heusi, 2013; Kocher, Schudy & Spantig, 2017), but none that puts the leader on the spotlight.

Against the recent scandals of corruption involving companies, in which are involved several people in the company, including the leaders, and knowing that the leadership has a key role of influence in their team, the following research problem arose: What is the influence of the leader about the dishonest behavior of the groups?

Thereby, the purpose of this research is to analyze whether the existence of an individual in a position of superiority (e.g., boss or high executive) would influence the dishonest behavior of a group. To achieve this objective, the methodology of die-rolling, suggested in the studies of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017) will be used and adapted. In previous work on dishonesty, none of them tested the leader's element and his possible influence on the decision of the others, which makes this research substantially different from the others.

This paper is structured as follows: the next section presents the theoretical foundation, regarding the concepts about the Theory of Marginal Utility, Prospect Theory and organizational financial fraud; then the research methodology, the details of the experiment and its stages, as well as the sample composition; then the results of the study are presented; and, finally, the conclusions.

3.2 Literature Review

In the XVIII and XIX centuries, scholars emerged with the desire to research the effect of psychology on finance, but it was only in the XX century, on the occasion of the Neoclassical Revolution, that it took place. Thereby, there are three main Theories of Finance: a) The Traditional Theory of Finance (TTF) which consists of the understanding that the market is irrational and the efficient investor is the one with speculative vision and invests in assets that provide above average returns; b) Modern Finance Theory (MTF), also known as Neoclassical, has the assumption that the man is rational, uses quantitative tools to prove his studies and relies heavily on the Theory of Marginal Utility and The Theory of Efficient Markets; and, at last, c) Behavioral Finance Theory (BFT) based on the idea that man is not completely rational, instead, much of his decisions are irrationally made, influenced by emotions and cognitive errors.

As stated, MTF has as its basic assumption the view that man decides rationally (Von Neumann & Morgenstern, 1944) and his studies are based on the Theory of Marginal Utility. According to this theory, the value of an item is not determined by a price, but by the its utility, and this can be different for individuals. Moreover, based on this theory, the agent makes the risky decisions through a rational analysis, being risk averse and seeking to maximize the expected utility (Bernoulli, 1954). In this way, the investor will always make rational decisions aimed at maximizing the usefulness of the item.

However, even the classical scholars of the Modern Theory of Finance were already challenging the full rationality advocated by the model (Von Neumann & Morgenstern, 1944;

Damodaran, 2006), noting the frequency with which speculative bubbles have appeared in the market and the resulting collapses. Therefore, the authors suggest the existence of other phenomena in the markets that cannot be explained by the premise of rationality (Ferreira, 2016).

Simon (1957) was one of the pioneers in the study of limited rationality: he proposed the idea of replacing the maximization of utility expected by a truer view of human capacity, considering the complexity of decisions made by individuals and companies. Based on these assumptions, Kahneman and Tversky (1979) developed the Prospect Theory, being a landmark for the Economy and for the Behavioral Finances.

In Prospect Theory, when an individual needs to make a decision that involves risk, it goes through two phases of thinking: editing (in which information is deciphered and simplified) and evaluation (in which the alternatives are compared and the one with larger value is chosen). However, the decision-making process is influenced by the preferences of the individual, which causes anomalies in their decisions (Kahnemann & Tversky, 1979). While the expected results in the Theory of Marginal Utility can be weighted by their probability of occurrence, Prospect Theory reveals that individual preferences violate this axiom and this result can be altered by a series of anomalies.

Kahneman and Tversky (1979) then carried out a study presenting two problems in which situations presented similar solutions by the theory developed by Bernoulli (1954), since the "expected value" in both cases was equivalent. However, the authors realized that people in general are averse to risk in the case of gains and bet on the risk in case of losses. That is, people feel more the pain of loss than pleasure with an equivalent gain (Melo, 2014).

The Prospect Theory, therefore, brings out three points which violate the axioms of theory marginal utility: the first is that individuals' decisions are taken on the basis of profit and loss, and not from the equity variation; second, the utility function is concave with respect to gains and convex with respect to losses (the graph of the value function is represented by an asymmetric function in S); and, finally, individuals feel more the pain of loss than the pleasure of gain.

Thus, through traditional economic theory, the individual would commit dishonest acts based on the maximization of marginal utility, taking into account aspects such as the benefits of dishonest behavior, punishments, and the risk of being caught (Becker, 1968). These assumptions consider only external aspects to the individual, however, the psychology, the sociology and behavioral economics also consider internal aspects as influencing the decision making of individuals, about dishonesty. Nowadays, the current legal system is based on the Theory of Marginal Utility, which considers factors to inhibit corruption and fraudulent acts, increased detection or applicable punishment, being more effective in increasing detection than in punishment (Nagin & Pogarsky, 2003; Melo Segundo, 2016).

Recent studies (Mazar & Ariely, 2006; Mazar, Amir & Ariely, 2008; Ariely, 2012) have shown that individuals have self-concepts about self-honesty, which is taken into account when making decisions. That is, even if the proposal meets the assumptions of modern economic theory (great benefits by fraud, no probability of being detected or low punishment) people do not cheat to the fullest, for they respect an existing threshold internally of their own view of honesty. This behavior is similar to that described by Freud about the part of the brain called Superego, which represents the social norms within the mind of each individual, capable of punishing or rewarding him for each attitude (Mazar & Ariely, 2006).

The literature is rich in relation to the study of individual dishonesty (Mazar, Amir & Arely, 2008; Mazar & Ariely, 2006; Gino, Ayal & Ariely, 2013; Santos, 2011; Castillo *et al.*, 2014; Lima, Avelino & Cunha, 2017; Tomazelli, 2011; Abeler, Becker & Falk, 2014; Ruffle & Tobol, 2014; Lewis, Bardis, Flint, Mason, Smith, Tickle & Zinser, 2012; Lundquist *et al.*, 2009; Childs, 2012).

Internationally, authors have verified that people behave more dishonestly in a group than individually (Baeker & Mechtel, 2015; Chytilová & Korbel, 2014; Conrads *et al.*, 2013; Muehlheusser, Roider & Wallmeier, 2015; Sutter, 2009; Fischbacher & Follmi-Heusi, 2013; Kocher, Schudy & Spantig, 2017) and factors such as the division of responsibility (Wiltermuth, 2011; Mazar & Aggarwal, 2011), likelihood of benefitting other individuals (Schweitzer & Hsee, 2002) and the decrease in loss for the deceived person (Gneezy, 2005) influence dishonest behavior. There are few researches about this theme and none about the leader worldwide.

With the growing corruption scandals in companies, involving groups of people, and given the still incipient research in the literature on collective dishonesty, it is necessary to study this. In addition, no research has been found that analyzed the influence of the leader in this dishonest behavior, however, it is important to verify this factor, since the leader has power to interfere over the other members of an organization.

With more than a century of scientific research about this theme (Bass, 2008) and being one of the most studied topics in Social Sciences (Day & Antonakis, 2012), leadership is present in several everyday scenarios, not only in companies, as well as in schools or in any social groups. Therefore, studying the role of leadership in social dynamics is of fundamental importance for understanding collective achievements (Turano & Cavazzote, 2016), especially as it is fundamental in creating value for companies (Schein, 2007) and in the execution of strategies of the organizations (Kotter, 2001).

According to Burns (1978) there are more than 130 different definitions of leadership. However, there is consensus on some aspects that characterize leadership (Turano & Cavazzote, 2016): a) dynamic interaction between leaders and followers; b) a process of influence; c) promotion of some degree of transformation in a given social context; and d) the pursuit of specific goals or objectives. That is, leaders are able to influence the ones they lead to achieve the desired goals, either honestly or dishonestly.

The leader figure has the power to influence people, whether positively or negatively, and the dishonest decisions made by members of a company are responsible for the growing corporate corruption scandals. Knowing that decision making is not something purely rational and this process suffers from anomalies arising from the preferences of each individual, the following research hypotheses are presented:

H₂: Honesty of the group is influenced by the presence of the leader.

3.3 Experimental Design

To achieve the objective of the research, which consists of analyzing if the existence of a leader influences the dishonest behavior of a group, the experiment will be used and adapted, based on a die-rolling test of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017). The experiment is divided into two stages, in which participants watched a video with the die-rolling and given, on the next screen, the number seen. The remuneration of the participants is linked to the number informed and not to the number seen, thus enabling them to be dishonest in their responses.

Throughout the experiment, the participants were divided into two types of groups, each consisting of three people: *GroupPC* and *GroupNoPC*. The difference between the groups consists in the form of remuneration: those who belong to *GroupPC* must inform the same number of the dice; if at least one member reports a different number, all other members of the group earn zero points. In *GroupNoPC*, the remuneration is individual, that is, each participant earns the amount reported, regardless of the <u>answer</u> of the other members of the group.

In the first stage of the experiment the individuals observed, on the computer screen, the die-rolling and then had two minutes to talk with the other members of the group through an online chat. Later, they informed the number, taking into account what was spoken during the chat. At no time were the participants allowed to identify with the other members of the group or to mention any information that facilitated the identification.

In the second stage of the experiment, the members of the group remain the same, however a member has been chosen by the system, randomly, as the leader of the others. The leader has received information on this position and also about his/her differentiated remuneration (the leader receives double the points he/she reports), however, it will be at the discretion of the leader to comment with the other members of the group about their position and/or remuneration, through chat: members of the group who are not leaders, are aware of the existence of one, but do not know exactly who the leader is; it is up to him to choose whether or not to mention this information to the others. The inclusion of a leader in the group is aimed at verifying whether this individual will encourage or discourage the other members of the group, or if there is any kind of change in their own degree of dishonesty, from the moment that some trust is given to him due to its position.

For exemplifying, assuming there are three members in a group characterized as *GroupPC*, and all group members report the value 5 (five) for a die-rolling, the leader will receive 10 (ten) points, while the other members of the group will receive only 5 (five) points. This differentiated remuneration also resembles the gains that leaders obtained in companies: in general, executives at management positions receive a differentiated remuneration of the other employees, as an incentive to their work.

It is important to emphasize that there are limitations on the figure of the leader inserted in this experiment, because, in the presented context, the leader is assigned randomly by the system: people may not be prepared for this function to end up exercising it, unlike what happens on the day-to-day business, although the lucky element is a possibility in the management of a company (Liu & De Rond, 2016). In addition, the leaders in the experiment also do not have the power to decide on the group, only through persuasion and the other members of the group will only know who the leader is if the leader warns them, these factors could diminish the influence of the leader over his subordinates, a fact that is different from that presented in daily life, so these questions present themselves as a limitation in the design of the experiment.

Table 7 assists in visualizing the design of the experiment:

Table 7: Design of the second experiment

	Part 1 (without leader)	Part 2 (with leader)
Treatments	GroupPC	GroupPC
	GroupNoPC	GroupNoPC

Source: prepared by the authors.

Throughout the experiment, communication between the participants was not allowed (except during the chat). Before each stage of the experiment, the respondents received instructions on the computer screen about the following instructions and also had to answer the questions about understanding the next stage. The participants just had access to the following steps when they respond properly to control questions.

Before starting the experiment, each participant also answered personal questions such as gender, study institution and family income, in order to obtain an overview of the respondents. At the end of the experiment, appeared on the computer the sum of the points that the participant has achieved, its identification code, and the amount, in reais, to be received, being that each point equals BRL 1.00 (one real). The participant then, transcribed this data in the paper located on their desk, hand it over to the Applicator of the experiment

that gave the amount in cash. Thus, the participant sees different opportunities to be dishonest: in the first stage of the experiment, in the second and at the moment of transcription of the amount on the paper.

Table 8, helps in understanding the experiment:

Table 8: Stages of the second experiment

able 8: Stages of the second experiment PHASES	DESCRIPTION						
	Instructions are given to the participants to guide them how to						
Comment Instructions	proceed in the experiment, such as pay, anonymity and chat						
General Instructions	interaction.						
Questionnaire	The participants answer a questionnaire with personal						
	information, such as age, study institution, family income.						
PART 1 OF THE EXPERIMENT							
	The system automatically and randomly divides the participants						
Total of the	into the two groups (GroupPC and GroupNoPC) and sends						
Instructions	instructions on the next step to each participant, taking into						
	account the type of group to which it is inserted. Participants						
	should also inform if they understood the task to be performed. Participants watch (individually) a video with the die-rolling. In						
Die-Rolling	this stage, the video was the same for all the participants						
Dic-Rolling	presenting the number 1 (one).						
	Participants received instructions about how the chat will work,						
Instructions for group interaction	such as the time they would have to talk and the prohibition of						
8 - 1	identifying themselves.						
Carran internation	Participants interact in a virtual chat, without the possibility of						
Group interaction	identifying the other members of the group.						
	The participants individually report the result of dice,						
Decision Making	considering that the remuneration is tied to the number they						
	report.						
PA	ART 2 OF THE EXPERIMENT						
	Participants remain divided into the same group in which they						
	answered part 1 of the experiment, however, one member of						
Instructions	each group is chosen, automatically and randomly by the system, to be the leader. Instructions are given about how to						
	proceed in the next step and respond if they have understood the						
	task.						
	Participants watch (individually) a video with the die-						
D. B II.	rolling. Members of the same group watch the same video. Also						
Die-Rolling	in this step, the video is the same for all participants, presenting						
	the number 2 (two).						
	Participants received instructions about how the chat will work,						
Instructions for group interaction	such as the time they would have to talk and the prohibition of						
	identifying themselves.						
Group interaction	Participants interact in a virtual chat, without the possibility of						
	identifying the other members of the group.						
Designa melana	The participants individually report the result of the data entry,						
Decision making.	considering that the remuneration is tied to the number they inform and the group in which it is inserted.						
	FINAL PART						
	The participant is informed of the sum of points and the amount						
	of reais he received at the end of the experiment. The participant						
Payment	write these amounts down on paper and delivers them to the						
i ujinciit							
	Applicator to receive their remuneration.						

Source: prepared by the authors.

The sessions of the experiment were carried out in the computer lab of the University of Brasília (UnB), Darcy Ribeiro campus, in Brasília, Federal District, as a result of the accessibility, from November 22th to 28th, 2017, with undergraduate students in Accounting Sciences.

Data were collected in 17 rounds, with 180 participants in total, with mean age of 22 years. As the system did not present failures in its execution, all the answers were used in the research. Each session of the experiment lasted about 45 minutes (from the preparation of the experiment, providing instructions to the participants until delivery of the value received), each participant took an average of 15 minutes to complete the experiment.

The total amount spent, in reais, was BRL 1,275.00, an average of BRL 7,08 for each participant. The experience was programmed and conducted through the online software, created especially for this research, and can be accessed through the link http://experiment-parte2.firebaseapp.com.

Afterwards, the conversations that the participants carried out in the chats were also analyzed: the conversations were divided in the groups (*PC* and *NoPC*) and wordclouds were elaborated, through the site www.wordclouds.com. The purpose of making these clouds was to identify the most used words in the dialogues and if these expressions could somehow help in the interpretation of the data.

To test the hypothesis of the research, the McNemar test, a non-parametric test, was performed in IBM SPSS® software (version 20), which aims to analyze, in dependent samples and categorical variables, whether there was a significant difference between the two moments: with and without the influence of the leader.

3.4 Results

In the experiment, all participants watched the same video with the die-rolling: in the first part, the dice presented the value 1 (one) and, in the second part, the value was 2 (two). This means that non-leaders whose total points at the end of the experiment had a value greater than 3 (three) were dishonest in their responses. Leaders, as their score was doubled in the second stage of the experiment, should receive a score of 5 (five) to be considered honest.

The system did not allow the participant to enter a number greater than 6 (the largest number found in a dice), so the maximum dishonesty for non-leader participants was 12 (twelve), and for the leaders participants was 18 (eighteen).

At the end of the experiment, 56% of respondents were dishonest in the answers (101 people) and 44% were honest (79 people). This means that, of the BRL 1,275.00 spent on remuneration to the participants, BRL 615.00 was paid for the dishonesty of the respondents; if everybody was honest, the expense would be BRL 660.00.

When the analysis is performed by each part of the experiment, it is possible to perceive an increase in dishonesty when a leader was inserted in the group: in the first stage of the experiment, when there was still no leader, 36% (65) of the participants were dishonest; in the second stage, with the leader, 44% (80) were dishonest. These data show that the honesty of the group is influenced by the behavior of the leader, indicating that the leader influenced those led, being the basis of this relationship (Yukl, 2002; Cooke, 2000).

Interesting information concerns the 115 participants who were honest in the first stage of the experiment, when in a group, but without the influence of the leader: 31% of them, that is, 36 participants were dishonest in the second stage. Moreover, all these 36 respondents were honest the first stage indicating that the dice had shown the number 1, and were thoroughly dishonest in the second stage, indicating that the dice displayed the number 6, while the same number 2 was presented on the screen. These data were compiled and are included in the Table 9:

Table 9: Matrix of responses – second experiment

	Honest – part 2	Dishonest – part 2
Honest – part 1	79	36
Dishonest – part 1	21	44

Source: prepared by the authors.

In order to test whether the increase in dishonesty from 36% to 44%, due to the presence of the leader, is significant, the non-parametric McNemar test was performed and the following data were obtained:

Table 10: McNemar statistics – second experiment

Frequency	Without leader	With leader
Honest	63,9%	55,6%
Dishonest	36,1%	44,4%
Chi-Square	3,439	
McNemar test	0,063	
N of valid cases	180	

Source: prepared by the authors.

The McNemar test did not present statistical significance (0.063) at 5%. In these cases, where the McNemar test displays a close value, it is necessary to perform another test with a more powerful performance, such as the Cochran's Q test. In doing so, it was possible to verify a p-value of 0.047, so one could reject the null hypothesis of the test and assume that, for the sample surveyed, individuals were more dishonest with the influence of the leader than without this influence.

The experiment was performed in 180 people, 51% are men and 49% are women. Of the 92 men who participated, 62% were dishonest, while 50% of the women were dishonest. Both genders were more dishonest in the second stage of the experiment (with the leader) than in the first, with a dishonesty increase of 11% among men and 6% among women.

Regarding the leader, 32% of the participants performed this function during the experiment and the data showed that 60% of leaders were dishonest in their answers, compared with 40% of non-dishonest leaders.

Considering the groups, 78 people (43%) participated in the *GroupPC*, which is where all the participants must inform the same number of the die-rolling to receive the remuneration, and 102 people (57%) were part of the *GroupNoPC*, where the choice of the group is performed automatically by the system, randomly. Of those who were part of the *GroupPC*, 55% were dishonest compared to 58% of dishonesty in the *GroupNoPC*. Although there were differences in the form of gratification between the groups, the difference was not great, presenting a value 3% higher for the group in which the combination of the value to be informed was not necessary.

The McNemar test was also applied to the sample, in the categories gender, income and group type, *PC* or *NoPC* and the data are described in Table 11:

Table 11: McNemar statistics by category – second experiment

Frequency	en	Women		Income ≤ 5,000 Income :		> 5,000 GroupP		ирРС	PC GroupNoPC			
requency	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2
Honest	60,9	50	67,0	61,4	66,2	56,3	62,4	55,0	64,1	59,0	63,7	52,9
Dishonest	39,1	50	33,0	38,6	33,8	43,7	37,6	45,0	35,9	41,0	36,3	47,1
McNemar		0,110		0,424		0,189		0,243		0,585		0,052
N		92		88		71		109		78		102
Cochran'Q		0,077		0,317		0,127		0,182		0,465		0,034

Source: prepared by the authors.

In addition, some participants had some peculiar reactions: a) a boy wrote down all the stages of the experiment while playing and he said he wanted to know more about the program; b) a girl, when leaving, asked the Applicator if, in case she placed 12, she would win BRL 12.00; when she had an affirmative answer, the girl informed that she should have put 12; c) two girls reported that, if they could, they would return in the next day's rounds only to receive BRL 12.00; d) a boy asked if the experiment was about honesty because he thought about being honest; e) only one person did not accept to receive the money (this person was honest); f) a teacher, who gave up the space of his class for the experiment, was amazed at how people left the laboratory happily; g) a man, who had earned BRL 13.00, waited for the Applicator at the exit to return the money as soon as it knew that the money belonged to the project participants; the Applicator did not accept the return; h) a person entered the experiment to play, outside the hours of the rounds; there was no damage to the data because the system is locked; i) before beginning a round of the experiment, the spacegiving teacher would talk to the students about ethics and they would also discuss about this; a student mentioned that he worked for years in one of the companies that today are involved in corruption schemes in Brazil, and even the CEO is arrested (the student said to be a personal friend of this CEO), but he resigned the company after the schemes were discovered because he did not agree with the money destinations; at the end of the experiment, this same student had put the maximum value of dishonesty (as he was the leader, he received BRL 18.00); j) the majority of the participants believed that the experiment was even about dishonesty (at no time was it informed to them about what the experiment really was, at the risk of influencing the answers, the participants were informed that it was an experiment about decision making); only a few believed that it was about persuasion.

Through the analysis of the conversations in the chat, it was possible to elaborate wordclouds, in which they were separated by the groups, *PC* and *NoPC*:

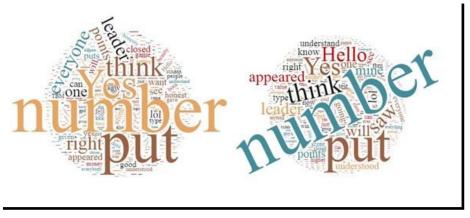


Figure 2: Wordcloud second experiment - GroupPC and NoPC

The *GroupPC* is the group in which the participants must place the same number of the die-rolling, otherwise the group participants receive 0 (zero) points. By the wordcloud formed through the conversations in the chat, it is possible to identify the predominance of the words "number" (being the most mentioned: 54 times) and "leader" (mentioned 16 times). This may indicate a combination of the participants in that group with respect to the number that they will report on the computer, indicating possible agreements between members to inform the same number of the dice and to obtain greater gains in the game. In addition, the words "money" (6 times) and the words "honest" (4 times) and "honesty" (5 times) are mentioned too.

In the *GroupNoPC*, in which there was no need to combine the votes, since each participant would receive the amount of points informed, regardless of the ones chosen by the other members of the group, there was the preponderance of the words "number" (mentioned 84 times), and "leader" (21 times), which also indicates a strong combination of values to be described and the influence of the leader in this combination. In both groups was characterized the union of the members to indicate only a number referring to the die-rolling, and it is possible to observe the predominance of the words "number", "put", "points", "value" and "appeared" in the dialogues.

Additionally, some excerpts from the dialogues made by the participants were taken from the chat: a) "Do you think the game rewards honesty? Or the highest number of points?"; b) "It will be nice is if it is a test of honesty and we take zero"; c) "Do you want to earn money or be honest?"; d) "-and then, we must decide if we say that it is 1 or if it is more, to receive the money. What are we going to choose?" "-I want money!"; e) "-Let's put 6" "-Ok, 6" "-We lose nothing, at most we get more points"; f) "then we should all put 6 because it is worth more"; g) "-We are all corrupt" "-I realize this"; h) "-We combine at 6, again?" "-We have to follow the given task, we cannot think only about the result" "-More or less" "-We can do whatever we want" "-It's a matter of making the same decision" "-It certainly has nothing to do with honesty test" "-I think it does not have any problem being different to the die-rolling" "-That's because: there's no penalty, nor does it affect other people negatively ""-I think what is being tested here is if we make the same decision and if we keep it and also in the explanation, and another in our answer"; i) "I think we have to be honest, we should keep ourselves honest. I am the leader" "-Last group gained less by being honest LOL" "-So, I follow the leader then. Honesty, isn't it?" "-Always, honest people earn less""-We do not disagree, because no one gain anything"; j) "I think that honesty can be part of the game"; k) "I think the idea is to test the will to make money"; I) "-this is a test where you earn more if you lie" "- Let's bet higher?" "-So, 6""-Ok!"; m) "-here's the deal, it is 6 for all stages and it's over"; n) "- as far as I understand, all we have to do is 2 of us to inform the number (6), which is the maximum amount the points and the other report the correct number. And in the end we share everything equally" "-But it would not be honest, right?!" "-I think this is just the proposal" "-I'll go for the correct one then and you will the 6"; o) "-you're sure to get caught, but do you want to see what?" "-The honesty in decision-making"; p) "-let's get the evening snack"; q) "-What is this test testing? Your power to lie? Be honest or not?" "-It's a decision, too."

The extract seen in dialogue (h) expresses an exemplified way what has been shown in previous works: one participant tries to convince others to be dishonest, justifying, mainly, that there is no penalty for their dishonest behavior and that does not penalize them. Bandura (2014), Bandura *et al.* (1996) and Conrads *et al.* (2013) have already identified this type of behavior in earlier researches, claiming that it seems easier to commit dishonest acts in group by the diffusion of responsibility and the possibility of unethical behavior being obscured.

Here are some summary data about the experiment:

- a) Number of participants 180
- b) Average age 22 years old
- c) Number of dishonest people 101 (56%, 36% without the leader, 44% with the leader)
- d) Average total amount received BRL 7.08
- e) Average amount received from "dishonest" participants BRL 9.94
- f) Average time taken to complete the experiment, per participant -15 minutes
- g) Average no of attempts to understand the experiment, per participant 2 in each step
- h) Total amount spent BRL 1,275.00

i) Amount spent more for dishonesty – BRL 615.00

3.5 Conclusions

Unlike the Traditional Finance Theory and the Modern Finance Theory, Behavioral Finance Theory is based on the assumption that people do not make their decisions in a completely rational way, but rather are influenced by emotions and cognitive errors. Within organizations, an important element that is capable of influencing the behavior of others is the leader, not only through their inherent power of persuasion, but also by their position over other collaborators.

The results found in this research identify that when there is a figure of a leader in a group, people tends to take more dishonest decisions than without the leader. When faced with a situation in which dishonesty was an option, 36% of the participants chose to be dishonest when the decision was to be taken in a group, in which all members had the same hierarchical functions in the group. When an element in top position is inserted and this element receives double the remuneration, the percentage of dishonesty people raised to 44% of the total.

These data show that when one individual is in a position of superiority over others (leader), this influences the dishonest behavior of the whole group, making their decisions more dishonest than without his presence. That is, in some way, the existence of a leader influences the other participants, either by the persuasion that it exerts, by the motivation or even by the power of control.

Although research data have shown that a leader's influence interferes with dishonest behavior, this study has some limitations regarding the leadership component: the leader was chosen randomly by the system, which can lead to the choice of someone who is not prepared and/or do not feel comfortable with this position; in addition, leaders also have no coercive power over other participants, which differs substantially from the reality of companies, where bosses have a relative interference by maintaining the employment of their subordinates.

In addition, a study could be conducted with different types of leaders in an attempt to better understand the influence of the leader in the decision making process of the other members of the group. For this, the ideal would be to place three types of leaders: in the first situation, the leader receives the same remuneration as the other participants, that is, there is no difference in the payment; in the second, a similar situation with the present experiment, in which the leader receives double, causing an incentive to the dishonest leaders; and the third situation, in which leaders receive more independent of the informed value, just by being a leader, could encourage honest leaders.

Aware of these limitations, the present research proposes to be an initial step in the search for understanding the role of the leader in the dishonest behavior of individuals, leaving room for future research to fill these gaps and to deepen the findings of this study. Further, possible mechanisms that inhibit the dishonesty can be tested in order to find ways to reduce them in companies and also in society.

4 INHIBITOR MECHANISMS OF GROUP AND INDIVIDUALS'S DISHONESTY

Initially, Becker's (1968) studies found that individuals make dishonest decisions based on the analysis of a rationality tripod, in which they analyze the benefits they would receive from the action, the applicable punishment, and the risk of being discovered. If the benefits outweighed the costs, individuals would commit dishonest acts. However, years later Becker (1993) found that there are anomalies in this process and that these are not analyzed in a purely rational way. Ariely (2012) argues that dishonesty is influenced by self-justifications and by our own self-concepts and recent studies (Pruckner & Sausgruber, 2013; Ariely, 2012; Utikal & Fischbacher, 2013) states that moral reminders would be able to inhibit dishonesty on individuals. In this context, this research sought to verify if control mechanisms, such as auditing and reading the professional code of professional accountant, would be able to inhibit dishonesty. For this, an experiment was applied with 204 students in which they were to make group decisions and, in the second stage of the experiment, participants were exposed to possible inhibitory mechanisms: half of them were informed that they would undergo an audit process, and the other half should read articles in the code of ethics and then make group decisions. The results showed that the mechanisms presented reduced dishonesty to 9% of the participants, as opposed to the initial 27% of dishonesty, without the mechanisms, demonstrating that enforcement mechanisms and moral reminders are able to reduce dishonesty of individuals, even when they are about to make group decisions.

4.1 Introduction

The study of dishonesty has two main paths: the first, based on traditional economic theory and the studies of Becker (1968), is based on the idea that individuals are rational and dishonest acts are committed on the basis of a relation of cost-benefit analysis, supported by the following threefold: the benefits received from the action, the possibility of being discovered and the applicable punishment. However, while believing that individuals are rational, Becker (1993) himself, years later, argued that ethical factors could influence this process.

Thus, the second path, based mainly on the research of Ariely (2012), emphasizes that dishonest behavior is also influenced by self-justifications, that is, concepts that we make of our own honesty that cannot be overcome. Even if the dishonest act satisfy the rational precepts of committing it (high benefits, little risk of being discovered and weak punishment), the individual may not be totally dishonest, as not to hurt the honest self-image of himself.

These two theories are the basis for the study of dishonest behavior, and several researches have been developed to understand the motives that lead individuals to be dishonest (Mazar, Amir & Ariely, 2008; Mazar & Ariely, 2006; Gino, Ayal & Ariely, 2013; Santos, 2011; Castillo *et al.*, 2014; Melo Segundo, 2016; Lima, Avelino & Cunha, 2017; Tomazelli, 2011). Nowadays a series of corruption scandals involving large companies such as Enron, WorldCom, and even Brazilian companies such as Petrobras, Furnas, Eletronuclear and several companies in the civil construction industry are evident. These events reinforce the idea that dishonest attitudes in the corporate world are hardly committed by an individual alone, but by a group of people, and in some cases the top echelon of the company.

To understand the motivators of dishonest group behavior, some international researches have been developed (Charness & Sutter, 2012; Kugler *et al.*, 2007; Sutter, 2009; Bénabou, 2012; Bénabou & Tirole, 2006; Kocher, Schudy & Spantig, 2017; Conrads *et al.*,

2013; Fischbacher & Follmi-Heusi, 2013), but none involving possible mechanisms that inhibit dishonesty.

In order to verify if the insertion of moral reminders would be able to minimize the dishonest behavior of the individuals, the researches reached the same conclusion: the honesty of the individuals tends to appear before moral reminders (Pruckner & Sausgruber, 2013; Ariely, 2012; Utikal & Fischbacher, 2013; Aveyard, 2014; Keizer, Lindenberg & Steg, 2008; Bucciol & Piovesan, 2011; Mullen & Nadler, 2008). Thereby, when conducting group discussions, they may cheat less when facing moral reminders.

With the recent corruption scandals involving companies and based on the theory that moral reminders tend to reduce dishonest behavior, the following research problem arose: Control mechanisms are capable of influencing the dishonest behavior of individuals and groups?

Thus, the purpose of this study is to present how the insertion of control mechanisms, such as auditing and professional ethical norms, would influence the dishonest behavior of individuals in particular, and in a group. To achieve the objective of the research, an experiment based on the data set developed by Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017) was used.

In the following section the theoretical foundation that will approach concepts about professional ethics and previous researches that used control mechanisms as a means to inhibit dishonesty will be presented; below, the methods used are shown are for the development of research, with the description of the experiment applied to the sample and its stages; then the results found in the research are included; and, finally, the final considerations.

4.2 Literature Review

The concept of morality can be understood as values (good or bad, allowed or forbidden) and the correct conduct valid for the members of a society (Chauí, 2002). Every culture and every society has its own morality and there may even be several morals in the same society.

Ethics, therefore, is the "science of human conduct before the being and its fellows" (Sá, 2001, p. 15), within which studies are developed on what is approved or disapproved in the field of virtuous actions. However, ethics and morals are not synonymous: ethics is what should or should not be lived, what is correct, while morality is the set of norms and rules established in a given society, and may vary according to the local culture (Tomazelli, 2011).

Since ethics is of vital importance for the behavior of man in society, then the need to transfer this concept to the reality of business arises, in which professional ethics can be understood as the application of ethics concepts in professional activities (Camargo, 2008).

In the beginning, for Aristotle, the economic was seen as a branch of ethics, which should include all other sciences, for the purpose of the man's well-being (Sen, 1999). At that time, economics was seen as the art of managing the family. However, especially through the consolidation of the capitalist market model, self-interest has been an important feature in economic theory and is therefore considered a rational thought, thus shifting from the ethics and economics, causing a number of shortcomings (Sen, 1999).

Adam Smith (1983), known as the father of modern economics, defended the idea of self-interest. In other words, one must be concerned only with their own interests and that the market is responsible for bringing mutual gains to trade, the wealth of a nation resulted from the action of individuals moved by their own interest. However, Smith was also concerned with the use of ethical principles in business (Sen, 1993; Sen, 1999).

Following the thought of Smith, ethics was moving away from the economy (whichever the idea of self-interest), thus resulting in the criterion called "Pareto Optimality", which consists in finding solutions for certain situations, in which at least one of the agents will be better off without degrading the situation of other agents. That is, at least one of the agents is in a better situation than before (more useful), without reducing the usefulness of the others (no one is harmed). In this way, the "Pareto Optimality" is not necessarily a beneficial solution, from the social point of view (Sen, 1993). Therefore, the modern economy was based on the idea of self-interest and the "Pareto Optimality".

It is possible to affirm, therefore, that a self-interested behavior can possess ethical problems, emphasizing the freedom of choice of the individual. With the intention of mitigating this problem, the teaching of ethics as a reflection in the organizational environment arose in the 1960s in schools in the United States. In this way, the creation of Professional Codes of Ethics was developed, with the main objective of being the formation of the professional awareness of its members about behavior patterns (Tomazelli, 2011).

Each profession has its own specific Code of Ethics, which varies according to its norms and rules and it presents the ideal conduct that each professional should have in the exercise of his profession. The Code of Ethics should support decisions taken in an organizational setting, also aware that every individual should have their own ethical concepts.

The studies by Mazar and Ariely (2006), Mazar, Amir and Ariely (2008) and Ariely (2012) found that individuals have a self-image about their honesty, and they are capable of committing dishonest attitudes, since they do not go beyond the threshold of this ethical self-concept, to the point of feeling like a criminal.

In order to check the influence of the control mechanisms over dishonest behavior, national and international studies about the solution of this problem were developed: Utikal and Fischbacher (2013) conducted an experiment among university students and nuns and found that religious presented a less greedy behavior; on the other hand, Abeler, Becker and Falk (2014) and Ruffle and Tobol (2014) showed that religion has no influence on honesty; Pruckner and Sausgruber (2013) and Ariely (2012) showed that when faced with moral reminders, such as recite the 10 commandments or put the hand on the Bible, individuals presents less dishonest behavior.

In Brazil, Santos (2011) found in the experiment that a moral reminder concerning religion does not significantly affect dishonesty; Melo Segundo (2016) found that individuals who attend more regularly religious ceremonies are less dishonest; Ganassin (2016) found no relation between the anchors tested and the level of dishonesty of the individuals.

Regarding gender, several papers did not present evidence of their influence on dishonesty (Abeler, Becker & Falk, 2014; Gravert, 2013; Franzen & Pointner, 2013; Lundquist *et al.*, 2009; Erat & Gneezy, 2012). Azar, Yosef, and Bar-Eli (2013) have shown that women are more likely to tell the truth, but they would also have greater ability to make excuses.

The number of people involved in a task can influence dishonesty too: Charness and Sutter (2012) and Kugler *et al.* (2007) argue that the same people who are honest individually can make dishonest decisions in a group; Sutter (2009) showed that individuals are more dishonest in groups than individually; Conrads *et al.* (2013) state that in a group task, it is more difficult to detect the person responsible for the fraud and dishonest acts tend to be more recurrent.

However, Bénabou (2012) and Bénabou and Tirole (2006) identified that there may be a downward dishonest tendency when individuals are inserted in a group as a result of social concerns with their image. In addition, as a group, individuals may have a better

understanding of standards, thus reducing dishonest behavior (Kocher, Schudy & Spantig, 2017).

As there is evidence that moral reminders are capable of influencing individuals' dishonest behavior (Pruckner & Saussarrier, 2013; Ariely, 2012; Abeler, Becker & Falk, 2014; Santos, 2011), it is necessary to study this influence in the collective behavior.

Thus, it is possible to verify that right or wrong depends on each individual and the situation in which one is inserted: the same person can present a morally accepted behavior in one scenario, and present a dishonest behavior in another. Therefore, it is necessary to understand which mechanisms influence dishonesty and the ones that diminish it, especially when it comes to a group of people. Based on this premise, the following research hypothesis arises:

H₃: When controls mechanisms (audit) and moral reminders (rules of the Professional Code of Ethics of the Accountant) are inserted, individuals are less dishonest in collective decision-making.

4.3 Experimental Design

To achieve the purpose of this research, possible dishonesty inhibitors were inserted in the experiment, in order to observe if the posture of the participants changed, with respect to honesty, when subjected to a process of control and monitoring of their activities. For this, an experiment will be carried out, based on the die-rolling game of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2016), which was divided into two stages.

The experiment consists in: the player should watch a video on the computer with a die-rolling game, whose numbers range from 1 to 6; in this stage of the experiment, all participants saw the same number 1 (one). Then each participant should report the number displayed on the dice, however, their compensation is linked to the number informed, thus enabling dishonesty. Each number reported by the participant equals one point, which is equivalent to BRL 1.00 (one real). The sum of the points was done by the computer itself, at the end of the experiment, where the participant receives the amount of his remuneration.

In the first stage of the experiment, the participants were divided into two groups, randomly formed by the system, called *GroupPC* and *GroupNoPC*. The difference between each group consists of the rules for playing and the remuneration system: the participants inserted in the *GroupPC* must inform the same number to receive the remuneration; if at least one participant in the group reports a different number, everyone in the group earn 0 (zero) points. For this, the system chose at random three members to participate in the group and before informing the number of the dice, the members would chat for two minutes in a virtual chat room.

With respect to the *GroupNoPC*, three members will be selected randomly by the system too, but the difference lies in the form of payment: the members also discuss for two minutes in the chat, however, each one receive the compensation according to the value reported; there was no need for participants to report the same value.

The second part of the experiment is similar to the first one, though, at this moment, possible mechanisms that inhibit dishonesty are inserted: the possibility of some group going through an audit process or reading some articles of the Professional Code of Ethics of the Accountant (PCEA).

Thus, in the second part of the experiment, after visualization of a new video with the die-rolling (in this stage the video presented the number two) and before informing the number, the participants were warned that, at random, a group would be chosen to go through an audit of the given response – which would be performed on the computer itself. In case the

group that went through the audit had informed a value different from the one observed in the dice, the participant (for the treatment *GroupNoPC*) or the whole group (for the *GroupPC*) received 0 (zero) points. Possibly because they are subject to investigation of the reported information, the individuals might feel inhibited to commit dishonest acts, especially because they will not receive the reward.

Another portion of the participants was tested whether the inclusion of articles of PCEA by CFC (Federal Accounting Council in Brazil), Resolution n. 803/1996, which deals with the Professional Code of Ethics of the Accountant, decreased dishonesty. The members were divided into groups *GroupPC* and *GroupNoPC*, shortly after the release of the dice and before the conversation in the chat with the other members of the group,, items from PCEA appears on the screen (specifically, articles 2, 3, 9 and 12), which deal about the ethical behavior of professionals and the sanctions that they may suffer if they do not comply with the norms. Immediately after reading it, participants should correctly answer a multiple-choice question about articles read in order to check whether the reading was actually done so they could move on to the next phase (there was a set of 3 random questions in order to impede the participants from communicating with each other and know the answer).

The purpose of this part in the experiment is to verify whether, when reminded of their moral standards, participants are less dishonest than when there are no such reminders. According to Santos (2011), if a reminder of moral standards has any effect on honesty, it can be said that people do not automatically remember these standards when taking their decisions. Table 12 support on the understanding of the experiment:

Table 12: Design of the third experiment

Tuble 12. Design	able 12. Design of the time experiment						
Treatments	Part 1	Part 2 (half of the participants with the audit and the other half with PCEA articles)					
	GroupPC	GroupPC					
	GroupNoPC	GroupNoPC					

Source: prepared by the authors.

Throughout the experiment, communication between participants was not allowed, only during chats. Before each stage of the experiment, they were given instructions on how to proceed and participants answered questions in order to show that they understood what was being asked: only after answering the question correctly, they would proceed to the next stage.

Before the start of the experiment, it was requested that each participant answer a questionnaire with questions about gender, level of education and family income, in order to obtain an overview of the respondents. At the end, appears on the computer the number of points earned and the sum in reais (R\$), the value to be pocketed. Thus, each participant filled the paper on the desk with this information, delivered to the applicator and received the amount in cash.

Table 13 presented the steps of the experiment:

Table 13: Stages of the third experiment

Table 13. Stages of the time experiment						
PHASES	DESCRIPTION					
General Instructions Instructions are given to participants about how to proceed experiment, such as pay, anonymity and chat interaction.						
Questionnaire	The participants answer a questionnaire with personal information, such as age, study institution, family income.					
PAR	T 1 OF THE EXPERIMENT					
Instructions	The system automatically and randomly divides the participants into the two groups (<i>GroupPC</i> and <i>GroupNoPC</i>) and sends instructions on the next step to each participant, taking into					

	1
	account the type of group to which it is inserted. Participants
	should also inform if they understood the task to be performed.
D: D !!!	Participants watch (individually) a video with the die-rolling. In
Die-Rolling	this stage, the video was the same for all the participants
	presenting the number 1 (one).
	Participants received instructions about how the chat will work,
Instructions for group interaction	such as the time they would have to talk and the prohibition of
	identifying themselves.
Group interaction	Participants interact in a virtual chat, without the possibility of
Group interaction	identifying the other members of the group.
	The participants individually report the result of the data entry,
Decision Making	considering that the remuneration is tied to the number they
	inform and the group in which it is inserted.
PAI	RT 2 OF THE EXPERIMENT
	Participants remain divided into the same group in which they
	responded to part 1 of the experiment, receive instructions on how
Instructions	to proceed to the next stage and answer if they understood the
	task.
	Half of the groups will be informed that they will be subject to an
	audit process: the system will randomly choose a participant to be
	audited. In case the group that suffer the audit had informed a
Audit Paport	
Audit Report	value different from the one observed in the data entry, the
	participant (for the treatment GroupNoPC) or the whole group
	(for the <i>GroupPC</i> treatment) would earn 0 (zero) points.
	The other half of the group should read articles from the
	Professional Code of Ethics of the Accountant (CFC Resolution n.
PCEA Articles	803/1996). After the reading, the participants would answer a
	question in order to confirm that they had read the text.
	Participants watch (individually) a video with the die-
	rolling. Members of the same group watch the same video. Also
Die-Rolling	in this stage, the video is the same for all participants, presenting
	the number 2 (two).
	the number 2 (two).
	Participants received instructions about how the chat will work,
Instructions for group interaction	such as the time they would have to talk and the prohibition of
6 - F	identifying themselves.
a	Participants interact in a virtual chat, without the possibility of
Group interaction	identifying the other members of the group.
	The participants individually report the result of the data entry,
Decision making.	considering that the remuneration is tied to the number they
<i>G</i> .	inform and the group in which it is inserted.
	FINAL PART
	The participant is informed of the sum of points and the reais he
P	received at the end of the experiment. The participant put these
Payment	amounts on paper and delivers them to the Applicator to receive
	their remuneration.

Source: prepared by the authors.

The sessions of the experiment were carried out in the two laboratories of the Federal University of Rio Grande do Norte, which is located in the state of the same name, due to the accessibility provided, during the period from April 23th to 24th, 2018, with students from the Accounting course.

The data were collected in 13 rounds, with an approximate duration of 20 minutes (each participant took, on average, 14 minutes to complete the experiment), with 204 participants in total. The income spent was BRL 880.00, an average of BRL 4.31 for each participant: if all the participants had been honest in their answers, the cost of the experiment would be BRL 612.00, that is, there was an expense of BRL 268.00 more due to dishonesty.

The experiment was created especially for this research and conducted through the link http://experiment-parte3.firebaseapp.com. Afterwards, the conversations were also analyzed by the participants through the chat, some fragments of the dialogues were extracted and elaborated as wordclouds, through the site, www.wordclouds.com. The purpose of creating the wordclouds was to verify the expressions most used by the respondents.

In order to test whether individuals are less dishonest when inserting inhibitory mechanisms, the McNemar test was carried out in order to ascertain whether the frequency of dishonesty observed in the first stage and the second stage are equal or not. The statistical software SPSS[®], version 20, was handled for the tests.

4.4 Results

During the execution of the experiment, the system presented the same number for all participants: in the first stage, the data showed the number 1 (one), and in the second, the number 2 (two). It means that, to be characterized as "honest", at the end of the experiment the participant should receive the amount of BRL 3.00 (three reais). The amount spent, if everybody were honest, would be BRL 612.00. However, the total expense in the experiment was BRL 880.00, BRL 268.00 more.

About 56% of the participants defined themselves as men and 44% women. In order to balance out the relation to the type of group and to the possible mechanism to inhibit dishonesty, the system was programmed as follows:

Group	Group Type	Inhibitory Mechanism
1	GroupNoPC	Code of Ethics
2	GroupPC	Code of Ethics
3	GroupNoPC	Audit
4	GroupPC	Audit
Source: pr	epared by the author	ors.

Table 14: Example of group division and mechanism inhibitor in the third experiment

Sequentially and randomly, the type of group and the inhibitory mechanism were chosen by the system so that there was no imbalance of the participants. At the end, 53% of the respondents were allocated to the *GroupNoPC*, 39% of which were in the Audit and 61% in the Code of Ethics. The remaining 47% who remained in the GroupPC, 41% were informed of the Audit and 59% read the PCEA articles. In general, 40% of the participants participated in the inhibitory mechanism of Audit and 60% of the Code of Ethics.

Despite the extra amount expended due to the dishonesty, the largest share of people who collaborated with the experiment were honest: 70% (142 people) reported that the sum of the data, in two stages, was 3, compared to 30% (62 people) who mentioned a higher value.

In order to investigate whether the use of control mechanisms, such as audit, and moral reminders, such as the PCEA articles, would have some effect on the decision-making regarding the honesty of the participants, a separate analysis is necessary between the parts of the experiment. In the first part, in which respondents only had to play in groups, divided into their respective groups, 73% were honest. When the possible inhibitory mechanisms are inserted, the percentage of honest ones goes from 73% to 91%, and the dishonest ones, from 27% in the first part, to 9% with the inhibitors. This result corroborates the findings of previous research (Pruckner & Sausgruber, 2013; Ariely, 2012; Abeler, Becker & Falk, 2014; Santos, 2011) which bring evidence that moral reminders are capable of influencing the dishonest behavior of individuals. Table 15 shows the responses in each part of the experiment:

Table 15: Matrix of responses – third experiment

	Honest – part 2	Dishonest – part 2
Honest – part 1	142	6
Dishonest – part 1	43	13

Source: prepared by the authors.

With the inclusion of possible inhibitory mechanisms (code of ethics and auditing), it was possible to verify a decrease in dishonesty of approximately 18%. To verify if this decrease is indeed significant, the non-parametric McNemar test was performed and the results can be seen in Table 16:

Table 16: McNemar statistics – third experiment

Frequency	Without inhibitor	With inhibitor
Honest	72,5%	90,7%
Dishonest	27,5%	9,3%
Chi-Square	26,449	
McNemar test	0,000	
N of valid cases	204	

Source: prepared by the authors.

Presenting a value of 0.000, the McNemar test rejected the null hypothesis and showed that there are differences between the percentages found, that is, when individuals were subjected to an audit process or read the articles of the PCEA, they were more honest in their decisions.

The McNemar test was also applied to the sample, in the categories gender, income and group type, *PC* or *NoPC* and the data are described in Table 17:

Table 17: McNemar statistics by category (gender) – third experiment

	Men				Women			
Frequency	Audit		PCEA		Audit		PCEA	
	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2
Honest	69,4	91,8	75,8	89,4	71,9	93,8	71,9	89,5
Dishonest	30,6	8,2	24,2	10,6	28,1	6,3	28,1	10,5
McNemar		0,003		0,035		0,039		0,006
N		49		66		32		57
Cochran'Q		0,002		0,020		0,020		0,004

Source: prepared by the authors.

Table 18: McNemar statistics by category (income) – third experiment

	Income ≤ 5,000				Income > 5,000			
Frequency	Audit		PCEA		Audit		PCEA	
	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2
Honest	77,6	93,9	70,7	90,2	59,4	90,6	80,5	87,8
Dishonest	22,4	6,1	29,3	9,8	40,6	9,4	19,5	12,2
McNemar		0,039		0,000		0,002		0,453
N		49		82		32		41
Cochran'Q		0,021		0,000		0,002		0,257

Source: prepared by the authors.

Table 19: McNemar statistics by category (type of group) – third experiment

Frequency	Gro	upPC	GroupNoPC			
	Audit	PCEA	Audit	PCEA		

	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2
Honest	61,5	92,3	57,9	86,0	78,6	92,9	87,9	92,4
Dishonest	38,5	7,7	42,1	14,0	21,4	7,1	12,1	7,6
McNemar		0,000		0,000		0,109		0,549
N		39		57		42		66
Cochran'Q		0,001		0,000		0,058		0,366

Source: prepared by the authors.

In all classifications there was an increase in honesty (hence a decrease in dishonesty) when the inhibitory mechanisms were inserted. The McNemar test shows that this increase in honesty is statistically significant, except for the individuals who receive more than 5,000 and who received the moral reminders and participants who were in *GroupNoPC*, in which the statistic was not relevant.

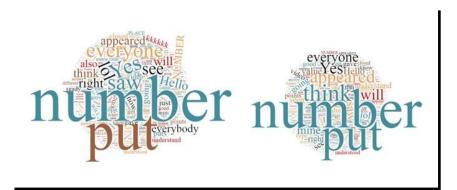
In addition, of the 60 people who were dishonest in the experiment as a whole (30% of the participants), 30 of them displayed maximum dishonesty in the first part of the experiment (number 6) and were honest in the second part (reporting 2) with the inhibitors.

The greatest increase in honesty between the first and the second stage of the experiment was perceived in the participants of the *GroupPC*: an increase of 6% for those who would be subject to an Audit and 8% for those who read the PCEA articles; a total increase of 14% in honesty. Since the members of *GroupPC* should inform the same number so that they would receive the remuneration, if at least one person reported a different number, everyone would earn 0 (zero). In *GroupNoPC*, there was an increase of 3% of honest who were notified about the Audit and 1% about the Code of Ethics.

Some reactions of the participants are important to be reported: **a)** 5 people did not accept receiving the money; 2 had been honest, 2 had placed 7 and 1 had placed 12; **b)** a girl who did not win anything, as a result of divergence in the group (she was in *GroupPC*) was extremely irritated and slammed the door of the laboratory; **c)** 4 people asked whose experiment money was it; after receiving the explanation that the money was from the Applicator, everyone took the money; **d)** a boy questioned the Applicator on a question regarding the experimental procedure and, after that, waited the Applicator to leave and put the number 6; **e)** a student had already left but ended up returning to inform that he rejoiced the payment day of the group, because now they would have money to buy a snack; **f)** one participant donated BRL 2.00 to another participant so that the Applicator would not remain without change; **g)** many people were interested in reading the research; **h)** some people went to the Applicator to find out what the experiment was; the main suspicions were about dishonesty; verify the errors that audit firms make; analyze whether in the absence of the audit, companies profit more; induce participants to make mistakes.

Through the extraction of the conversations in the chat, it was possible to elaborate wordclouds, separately, in the *Groups PC* and *NoPC*:

Figure 3: Wordclouds third experiment – *Groups PC* and *NoPC*



Through the wordclouds and analysis of the conversations carried out in the virtual environment, it was possible to perceive that there was not much distinction in relation to the groups, since the majority of the participants agreed among themselves the number that they should put, even if they were inserted in the *GroupNoPC*, in which the group members could report divergent numbers since their compensation would be based on the reported number.

As can be seen in the extract of some dialogues, with the inhibitor mechanisms present in the experiment, participants were conflicted as to the number that they should inform and also made them display a more honest behavior: a) "-Because the higher the number, the more you earn"; "-but you are acting in bad faith, the idea is not to make money"; "-but the problem is if it's something ethical"; b) "-Is it a dishonesty test?"; "-It was 1 for everyone, but we can bypass the rules saying it was 6"; "-Let's put 6, you can buy juice and a snack"; "-lol, corruption"; c) "The question is to be honest or to make money"; d) "-The idea here is not to make money but to leave with a clean conscience"; "-I just understood now, I thought the game was about management, I was not expecting to act clean or dirty, I thought it was something about administration"; e) "Now you have the audit, right?!"; f) "-After that resolution there, I did not lie"; "-that little text gave us a reprimand"; "-a text is effective"; g) "-the debate is about being honest or profitable"; "-I believe they want to test ethics"; "-they put everything to weigh the conscience and to do the right thing"; h) "-Our profession is governed by ethics, will I put 1 or 6 for money?"; i) "-Should we put the credible information? Combine a false value? What should we do? We have to put the same thing to the Federal Police and the Revenue Service to think that we are all right"; "-Will everybody put 6 and win BRL 6.00? Or let's be honest"; j) "-With audit or without audit ... money matters little, what you do is to type what you saw"; "-Honesty above all else"; "-since this is missing in Brazil"; k) "I put the truth in the first and also it in the second, because this time it will be audited"; 1) "After seeing the code of ethics, the weight is greater".

Below, a summary of the experiment:

- a) Number of participants -204;
- b) Number of dishonest people 62 (30%);
- c) Average total amount received BRL 4.31;
- d) Average time taken to complete the experiment 13 minutes and 48 seconds;
- e) Average attempt to understand the experiment -3;
- f) Average age of participants 24 years;
- g) Total amount spent BRL 880.00;
- h) Extra amount spent due to dishonesty BRL 268.00.

4.5 Conclusions

This research about dishonesty has as one of its bases the work of Ariely (2012), and states that the dishonest behavior of individuals is influenced by self-justifications, that is, individuals have pre-formulated concepts about their self-image and honesty. Therefore, all people are capable of committing dishonest acts as long as those acts do not exceed the limit of their ethical self-concept.

Aware of this theory, several studies have intended to verify the existence of possible control mechanisms that would be able to inhibit or decrease the dishonesty of individuals (Utikal & Fischbacher, 2013; Abeler, Becker & Falk, 2014; Ruffle & Tobol, 2014; Pruckner & Sausgruber, 2013; Ariely, 2012; Santos, 2011; Ganassin, 2016) such as religion or moral

reminders. Thus, this research also verified if certain mechanisms would be able to influence the decision making concerning dishonesty when these individuals are inserted in groups and not individually.

Regardless, the majority of the participants were honest (70% of the people) and the findings of the experiment corroborated not only the research hypothesis but also the previous studies, since it was possible to verify that the audit and the reading of some articles of the Professional Code of Ethics of the Accountant made the participants less dishonest: in the first part of the experiment, when the individuals were not subject to any control mechanism, 27% of the participants were dishonest; in the second part, when they would be subject to an audit process or after reading the PCEA articles, the percentage of dishonest ones went down to 9%.

In view of the results found, one of the possibilities for decreasing dishonesty when deciding on the preparation of financial statements would be to increase the scope of companies required to have their reports audited by independent auditors and, if found to be dishonest, even before publication, that they could suffer some kind of punishment, as proposed in the experiment. Anyhow, independent auditing firms that audited companies discovered in fraudulent schemes also faced more effective punishments by regulators.

Regarding moral reminders, the creation or expansion of continuing education movements by regulators, especially on ethics, can help to reduce dishonesty. The time component has not been addressed in this research, ie how long the individual is able to recall moral reminders, so perhaps the individual's obligation to sign a statement attesting to the truth of the data may be an element of dishonesty, as proposed in Ariely (2012). The use of accounting standards based on principles rather than rules increases the discretion of accounting preparers, which may lead to an increase in dishonest attitudes, although in researches such as those of Barth, Landsman and Lang (2008) and JeanJean and Stolowy (2008) has been shown to decrease manipulation techniques, such as earnings management. With this, educational investment in ethics becomes urgent even though this entails monetary expenditures.

Although the data from this research demonstrate that auditing and reading the Code of Ethics have decrease the dishonesty of individuals, this does not mean that there are no other mechanisms that can influence, even more effectively, the inhibition of dishonesty. The mechanisms chosen here were an initial work proposal in order to understand their impacts on the dishonesty of individuals, when they should make decisions collectively. Future research may broaden the scope of work, introducing other mechanisms that inhibit dishonesty or comparing the results of new students and trainees and the impact of teaching ethics in their formation.

5 CONCLUSIONS

In the face of several recent corruption scandals, not only in Brazil but also internationally, involving companies, politicians, auditing and accounting firms, several studies have set out to study the determinants of dishonesty in individuals (Mazar, Amir & Ariely, 2008; Mazar & Ariely, 2006; Gino, Ayal & Ariely, 2013; Santos, 2011; Castillo *et al.*, 2009; Melo Segundo, 2016; Lima, Avelino & Cunha, 2017; Tomazelli, 2011).

The theory developed by Ariely (2012) states that dishonest decisions are not made after a cost-benefit analysis of the situation but that, especially, internal motivations influence this behavior. Named Maneuver Margin Theory, it certifies that individuals seek the maximum possible benefits from cheating at all times, but also pay close attention not to hurt their ethical self-concepts, so that it does not modify their honest image of themselves.

In this same theory, this research analyzed different aspects of the dishonest behavior of individuals, but, unlike previous researches (Glätzer-Rützler & Lergetporer, 2015; Ariely, 2012; Gneezy, 2005; Gneezy, Rockenbach & Serra-Garcia, 2013; Melo Segundo, 2016; Lima, Avelino & Cunha, 2017; Santos, 2011; Mazar, Amir & Ariely, 2008; Mazar & Ariely, 2006), that analyzed this behavior at the individual level, the present research investigated dishonesty when the decision-making was performed in a group, thus resembling decision making in corporate environments.

For this, three different studies were carried out with the same methodology, focusing on the investigation of dishonest behavior: computer experiments, based on the works of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2016). The experiments were performed with 634 participants in total (250 in the first, 180 in the second and 204 in the third). In all experiments, players should watch a die-rolling game and then report which number they saw in the dice, and their pay was tied to the number they reported and not to the number they actually saw, giving way to dishonesty.

The first experiment was to find, as initial focus, the effect that a social group would inflict upon individual dishonesty. Thus, the experiment was performed in two stages: in the first, the participants played alone, and in the second stage they were to decide in a group (of three people), which was formed by the system, randomly. Although the participants were generally more honest (55%), it was verified that the individuals were more dishonest when the decision making was done in a group (36%) than when individually (23%).

The second experiment aimed to analyze whether the existence of an individual in a superior situation (such as a boss or senior executive) influence in dishonest behavior, possibly causing the group to make less honest decisions. The same type of experiment was conducted, however with a different sample, and in the first stage the participants were to make group decisions and, in the second stage, the same group formation was maintained, but one of the members was randomly chosen by the system as the leader. At this stage, the leader received double the pay and could influence others to be dishonest in order to profit more.

Different from the first experiment, the majority of the participants were dishonest (56%). In the first stage, 36% of the participants were found to be dishonest, while in the second, 44%. This corroborates the hypothesis of the research that the leader has influence over the others so that they are more dishonest.

The third and final experiment had the purpose of investigating whether the insertion of possible control mechanisms would be able to decrease or inhibit dishonesty. In the first part of the experiment the participants would normally play in a group and, after the decision of the second party, they would either be informed that there would be an audit in the system or should read articles of the Professional Code of Ethics of the Accountant. Based on

previous studies (Pruckner & Sausgruber, 2013; Ariely, 2012; Abeler; Becker & Falk, 2014; Santos, 2011) that moral reminders can reduce some control mechanism (91%) when they played without the mechanisms (73%).

As the participants' remuneration was made in Brazilian currency, there was a financial expense caused by dishonesty in the amount of BRL 1,445.00 (BRL 562.00 in the first experiment, BRL 615.00 in the second, and BRL 268.00 in the third).

The three experiments, although different, deal with the same theme and reveal aspects about the dishonest behavior of individuals, when they are about to make decisions in a group: in the samples surveyed, individuals were more dishonest when they decided in groups than individually, which is in line with the findings of previous research (e.g. Kocher, Schudy & Spantig, 2017; Conrads *et al.*, 2013; Fischbacher, Föllmi-Heusi, 2013; Chitilová and Korbel, 2014). Since, in general, decisions in corporate environments are made by a board, and individuals has the tendency to be more dishonest when making decisions in a group, it is necessary to deepen these studies, seeking to identify the reasons why this phenomenon occurs, being it by the possibility of covering up dishonest acts, either to benefit other members of the group or even by the fact that the threshold of dishonesty of the individual increases when he observes the threshold of other individuals.

It was also identified in this research that the figure of a leader, who received double remuneration, made the other members of the group more dishonest. Although this leader did not exactly have the figure of an executive leader in the companies (he was not named by his competencies but randomly by the system, there was the possibility that the other members of the group did not know who the leader was), it was possible to perceive that the form of their remuneration influences the dishonesty of the members of the group. Future research can not only improve the leader's figure and bring it closer to reality, but also check for ways of remuneration which are capable of diminishing dishonesty.

In the face of increased dishonesty when individuals are inserted into a group, it becomes necessary to investigate mechanisms that decrease dishonesty. The data of this research verified that in communicating that the data can be audited, individuals tend to be more honest, possibly as a result of the supervision: when the individual has his answers checked by others, and can still suffer some kind of sanction if the dishonest act is discovered, he tends to be more honest in his decision-making.

Another mechanism also tested in this research was the moral reminders, here characterized by the articles of the PCEA: as also evidenced in previous research (Pruckner & Sausgruber, 2013; Ariely, 2012), moral reminders tend to decrease individuals' dishonesty. These moral reminders are not present in everyday life but a possible solution would be to intensify continuing education courses, already promoted by the class councils, on professional ethics. In addition, it is also necessary to study other mechanisms that can reduce dishonesty and seek a way to insert them into decision-making.

Analyzing the data collected in the three experiments in a compiled way, disregarding the question of whether they were performed at different locations and at different times, it is possible to perceive an increase in dishonesty: in the first stage of the first experiment, participants played alone, 23% of the individuals were dishonest. Still in the same experiment, when placed in groups, this percentage rises to 36%. Compared with the second experiment, in the first stage, which is similar to the second stage of the first experiment, 36% of the participants were dishonest: when the figure of the leader is inserted, this percentage rises to 44%. When the third experiment is carried out, in which are inserted possible mechanisms that inhibit dishonesty, dishonest people constitute only 9% of the participants. Aware of the differences in each experiment, but based on Ariely (2012), who analyzed dishonest behavior in several different countries and verified that there is no difference in the level of dishonesty among them, it is possible to perceive an increase in dishonesty when individuals make

decisions individually, in group and with the figure of a leader; in addition, the presence of the audit and the memory of ethical codes, made the individuals analyzed present a less dishonest behavior.

Thereby, this work reinforces the importance of the study of dishonesty, not only because of its ethical and moral impacts on society, but also because of its financial impact. In addition, it also emphasizes the relevance of a work that explores dishonesty in a group, which has not yet been studied, but is very present in the daily life of companies.

It is also important to emphasize that this study has several limitations and it does not propose to exhaust the issue of dishonesty. Moreover, internal considerations of each individual were not evaluated in making their choices because they understood that this subject is in the scope of other sciences, such as Psychology and Sociology, but only to present the existence of dishonesty in a simple game in which financial remuneration was involved and also to present some mechanisms that can reduce dishonesty, present in daily accounting.

Suggestions for future research can be described as: testing other possible dishonest inhibitor mechanisms; adjust the characteristics of the leader, making it closer to that found in companies; the experiments can be performed in companies in order to verify if the same results will be found in professionals who already work in the job market; or to add punitive elements to verify if they change the dishonesty of the individuals when they make decisions in group.

REFERENCES

Abeler, J., Becker, A., & Falk, A. (2014). Representative evidence on lying costs. **Journal of Public Economics**, 113, 96-104.

Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. **Journal of Public Economics**, 1(3-4), 323-338.

Ariely, D. (2012). A mais pura verdade sobre a desonestidade. Rio de Janeiro: Campus.

Aronson, E., Wilson, T. D., & Brewer, M. B. (1998). **Experimentation in social psychology**. New York, NY: McGraw-Hill.

Aveyard, M. E. (2014). A call to honesty: Extending religious priming of moral behavior to Middle Eastern Muslims. **PloS One**, 9(7), e99447.

Azar, O. H., Yosef, S., & Bar-Eli, M. (2013). Do customers return excessive change in a restaurant?: A field experiment on dishonesty. **Journal of Economic Behavior & Organization**, 93, 219-226.

Baeker, A., & Mechtel, M. (2015). Peer settings induce cheating on task performance (No. 06/2015). **IAAEU Discussion Paper Series in Economics**.

Bandura, A. (2014). Social cognitive theory of moral thought and action. In Handbook of moral behavior and development (pp. 69-128). Psychology Press.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. **Journal of Personality and Social Psychology**, 71(2), 364.

Barth, M. E., Landsman, W. R., & Lang, M. H. (2008). International accounting standards and accounting quality. **Journal of Accounting Research**, 46(3), 467-498.

Bass, B. M. (1990). **Bass and stogdill's handbook of leadership**: theory, research, and managerial applications (3rd ed.). New York: Free Press.

______. (2008). The Bass handbook of leadership: theory, research, and managerial applications (4th ed.). New York: Free Press.

Becker, G. S. (1968). Crime and punishment: An economic approach. In **The economic dimensions of crime** (pp. 13-68). Palgrave Macmillan, London.

_____. (1993). Nobel lecture: The economic way of looking at behavior. **Journal of Political Economy**, 101(3), 385-409.

Bénabou, R. (2012). Groupthink: Collective delusions in organizations and markets. **Review of Economic Studies**, 80(2), 429-462.

Bénabou, R., & Tirole, J. (2006). Incentives and prosocial behavior. **American Economic Review**, 96(5), 1652-1678.

Berkowitz, L., & Donnerstein, E. (1982). External validity is more than skin deep: Some answers to criticisms of laboratory experiments. **American Psychologist**, 37, 245-257.

Bernoulli, D. (1954). A new theory on the measurement of risk (L. Sommer, Trans.). **Econometrica**, 22, 23-36.

Bucciol, A., & Piovesan, M. (2011). Luck or cheating? A field experiment on honesty with children. **Journal of Economic Psychology**, 32(1), 73-78.

Burns, J. M. (1978). Leadership. New York: Harper & Row Publishers

Camargo, M. (2008). **Fundamentos de ética geral e profissional**. 7 ed. Rio de Janeiro: Vozes.

Campbell, E. Q. (1964). The internalization of moral norms. **Sociometry**, 391-412.

Cappelen, A. W., Sørensen, E. Ø., & Tungodden, B. (2013). When do we lie?. **Journal of Economic Behavior & Organization**, 93, 258-265.

Castillo, M., Petrie, R., Torero, M., & Viceisza, A. (2014). Lost in the mail: a field experiment on crime. **Economic Inquiry**, 52(1), 285-303.

Charness, G., & Sutter, M. (2012). Groups make better self-interested decisions. **Journal of Economic Perspectives**, 26(3), 157-76.

Chauí, M. (2002). A existência ética. In: Convite à Filosofia. 12 ed. São Paulo: Ática.

Chen, Y., & Li, S. X. (2009). Group identity and social preferences. **American Economic Review**, 99(1), 431-57.

Childs, J. (2012). Gender differences in lying. **Economics Letters**, 114(2), 147-149.

Chytilova, J., & Korbel, V. (2014). Individual and group cheating behavior: a field experiment with adolescents (No. 06/2014). IES **Working Paper**.

Colquitt, J. A. (2008). From the editors publishing laboratory research in AMJ: A question of when, not if. **Academy of Management Journal**, 51, 616-620.

Conrads, J., Irlenbusch, B., Rilke, R. M., & Walkowitz, G. (2013). Lying and team incentives. **Journal of Economic Psychology**, 34, 1-7

Cooke, M. (2000). O líder natural: criando novas realidades em benefício do todo. São Paulo: Peirópolis.

Damodaran, A. (2006). **Filosofias de investimento**: estratégias bem-sucedidas e os investidores que as fizeram funcionar. Rio de Janeiro: Qualitymark.

Day, D. V., & Antonakis, J. (2012). **The nature of leadership** (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

DePaulo, B. M., Kashy, D. A., Kirkendol, S. E., Wyer, M. M., & Epstein, J. A. (1996). Lying in everyday life. **Journal of Personality and Social Psychology**, 70(5), 979.

DiIulio, J. J. (1996). Help wanted: Economists, crime and public policy. **Journal of Economic Perspectives**, 10(1), 3-24.

Dumer, M. C. R.; Brambati, L. C.; Souza, A. M.; Gobbi, B. (2016). O que motiva as fraudes fiscais das empresas?. In: Congresso Brasileira de Estudos Organizacionais, 4., 2016, Porto Alegre/RS. CBEO.

Elliott, W. B., Hodge, F. D., Kennedy, J. J., & Pronk, M. (2007). Are MBA students a good proxy for nonprofessional investors? **The Accounting Review**, 82(1), pp. 139-168.

Elliott, B. W., Hodge, F. D., & Jackson, K. E. (2008). The Association between Nonprofessional Investors' Information Choices and Their Portfolio Returns: The Importance of Investing Experience. **Contemporary Accounting Research**, 25(2), pp. 473-98.

Erat, S., & Gneezy, U. (2012). White lies. **Management Science**, 58(4), 723-733.

Ferreira, S. G. (2016). Finanças Comportamentais: processo decisório e a heurística da ancoragem em investimentos imobiliários em fundos de pensão. 2016. 119 f. **Dissertation** (Master Degree in Business Management) – Escola Brasileira de Administração Pública e de Empresas, Fundação Getúlio Vargas.

Fischbacher, U., & Föllmi-Heusi, F. (2013). Lies in disguise—an experimental study on cheating. **Journal of the European Economic Association**, 11(3), 525-547.

Franzen, A., & Pointner, S. (2013). The external validity of giving in the dictator game. **Experimental Economics**, 16(2), 155-169.

Erat, S., & Gneezy, U. (2012). White lies. **Management Science**, 58(4), 723-733.

Ganassin, Eduardo Jezini Fernandes. (2016). Investigação de variáveis que influenciam a ética profissional contábil: uma aplicação das teorias dos estímulos internos e externos. 2016. 81 f. **Dissertation** (Master Degree in Accounting) — Programa Multiinstitucional e Inter-Regional de Pós-Graduação em Ciências Contábeis da Universidade de Brasília, Universidade Federal da Paraíba e Universidade Federal do Rio Grande do Norte.

Gino, F., Ayal, S., & Ariely, D. (2013). Self-serving altruism? The lure of unethical actions that benefit others. **Journal of Economic Behavior & Organization**, 93, 285-292.

Glätzle-Rützler, D., & Lergetporer, P. (2015). Lying and age: An experimental study. **Journal of Economic Psychology**, 46, 12-25.

Gneezy, U. (2005). Deception: The role of consequences. **American Economic Review**, 95(1), 384-394.

Gneezy, U., Rockenbach, B., & Serra-Garcia, M. (2013). Measuring lying aversion. **Journal of Economic Behavior & Organization**, 93, 293-300.

Gravert, C. (2013). How luck and performance affect stealing. **Journal of Economic Behavior & Organization**, 93, 301-304.

Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal history. **American Psychologist**, 35(7), 603.

Griffin, D. W., & Ross, L. (1991). Subjective construal, social inference, and human misunderstanding. In **Advances in Experimental Social Psychology** (Vol. 24, pp. 319-359). Academic Press.

Harris, S., Mussen, P., & Rutherford, E. (1976). Maturity of moral judgment. **The Journal of Genetic Psychology**, 128(1), 123-135.

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., & McElreath, R. (2001). In search of homo economicus: behavioral experiments in 15 small-scale societies. **American Economic Review**, 91(2), 73-78.

Hsu, D. K., Simmons, S. A., & Wieland, A. M. (2016). Designing entrepreneurship experiments: a review, typology, and research agenda. **Organizational Research Methods**, 20(3), 379-412.

International Accounting Standards Board – IASB. Conceptual Framework for Financial Reporting. 2018.

Jeanjean, T., & Stolowy, H. (2008). Do accounting standards matter? An exploratory analysis of earnings management before and after IFRS adoption. **Journal of Accounting and Public Policy**, 27(6), 480-494.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. **Journal of Financial Economics**, 3(4), 305-360.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. **Econometrica** (pp. 263-291).

Katz, D., & Khan, R. L. (1978). **Psicologia Social das Organizações**. 2" ed. São Paulo: Atlas.

Keizer, K., Lindenberg, S., & Steg, L. (2008). The spreading of disorder. **Science**, 322(5908), 1681-1685.

Kocher, M., Strauß, S., & Sutter, M. (2006). Individual or team decision-making—causes and consequences of self-selection. **Games and Economic Behavior**, 56(2), 259-270.

Kocher, M. G., & Sutter, M. (2005). The decision maker matters: Individual versus group behaviour in experimental beauty-contest games. **The Economic Journal**, 115(500), 200-223.

- Kocher, M. G., Schudy, S., & Spantig, L. (2017). I lie? We lie! Why? Experimental evidence on a dishonesty shift in groups. Management Science. CESifo **Working Paper** n. 6008.
- Kotter, J. P. (2001). What leaders really do. **Harvard Business Review**, 79(11), 85-96.
- Kröll, M., & Rustagi, D. (2016). Got milk? Motivation for honesty and cheating in informal markets: Evidence from India. In SAFE **Working Paper**, no 127.
- Kugler, T., Bornstein, G., Kocher, M. G., & Sutter, M. (2007). Trust between individuals and groups: Groups are less trusting than individuals but just as trustworthy. **Journal of Economic Psychology**, 28(6), 646-657.
- Lee, J. J., Im, D. K., Parmar, B., & Gino, F. (2015). Thick as Thieves? Dishonest Behavior and Egocentric Social Networks. **Working Paper.**
- Lewis, A., Bardis, A., Flint, C., Mason, C., Smith, N., Tickle, C., & Zinser, J. (2012). Drawing the line somewhere: An experimental study of moral compromise. **Journal of Economic Psychology**, 33(4), 718-725.
- Lima, G. A. S. F., Avelino, B. C., & Cunha, J. V. A. (2017). Narcissism: are accounting students using their personality traits to perform better?. **Revista de Contabilidade e Organizações**, 11(31).
- List, J. A., Bailey, C. D., Euzent, P. J., & Martin, T. L. (2001). Academic economists behaving badly? A survey on three areas of unethical behavior. **Economic Inquiry**, 39(1), 162-170.
- Liu, C., & De Rond, M. (2016). Good night, and good luck: perspectives on luck in management scholarship. **The Academy of Management Annals**, 10(1), 409-451.
- Lucas, R. E., Diener, E., & Suh, E. (1996). Discriminant validity of well-being measures. **Journal of Personality and Social Psychology**, 71(3), 616.
- Lundquist, T., Ellingsen, T., Gribbe, E., & Johannesson, M. (2009). The aversion to lying. **Journal of Economic Behavior & Organization**, 70(1-2), 81-92.
- Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. **Journal of Marketing Research**, 45(6), 633-644.
- Mazar, N., & Ariely, D. (2006). Dishonesty in everyday life and its policy implications. **Journal of Public Policy & Marketing**, 25(1), 117-126.
- Mazar, N., & Aggarwal, P. (2011). Greasing the palm: Can collectivism promote bribery?. **Psychological Science**, 22(7), 843-848.
- Melo, C. L. L. de. (2014). Determinantes da Aversão à Perda em Decisões Financeiras: uma investigação por meio de modelos de equações estruturais. 2014. 199 f. **Thesis** (Doctor Degree in Accounting) Programa Multiinstitucional e Interregional de Pós-Graduação em Ciências Contábeis da Universidade de Brasília, Universidade Federal da Paraíba e Universidade Federal do Rio Grande do Norte.

Melo Segundo, Agamenon da Costa. (2016). Determinantes da fraude financeira: a relação entre os aspectos de racionalidade e a desonestidade. 2016. 62 f. **Dissertation** (Master Degree in Accounting) — Programa Multiinstitucional e Inter-Regional de Pós-Graduação em Ciências Contábeis da Universidade de Brasília, Universidade Federal da Paraíba e Universidade Federal do Rio Grande do Norte.

Mook, D. D. (1983). In defense of external invalidity. American Psychologist, 38, 379-387

Muehlheusser, G., Roider, A., & Wallmeier, N. (2015). Gender differences in honesty: Groups versus individuals. **Economics Letters**, 128, 25-29.

Mueller, B. H., & Lee, J. (2002). Leader-member exchange and organizational communication satisfaction in multiple contexts. **The Journal of Business Communication** (1973), 39(2), 220-244.

Mullen, E., & Nadler, J. (2008). Moral spillovers: The effect of moral violations on deviant behavior. **Journal of Experimental Social Psychology**, 44(5), 1239-1245.

Mussweiler, T., & Ockenfels, A. (2013). Similarity increases altruistic punishment in humans. **Proceedings of the National Academy of Sciences**, 110(48), 19318-19323.

Nagin, D. S., & Pogarsky, G. (2003). An experimental investigation of deterrence: Cheating, self-serving bias, and impulsivity. **Criminology**, 41(1), 167-194.

NGO Transparency International. (2016). Corruption by country/territory. Available in: < https://www.transparency.org/country#BRA>. Access in: Aug. 09th 2017.

Pruckner, G. J., & Sausgruber, R. (2013). Honesty on the streets: A field study on newspaper purchasing. **Journal of the European Economic Association**, 11(3), 661-679.

Rosa, M. M., Bernardo, F. D., Vicente, E. F. R., & Petri, S. M. (2015). A Lei de Acesso à Informação como instrumento de controle social: diagnóstico dos municípios do sul do Brasil à luz do artigo 8º da lei 12527/2011. **Navus-revista de Gestão e Tecnologia**, 6(1), 72-87.

Ruffle, B. J., & Tobol, Y. (2014). Honest on Mondays: Honesty and the temporal separation between decisions and payoffs. **European Economic Review**, 65, 126-135.

Sá, A. L. (2001). Ética profissional. Atlas.

Sanitioso, R., Kunda, Z., & Fong, G. T. (1990). Motivated recruitment of autobiographical memories. **Journal of Personality and Social Psychology**, 59(2), 229.

Santos, P. F. dos. (2011). A desonestidade de pessoas honestas um experimento no Brasil. 2011. 97 f. **Dissertation** (Master Degree in Economic) – Programa de Pós-Graduação em Economia da Universidade de Brasília.

Schein, E. (2007). Cultura organizacional e liderança. São Paulo, SP: Atlas.

Schweitzer, M. E., & Hsee, C. K. (2002). Stretching the truth: Elastic justification and motivated communication of uncertain information. **Journal of Risk and Uncertainty**, 25(2), 185-201.

Sen, A. (1993). Does business ethics make economic sense?. In The ethics of business in a global economy (pp. 53-66). **Springer**, Dordrecht.

_____. (1999). **Sobre ética e economia**. São Paulo: Companhia das Letras.

Shaver, K. G. (2014). Experimental methods in entrepreneurship research. In A. L. Carsrud & M. Bra nback (Eds.), **Handbook of research methods and applications in entrepreneurship and small business** (pp. 88-111). Cheltenham, UK: Edward Elgar Publishing.

Simon, H. (1957). **A behavioral model of rational choice**. Models of man, social and rational: Mathematical essays on rational human behavior in a social setting.

Siqueira, M. M.; Amaral, D. J. (2006). Relações entre estrutura organizacional e bem-estar psicológico. **Revista Eletrônica de Administração** – **REA**. 5 (1).

Smith, A. (1983). **A riqueza das nações-investigação sobre sua natureza e causas**. São Paulo: Abril.

Sparrowe, R. T., & Liden, R. C. (1997). Process and structure in leader-member exchange. **Academy of Management Review**, 22(2), 522-552.

Sutter, M. (2009). Deception through telling the truth?! Experimental evidence from individuals and teams. **The Economic Journal**, 119(534), 47-60.

The Enron Trial: Testimony of Andrew Fastow (former Chief Financial Officer of Enron). Available in: http://www.famous-trials.com/enron/1787-home Access in: Oct. 01st 2016.

Tomazelli, Karlo Giordani. (2011). Desonestidade Acadêmica e Profissional – avaliação das percepções de estudantes de Administração e Contabilidade. 2011. 64 f. **Final Work for the Graduation** (Graduation in Business) – Departamento de Ciências Administrativas da Universidade Federal do Rio Grande do Sul.

Turano, L. M., & Cavazotte, F. (2016). Conhecimento científico sobre liderança: uma análise bibliométrica do acervo do The Leadership Quarterly. **RAC-Revista de Administração Contemporânea**, 20(4).

United Nations Office on Drugs and Crime. (2013). Corruption and Development. Available in: http://www.unodc.org/documents/lpo-brazil/Topics_corruption/Campanha-2013/CORRUPCAO_E_DESENVOLVIMENTO.pdf. Access in: May 21st 2018.

Utikal, V., & Fischbacher, U. (2013). Disadvantageous lies in individual decisions. **Journal of Economic Behavior & Organization**, 85, 108-111.

Von Neumann, J. V., & Morgenstern, O. (1944). **Theories of games and economic behavior**.

Weisel, O., & Shalvi, S. (2015). The collaborative roots of corruption. **Proceedings of the National Academy of Sciences**, 112(34), 10651-10656.

Wiltermuth, S. S. (2011). Cheating more when the spoils are split. **Organizational Behavior and Human Decision Processes**, 115(2), 157-168.

World Economic Forum. (2016). Global Competitiveness Index – Copetitiveness ranking. Available in: http://reports.weforum.org/global-competitiveness-index/competitiveness-rankings#series=GCI.A.01.01.02v. Access in: Aug. 09th 2017.

Yukl, G. (2002). Leadership in Organizations, Fifth Edition. New Jersey, Prentice Hall.

APPENDIX – Experiments Information's

Appendix includes information about the experiments (in Portuguese). Initially, participants received instructions for the experiment on the computer screen

INSTRUÇÕES GERAIS:

Bem-vindo a esse experimento e obrigado por participar!

Por favor, a partir de agora, NÃO FALE com nenhum outro participante!

Procedimentos Gerais:

Nesse experimento, estamos estudando tomadas de decisões econômicas. Você pode ganhar dinheiro participando. O que você irá ganhar será pago ao final do experimento, de forma individual e privada, e em dinheiro. O experimento consiste em duas partes no qual você deve tomar decisões independentes. No começo de cada etapa, você receberá instruções detalhadas de como proceder. Se você tiver qualquer dúvida durante o experimento, por favor, <u>levante a sua mão</u>. Um instrutor irá até você e responderá a sua dúvida, em particular.

Durante o experimento, você e os outros participantes terão que tomar decisões e, possivelmente, você terá que interagir (através do *chat*) com outros participantes também. O seu pagamento será determinado por suas decisões e pelas decisões dos outros participantes.

Pagamento:

Em algumas partes do experimento, não será mencionado sobre "Reais", mas sim sobre "pontos". Seus ganhos serão calculados em pontos. No final do experimento, os pontos serão convertidos em Reais, com uma taxa de conversão de:

$$1 \text{ ponto} = 1 \text{ Real}$$

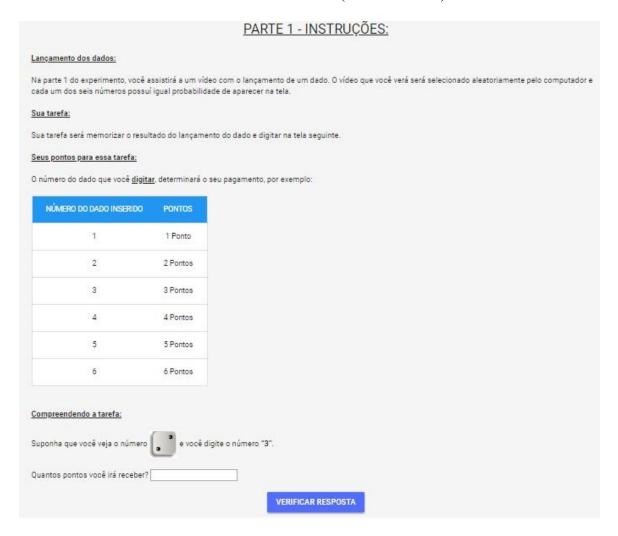
O seu pagamento acontecerá no final do experimento. Cada participante será chamado pelo seu código de identificação, para pagamentos individuais. Nenhum outro participante saberá sobre o seu pagamento e você também não saberá sobre o pagamento de nenhum outro participante.

Anonimato:

A análise do experimento será feita anonimamente. NÃO SERÁ REALIZADO NENHUM LINK ENTRE O SEU NOME E OS DADOS GERADOS NO EXPERIMENTO! Você não saberá a identidade de nenhum participante, nem antes nem após o término do experimento. Também os outros participantes não saberão a sua identidade. Durante todo o experimento, sua única forma de identificação será através do código de identificação que você receberá no início do experimento. Ao teclar em "OK", você está concordando em participar do experimento:

ОК

On screen instructions: Instructions for Part 1 (for Individual)



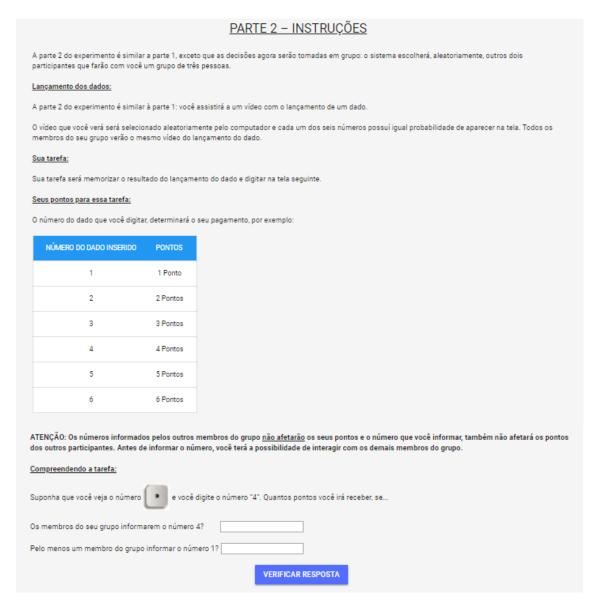
Decision Screen Part 1 (displayed after individuals observed the video)



Instructions for Part 2: *GroupNoPC*

[for *GroupPC*, instructions were identical except for part called "Attention". In *GroupPC*, the text was: "ATTENTION: You must enter the same number as the other participants in your group. All members of the group must report the same number: if at least one participant reports a different number, all members of the group will receive 0 (zero) points. Before informing the number, you will have the possibility to interact with the other members of the group".

In the second experiment, the instructions for the leaders contained this: "Your task: You have been randomly selected to be the leader of your group, which will consist of two other members. Your role will be to guide the conversations with the other members of the group. Because of your leadership role in this task, your pay will be doubled at this stage of the experiment. The other members of the group do not know that your remuneration will be doubled: it is up to you to comment with them or not. You must memorize the result of the dice roll and enter the next screen"]



Instructions for Part 2 in Third Experiment: with audit

[for *GroupPC*, instructions were identical except the fact that participants were informed that all the members must put on the same number, otherwise all the members would receive a payoff of 0]

A parte 2 do experimento é similar a parte 1, sendo que agora, o seu grupo estará sujeito a passar por um processo de auditoria.

A todo momento, o seu grupo estará sujeito a passar por um processo de auditoria que o sistema realiza: de forma aleatória, o sistema escolhe um participante do grupo, dentre todos que estão participando, e fiscaliza se o número informado no vídeo do lançamento do dado é igual ao informado pelo grupo. Caso seja diferente, o participante receberá 0 (zero) pontos nessa etapa do experimento.

ATENÇÃO: Você permanecerá com o mesmo grupo da parte 1. Logo, Os números informados pelos outros membros do grupo não afetarão os seus pontos e o número que você informar, também não afetará os pontos dos outros participantes. Antes de informar o número, você terá a possibilidade de interagir com os demais membros do grupo.

Na parte 2 do experimento, você assistirá a outro vídeo com o lançamento de um dado.O vídeo que você verá será selecionado aleatoriamente pelo computador e cada um dos seis números possui igual probabilidade de aparecer na tela.

A sua decisão de qual número registrar será tomada em grupo: o sistema escolherá, aleatoriamente, outros dois participantes que farão com você um grupo de três pessoas. Todos os membros do seu grupo verão o mesmo vídeo do lançamento do dado.

Sua tarefa:Sua tarefa será memorizar o resultado do lançamento do dado e digitar na tela seguinte.

Seus pontos para essa tarefa:

PONTOS
1 Ponto
2 Pontos
3 Pontos
4 Pontos
5 Pontos
6 Pontos

ок

Instructions for Part 2 in Third Experiment: articles in the Professional Code of Ethics of the Accountant

Abaixo, serão mostrados alguns trechos do Código de Ética Profissional do Contador (CEPC), conforme Resolução ČFC nº 803/1996: Art. 2º São deveres do Profissional da Contabilidade: I – exercer a profissão com zelo, diligência, honestidade e capacidade técnica, observada toda a legislação vigente, em especial aos Princípios de Contabilidade e as Normas Brasileiras de Contabilidade, e resguardados os interesses de seus clientes e/ou empregadores, sem prejuízo da dignidade e independência profissionais; Art. 3º No desempenho de suas funções, é vedado ao Profissional da Contabilidade: III – auferir qualquer provento em função do exercício profissional que não decorra exclusivamente de sua prática lícita; Art. 9º A conduta do Profissional da Contabilidade com relação aos colegas deve ser pautada nos princípios de consideração, respeito, apreço e solidariedade, em consonância com os postulados de harmonia da classe. Art. 12º A transgressão de preceito deste Código constitui infração ética, sancionada, segundo a gravidade, com a aplicação de uma das seguintes penalidades: I - advertência reservada; II - censura reservada; III - censura pública. OK

Instructions for chat (displayed after Instructions and the video in Part 2)

PARTE 2 — INSTRUÇÕES PARA A INTERAÇÃO EM GRUPO Você terá a possibilidade de conversar com os outros membros do grupo via chat, para clarificar qual número cada membro do grupo irá informar. Você terá 2 minutos para trocar informações. A discussão em grupo terminará ao final de 2 minutos. Cada mensagem enviada será lida por todos os membros do grupo, não sendo possível o envio de mensagens individuais. Os temas abordados na conversa são livre, contudo, não será permitido mencionar qualquer identificação pessoal. Isso inclui: nome, idade, gênero, matérias que estuda (incluindo nome de professores) ou tópicos similares que levem a sua identificação. Além disso, não será permitido que você aceite qualquer pagamento de outros membros do grupo. Se essas regras não forem seguidas, você será excluído do experimento e não receberá o pagamento. Após a discussão em grupo, cada membro deverá informar um número na tela do computador.

Chat Screens



Final Part – last screen with identification code, sum of points and amount to receive

