4
Methodology

This section is organized in two parts. First, section 4.1 describes the data collection tool and the measures used in the study. It also includes information about the software used to calculate the social network measures and presents some examples of different network structures (section 4.1.1.3). Section 4.2 describes the analytical methods used.

Considering that unethical behavior cannot be predicted conclusively by unethical intentions and that ethical decision-making research can be affected by social response bias, this study used a multi-method – survey followed by an experiment – to measure unethical intention and behavior, respectively.

4.1.
Data Collection and Measures

Carpenter *et al*. (2012) proposed a 2 x 2 categorization of social capital research based on: a) the direction of causality – whether network and network features are predictors (causes) of actors' actions or predicted effects (consequences) in the theoretical models used; and b) the level of analysis – "interpersonal level research" (focal actors are individuals) or "inter-organizational level research" (focal actors are organizations or part of organizations such as teams or business units). This study's measurements included both non-network (individual variables) and network constructs as predictors and "ethics" (non-network construct) as the predicted variable under the scope of "social capital research" in the organization context (as proposed by CARPENTER *et al*., 2012).

Appendix A presents a print-screen of the web data collection tool that includes the survey scales and the experiment that was used to measure ethical behavior. Respondents could complete the survey in approximately 25 minutes and could view a progress bar of answered questions. The language of the study was English. The survey had 56 items, plus the ego-network, which varies from

five items (minimum, if respondent answered only one alter) to 35 items (if respondent answered five alters). The experiment consisted of one screen, which presented 12 activities that had to be finished within three minutes. Table 8 presents a summary of items per scale, the ego-network and the experiment, as well as the reference of key studies that used the scale/experiment. Ethical intentions and behavior measures were adapted from the original form presented in previous studies.

	Scale	Number of items	References
Ego Network	Alters Ego-Alters Alter-Alter	up to 5 items (minimum 1) for each alter, 4 items (4 to 20 items) 0 (only one alter) to 10 items	Burt (1992); Burt at al. (2000); Seibert et al. (2001); Obstfeld (2005) Merluzzi and Burt (2013); Ma et al. (2011)
Self-monitoring	Self-monitoring	5-Likert scale, 25 items	Snyder (1974); Oh and Kilduff (2008)
Future Orientation	Future Self-Continuity Future Time Perspective	7-Likert scale, 1 item 5-Likert scale, 13 items	Bartles and Urminsky (2011); Hershfield et al. (2012) Zimbardo and Boyd (1999)
Ethical Intentions (adapted)	Scenario 1 (Dilemma) Scenario 2 (Competitor) Scenario 3 (Bribery using partner)	4-Likert, 2 items 4-Likert, 2 items 4-Likert, 2 items	Flynn and Wiltermuth (2010) Glover et al. (1997) Glover et al. (1997)
Ethical Behavior (adapted)	Experiment	12 matrices to be answered in 3 minutes	Mazar et al. (2008); Wiltermuth (2011); Gino et al. (2011) ; Chen et al. (2013); Shu and Gino (2012)
Demographics	Age, Gender, Industry, Country of birth, Country of current firm, Hierachy, Number of years in the company, Number of years to be in the company	8 items	

Table 8 - Data collection summary
Source: Elaborated by the author

4.1.1. Social Network

4.1.1.1. Ego-network Data Collection: Question and Number of Alters

Based on Burt (1992), this study uses an egocentric social network survey to collect data about the respondent network. Egocentric network designs collect data about the relationship of a specific individual (ego) and the other individuals (alters) to whom they are connected. Respondents are asked to list the name (by

initials) of those "who are important sources of professional advice (whom you approach when you have a work-related problem or you want advice on a decision you have to make)."

This description has as a theoretical basis that there are different types of networks (IBARRA, 1992; POLDONY and BARON, 1997; BURT, HOGARTH and MICHAUD, 2000; JONES and VOLPE, 2011) and that this is a network relevant for ethical decision-making. This study follows the nominalist approach to collect network data information, which posits that each network question generates its own network, which in turn has its own structure and implications and outcomes for the individuals pertaining thereto (BORGATTI and HALGIN, 2011; CAO, SIMSEK and JANSEN, 2012).

For each contact in the network, the individual gives information about the strength and diversity of their relationship: strength of connection (close, less close, weak), gender, function (similar function or different function) and level in hierarchy (lower, same or higher). In addition, respondents are asked to indicate how strong a connection the alters have to each other: close, less close, weak or avoid (definitions for each type of relationships are based on Burt's, 2013, material).

This study defined five as the maximum number of alters a respondent can answer, based on a comparison of survey questions from some relevant empirical studies (POLDONY and BARON, 1997; BURT *et al*., 2000; SEIBERT *et al*., 2001; ANDERSON *et al*., 2008) as well as research about the reliability and validity of ego-network numbers of alters (MARSDEN, 2012; MERLUZZI and BURT, 2013).

Merluzzi and Burt (2013) answered the question "how many names" in a study by analyzing network effects on achievement and came to the conclusion that "five names" is the cost effective number to be requested. Marsden (2012) discussed how respondents became quickly bored answering more than four alters (WHITE and WATKINS, 2000) and that "acceptably reliable measure of network density and composition (of *name interpreters* surveys, that is ego-alter and alter-alter data) are often available from data on only three to five alters (MARSDEN, 1993)." Ma, Huang and Shenkar (2011) recently reviewed the literature on reliability and validity of ego-centered network measures; however, it is important to note that none of the studies was conducted in South American countries.

Ma *et al*. (2013) argued that ego-centered network data are perceived network rather than the actual network (KRACKHARDT, 1987), but rates of reciprocation are sufficiently high to show that the measures reflect more than ego's perceptions. Xiao and Tsui (2007) argued that even if the previous mentioned biases exist in the ego-centered network measures, the bias could function the same way across all respondents and should not have impacted the analysis.

4.1.1.2. Social Network Measures

This study uses different measures of social network structure (although usually correlated) as input to the structure equation modeling and additional analysis as needed. Constraint and centrality were calculated using Ucinet software (BORGATTI, EVERETT and FREEMAN, 2002), briefly discussed in section 4.1.1.3.

Constraint: This is Burt's (1992) structure hole index. A network concentrated on few contacts (contacts among ego and alters and among all alters) means few structural holes. The constraint index varies with three conditions: network size (larger networks are less constraining); density (networks of more strongly connected contacts are more constraining); and hierarchy (networks in which all contacts are exclusively tied to a single contact are more constraining). "Structure Holes" is calculated using the ego-network data as 1 – Constraint (BURT, 1992; BURT, 2005), where the Constraint index, is

$$C_{i,j} = \sum c_{i,j} = (p_{i,j} + \sum_q p_{iq} p_{qi})^2, \; q \neq i,j, \; P_{i,j} = z_{i,j} / \sum_q z_{iq},$$

$z_{i,j}$ varies from zero to one and describes networks time and energy in contact network j. Burt (2007) also found that brokerage could be measured with designs in which data are limited to an immediate network.

Many studies use network density to capture the degree of connectivity within a network and it is measured by the ratio of the number of actual ties in a network divided by the number of all possible ties. For an undirected network with n nodes, the number of possible ties is equal to n(n-1)/2. This formula represents the level of cohesion necessary for coordinated action, and can be seen as a proxy to structure holes (POLDONY and BARON, 1997; OBSTFELD, 2005). When density is high, there are few structure holes; a structure hole exists when an ego has ties to other alters who are not connected among themselves (ZHOU *et al*., 2009).

It is very important to notice that although the density measure is correlated to constraint, they are not the same in the sense that, in a full closure network, the former does not vary as the number of alters increase. Besides, density in an ego-network measures the relationship among alters and does not measure the ego-alter's relationship; that is, density is zero in a network of only one alter or in networks where ego has full centrality, different from the measure of constraint. For example, in an ego-network in which the ego has a single alter, in a close relationship, constraint will measure one, but density will measure zero. As soon as other alters are included in full closure (all alters have ties to all the other ones) density remains one, but constraint reduces its value. A similar effect occurs in full centrality of ego: if there is only one alter, constraint measures one, but density measures zero. Including other non-connected alters, constraint reduces, but density remains zero.

Burt's (1992) argumentation is that constraint captures better the network size as, even in a full closure, the level of information begins to vary and then constraint should diminish. So considering that this study is interested in unethical action, and that closed and smaller networks are easier to control than networks that have many alters, constraint is a better measure than density.

Centrality: Borgatti (2005) suggested that centrality – which is the shape of the distribution of social ties among network members – is one of the most studied concepts in social networks. Indeed, many measures have been developed (degree centrality, closeness centrality, betweenness centrality, information centrality, eigenvector, etc.), although different measures of centrality make different assumptions about the flow in the network.

Some scholars have suggested using different measures of centrality, such as Freeman's (1979) measures (betweenness, closeness and degree). However, Borgatti and Everett (2005) explained that closeness centrality is not applicable to ego-networks. In addition, they did not recommend normalizing centrality scores (using the size of the ego-network or the whole network) in order to allow comparisons of ego-networks from different populations; further, the larger the size of the network (number of alters), the higher the probability the ego is a between actor (normalization would counter this effect).

This study uses betweenness centrality of ego, as a high betweenness is highly correlated with having many structural holes (BURT, 1992). As Flynn and Wiltermuth (2010) argued, betweenness centrality, defined as "the fraction of shortest paths between dyads that passed through a focal individual" is "well suited to capture the control of information in advice networks and may be particularly relevant source of power that pertains to ethical decision-making in organizations." The betweenness formula gives the expected value of the number of times something reaches a node in a certain flow process, and is defined by

$$b_k = \sum g_i k_{,j} \ / \ gij, \text{ varying from } i, j,$$

and where b_k, is the betweenness of node k, $g_{i,j}$ is the number of geodesic paths from i to j, and $g_i k_{,j}$ is the number of geodesic paths from i to j that pass through k (BORGATTI and HALGIN, 2011).

Among the empirical articles of the social capital literature that study organization ethics, few used network structure measures. Flynn and Wiltermuth (2010) used Freeman's (1979) betweenness centrality (although they used degree centrality and closeness centrality, no result was found with these other measures); Bizzi (2013) used Burt's (1992) constraint, but in an aggregated form to measure group brokerage allowing a multi-level analysis; Lee (2013) used degree centrality (FREEMAN, 1979).

Diversity of Contacts and Range of Contacts. Following Seibert *et al*. (2001), this research measures diversity of contacts (function and organization level of alters compared to ego). This is in line with Lin's (2001) social resource theory that focuses on the content of the network. This information, along with gender diversity, can also give support to analysis of similarity (through cohesion or structural equivalence) and homophily influence on attitudes (BURT, 1987; BRASS *et al*., 1998; LIN, 2001; MCPHERSON *et al*. 2001).

4.1.1.3. The Ucinet Software and Examples of Network Structures

Constraint and centrality measures were calculated using the free software Ucinet (BORGATTI *et al*., 2002), a computer program designed specifically for personal network analysis (HALGIN and BORGATTI, 2012; HANNEMAN and RIDDLE, 2012) and discussed in the next section. This software has been previously used in social capital and network business research (e.g. OBSTFELD, 2005).

Each respondent network matrix was entered in the Ucinet software (BORGATTI *et al*., 2002) using the feature "Data → Data Entry → Matrix editor". The diagonal of the matrix was set to zero, and ego-alter and alters-alters relationships were dichotomized: close = 1, and less close/weak/avoid = zero. Figure 9 shows the print-screen of EGO_C network data entry.

Constraint and betweenness centrality measures were calculated using the menu option "Network→ Ego Network → Structure Hole." The "NetDraw" option was used to draw the networks examples displayed in Figures 10 and 11 in the next section.

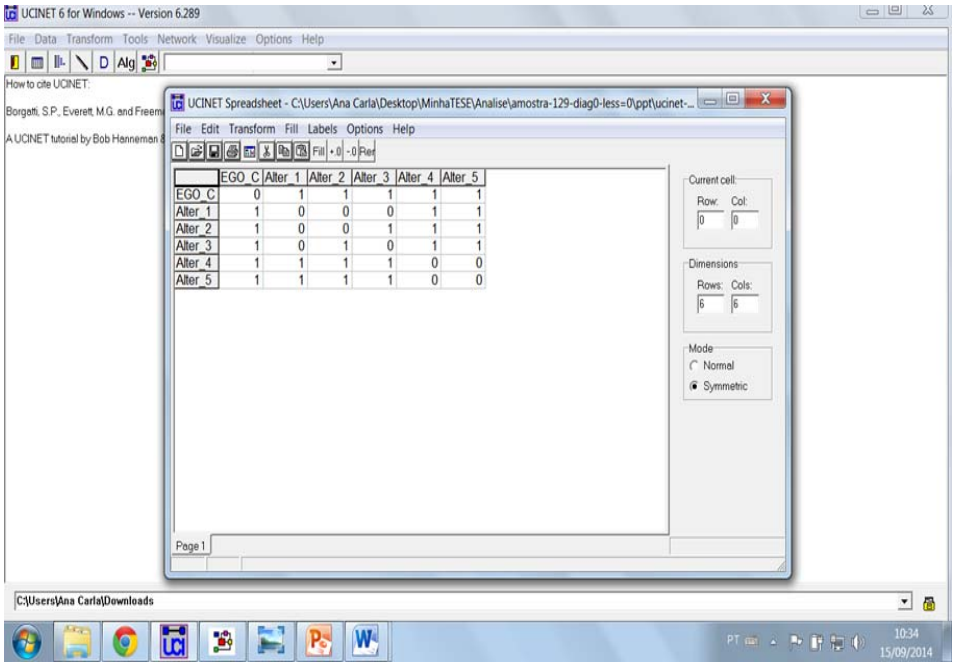

Figure 9 - Ucinet software network data entry tool
Source: Elaborated by the author

Figure 10 presents the network structure of two individuals, EGO_A and EGO_B. Both egos have five alters and strong ties (close relationship) to these alters, but they have opposite closure (closeness) in their network. EGO_B, on the right, has full closure: all alters are connected to each other in strong relationship. That is, this ego has no centrality at all in his/her network as all alters can talk to each other without needing ego as a mediator; in other words (based on structure hole theory), EGO_B has a constrained network in the sense that all information is the same and has high redundancy.

On the left side of Figure 10, EGO_A has a high central position (in fact, it has the maximum centrality possible in a five-alter network). That is, EGO_A has no closure at all, and can act like a broker. For example, for ALTER_1 to communicate with ALTER_2, he/she needs to go through EGO_A.

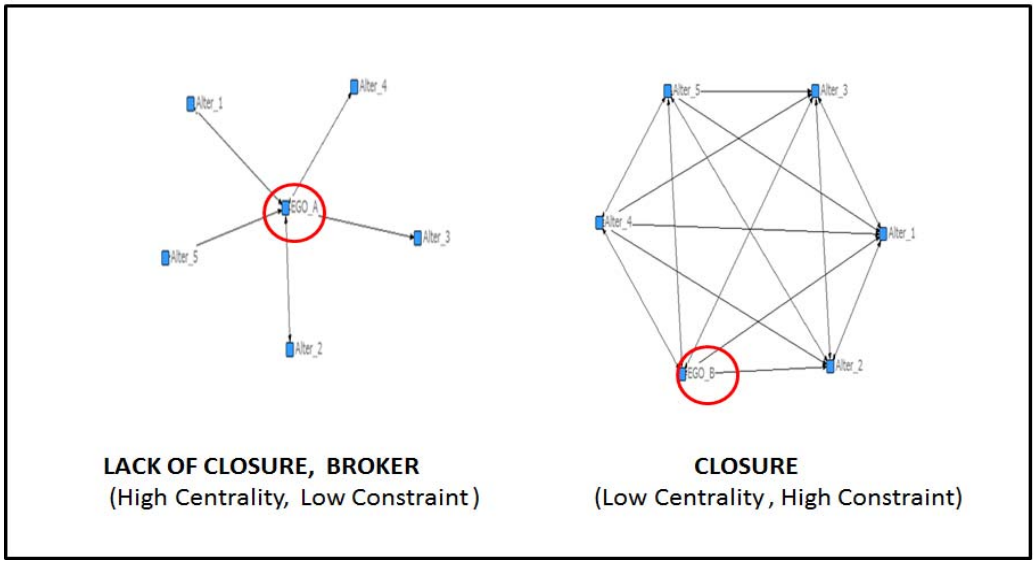

Figure 10 - Example of opposite network closure
Source: Elaborated by the author

Figure 10 presents the maximum difference between two egos, considering the relationship among the same number of alters; there is, however, a range of network structures between these two. For example, Figure 11 shows that in EGO_C's network ALTER_1 has no connection (tie) to ALTER_2 and ALTER_3, as well as ALTER_4 and ALTER_5 who do not have a tie. The methodology section describes in detail the two measures, centrality and constraint, used in this research.

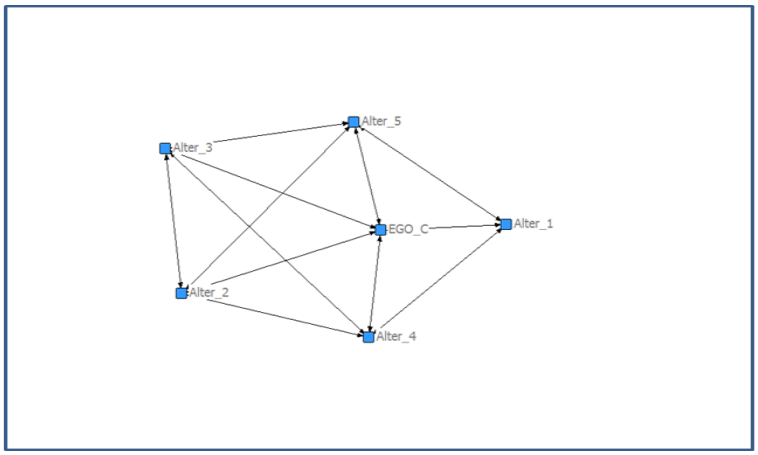

Figure 11 -Network Structure without full closure
Source: Elaborated by the author

4.1.2.
Self-monitoring

This study uses the 25-item self-monitoring scale (Snyder, 1974) in the continuous scoring format, as some of the recent research that investigated social capital and self-monitoring used the continuous scoring format (e.g. Oh and Kilduf, 2008 used the 25-item). The meta-analysis of Day *et al*. (2002) showed that the continuous form is more reliable than the true/false scale. The scale (Table 9) is written in the direction of high self-monitors, and items 1, 2, 3, 4, 9, 12, 14, 17, 20, 21, 22 and 23 have to be reversed. The scale uses a 5-point Likert scale varying from strongly disagree to strongly agree.

In addition, scores for the self-monitoring sub-dimensions were calculated for additional analysis, following Burkley (2010), who proposed that the sub-scales – Acting, Extraversion and Other-Directedness – are the most accepted. These sub-scales are comprised of the following items: a) Acting: items 5, 8, 18, 20 and 24; b) Extraversion: items 12, 14, 20, 21, 22 and 23; c) Other-Directedness: items 2, 3, 6, 7, 13, 15, 16, 17, 19, 23, 25. Burkley (2010) also suggested that item 23 be removed from sub-scale other-directedness as it is the weakest item, but to retain it as an indication of Extraversion because it is among the strongest representing Extraversion. (This study also tested the 18-item version of this scale – a reduced version of the 25-item version; however, the reliability was reduced to 0.75).

Item	Self-Monitoring 25-item scale
1	I find it hard to imitate the behavior of other people.
2	My behavior is usually an expression of my true inner feelings, attitudes and beliefs.
3	At parties and social gatherings, I do not attempt to do or say things that others will like.
4	I can only argue for ideas which I already believe.
5	I can make impromptu speeches even on topics about which I have almost no information.
6	I guess I put on a show to impress or entertain people.
7	When I am uncertain how to act in a social situation, I look to the behavior of others for
8	I would probably make a good actor.
9	I rarely seek advice of my friends to choose movies, books, or music.
10	I sometimes appear to others to be experiencing deeper emotions than I actually am.
11	I laugh more when I watch a comedy with others than when alone.
12	In a group of people I am rarely the center of attention.
13	In different situations and with different people, I often act like very different persons.
14	I am not particularly good at making other people like me.
15	Even if I am not enjoying myself, I often pretend to be having a good time.
16	I am not always the person I appear to be.
17	I would not change my opinions (or the way I do things) in order to please someone or win their favor.
18	I have considered being an entertainer.
19	In order to get along and be liked, I tend to be what people expect me to be rather than anything else.
20	I have never been good at games like charades or improvisational acting.
21	I have trouble changing my behavior to suit different people and different situations.
22	At a party I let others keep the jokes and stories going.
23	I fell a bit awkward in company and so not show up quiet as well as I should.
24	I can look anyone in the eye and tell a lie with a straight face (if for a right end).
25	I may deceive people by being friendly when I really dislike them.

Table 9 - 25-items Self-monitoring scale
Source: Snyder, 1986

4.1.3. Temporal Orientation

This study adopts two measures for temporal orientation, related to two different constructs: future self-continuity and future time perspective. Future self-continuity is related to how on individual sees the *self* in the future, and not how an individual sees the future in general (ERSNER-HERSHFIELD *et al*., 2009; BARTLES and RIPS, 2010; BARTELS and URMINSKY, 2011). This was used in recent ethical decision-making research (HERSHFIELD *et al*., 2012). Time

perspective (ZIMBARDO and BOYD, 1999) can become a dispositional style "predictive of how an individual will respond across a host of daily life choices."

It is also important to note that in this study, there are four distinct individual variables of time: a) temporal orientation of the individual measured by future self-continuity; b) temporal orientation of the individual measured by the STPI scale; c) how long an individual has been in an organization; and d) what is the time horizon of the individual in the organization. The last two variables were collected in the demographics part of the survey.

Future Self-continuity: Future self-continuity is measured by the scale/question used by Bartles and Urminsky (2011), and has been used in ethical decision-making research (HERSHFIELD *et al*., 2012). However, there are limitations insofar as it is a single-item measure. In addition, its scale is very recent; in this regard, tests of validity of a construct are a continuous process (NENKOV *et al*, 2008). The respondent chooses one option that graphically represents the connection between the current self and the future self in answer to the question: "Think about the important characteristics that make you the person you are now – your personality, temperament, major likes and dislikes, beliefs, values, ambitions, life goals and ideals – and select the one diagram that best reflects your opinion about the degree of connectedness between your current and future selves (a future "version" of you in 10 years)."

Future Time Perspective: Future time perspective is measured in a 13-item, 5-point Likert scale; future sub-scale (from strongly disagree to strongly agree) of the Stanford Zimbardo Time Perspective Inventory (STPI scale), later changed to ZTPI version scale (KEOUGH *et al*., 1999; ZIMBARDO and BOYD, 1999). In the STPI future scale (Table 10), only item 6 has to be reversed to be in the direction of high future orientation. Similar to a self-monitor scale, it calculated the average score of the 13 items, and then was used as one of the factors in the structure equation model. The STPI scale was preferred to the later improved version ZTPI because it includes time pressure items.

Item	Future Perspective (STPI scale)
1	I believe that a person's day should be planned ahead each morning.
2	Thinking about the future is pleasant to me.
3	When I want to achieve something, I set goals and consider specific means of reaching goals.
4	Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.
5	It seems to me that my future plans are pretty well laid out.
6	I think it´s useless to plan too far ahead because things hardly ever come out the way you planned anyway.
7	It upsets me to be late for appointments.
8	I tend to lose my temper when I´m provoked.
9	I get irritated at people who keep me waiting when we´ve agreed to meet at a given time.
10	I complete projects on time by making steady progress.
11	I make lists of things to do.
12	I keep working at a difficult uninteresting task if it will help me get ahead.
13	I am able to resist temptations when I know there is work to be done.

Table 10 – Future 13-items STPI sub-scale
Source: Snyder, 1986

4.1.4. Ethical Intentions

Three ethical business scenarios based on previous literature are included in the survey. In all scenarios, the respondent had four options to answer: definitely not, probably not, probably yes, definitely yes. The first scenario was adapted from Flynn and Wiltermuth (2010), but is an ethical dilemma (that is, a "right versus right" dilemma, in this case truth versus loyalty). It was selected to be the first scenario in order to suggest to the respondent that there are no right or wrong answers and to try to reduce the social desirability bias in the other scenarios, which present financial/career interest against ethical concerns.

Dalton and Ortegren (2011) discussed the importance of controlling for social response bias in ethical decision-making research, especially in studies that used gender variables, given that females are presumed to respond with a more social responsive bias than are males. However, Uziel (2010) suggested that "the way to correct for socially desirable response bias in self-reports is probably not by statistically controlling for results on another self-report measure (…) such a procedure does more harm than good in removing valid variance of unknown magnitude." This study does not use any additional scale to control for response

bias, but it does include an experiment to test ethical behavior, which will be discussed in section 4.1.5.

The second and third scenarios were adapted from Glover *et al*. (1997): the second presents an ethical decision to be made regarding a competitor, and the third presents a decision to be made regarding the engagement with a partner who uses bribery. The respondent answers two questions: the first question relates to the ethical decision that needs to be made. The second relates to silence about the decision or sharing the decision with other people in the organization.

First Scenario (Dilemma): Your colleague, who you consider to be very close to you, is looking to hire a new employee in her team. She has identified an external candidate she would like to hire, but company rules require her to consider internal candidates first. She has asked you not to disclose to people within the company that she has already picked out as an external candidate for the position. However, you know two employees in your area who would like to have this job and they are thinking of applying to the position. Would you advise them not to apply to the position? If they asked you directly if your colleague has already picked someone for this position, would you tell them?

Second Scenario (Competitor): You are a newly appointed marketing manager of your company and you want to make a good impression with your boss with your first competitor marketing plan. You decide to attend the annual industry association meeting to have a clearer understanding of your competitor's strategies. You and the marketing manager of your main competitor leave the conference meeting at the same time. He gets off the elevator at his floor leaving you alone to think about the fact that you have not even started your plan. You look down and discover that your competitor has dropped one of the copies of their marketing and sales plan. Would you look at the competitor's marketing plan before you returned it? Would you tell, if asked, how you got the competitor's data?

Third Scenario (Bribery through partner): You are working on a sale of equipment produced by your company ZMT to a major international customer. This sale is particularly important for you and for the company because ZMT is currently experiencing very critical difficulties. You have been suggested to work on the sale together with a company that is part of your company's partner alliance. This morning, however, you received information that this partner, who is the key liaison with the customer, has committed, with no written agreement, a series of payments to various people in order to secure the contract. These people range from intermediaries to buyer representatives of the government customer. You and your company will not be involved directly in these payments. This contract is crucial to ZMT, as it can avoid layoffs (including part of your team) and secure a better position against competition. Would work with this partner? Would you tell someone in your organization about the behavior of this partner?

4.1.5. Ethical Behavior – an Experiment

To measure ethical behavior, the "matrices cheating task," based on a laboratory experiment proposed by Mazar, Amir and Ariely (2008), was employed. This task has been recently used in relevant ethical decision-making experimental research (GINO, SCHWEITZER, MEAD and ARIELY, 2011; SHU, GINO and BAZERMAN, 2011; WILTERMUTH, 2011; GINO and GALINSKY, 2012; SHU and GINO, 2012; CHEN, TANG and TANG, 2014).

The respondents see in one screen 12 matrices of 10 three-digit numbers (e.g. 1.67) and are asked to find, for each matrix, two numbers whose sum is exactly 10. The respondents can answer the matrices in any order and the task takes three minutes maximum (see Figure 12). In order not to influence the respondent to see the task as requiring any math ability, the matrices were called "boxes," although Chen *et al*. (2014) reported in their experiment pilot that the students did not consider the task as a measure of math ability or intelligence.

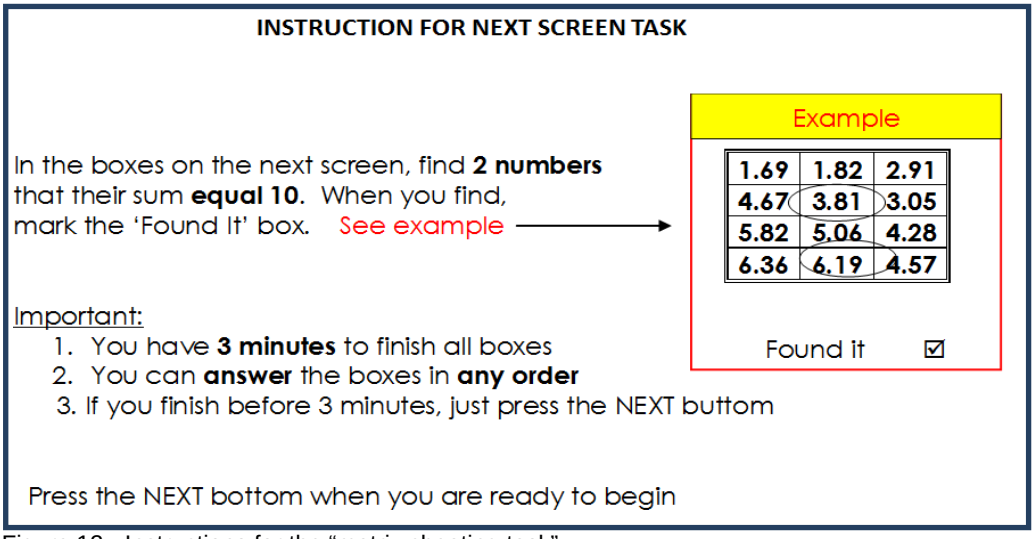

Figure 12 - Instructions for the "matrix cheating task"
Source: Elaborated by the author

Following Wiltermuth's (2011) on-line implementation of the task, the respondent is not asked to circle the numbers whose sum is 10, but merely to check the box "found it." He explains, "as such, participants were led to believe that the experimenter could not check whether they actually solved each matrix that they indicated solving. Unbeknownst to participants, however, some of the matrices did not contain number pairs that added to 10. If a participant reported finding the pair in one of these matrices it was clear that he or she cheated on that matrix."

However, there are three differences from the reported implementation of the "matrix cheating task." First, instead of using 20 matrices to be answered in 5 minutes, as in most of the previous experiments, this study uses 12 matrices to be answered in 3 minutes, in order to be able to list all matrices in just one screen and to reduce the amount of time spent in the task. Mazar *et al*. (2008) reported their sample did not complete more than seven matrices in the 20 matrices format, and Chen *et al*. (2014) also allocated only 3 minutes to complete the task. Second, there is no written number of correct answers (in most of the previous experiments, even when people answered the matrix on-line they gave the number of correct matrices in writing in a final paper). Figure 13 shows the matrices, with those having a solution checked.

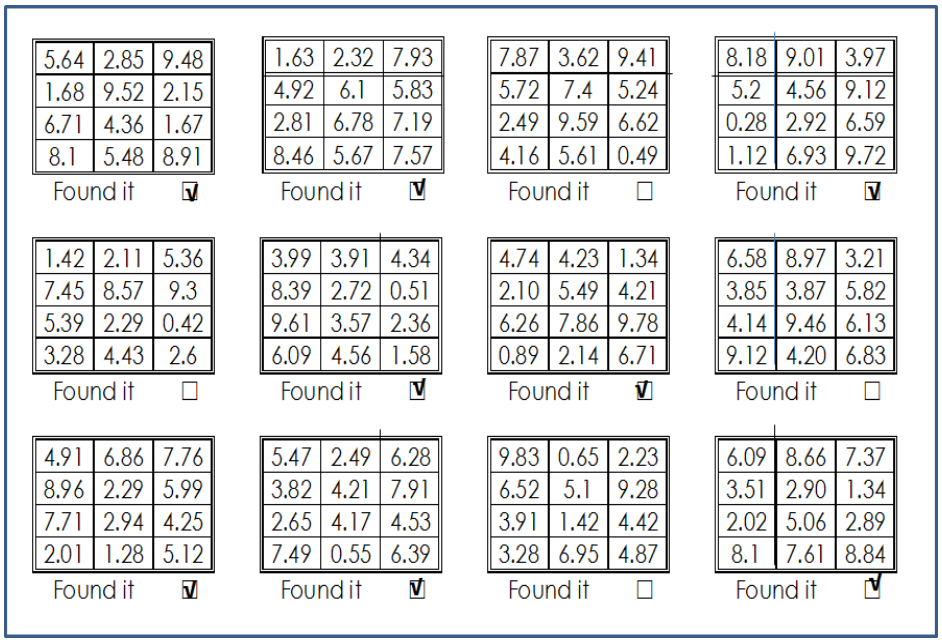

Figure 13 - The 12 matrices
Source: Elaborated by the author

The third change is that there is no monetary incentive for the task. In the original proposed tasks, participants received a nominal amount for each matrix solved. Incentives such as "One dollar per matrix solved" for the proposed professional sample (quite different than most of the studies that used student samples) is not reasonable; that is, people will not be willing to answer or not because of the money. The experiment is part of a bigger survey, so the monetary incentive, if applied, should be for the whole survey and not the task itself.

This study takes into consideration the conclusions of other studies that offering incentives can be counterproductive. O'Neil and Penrod (2001), using web-based lab experiments, found that offering payment influenced respondents' decisions on the study. They argued that offering monetary incentives for participating in a study could change a participant's intrinsic motivation to complete the task, which could increase measurement error. Other studies based on lab and field experiments found that incentives can have an unexpected result in the "wrong direction," so that no incentive is better than any incentive, and that too high or too low incentives affect the results of the experiments (GNEEZY and RUSTICHINI, 2000; HEYMAN and ARIELY, 2004; ARIELLY, GNEEZY, LOWENSTEIN and MAZAR, 2009; KAMENICA, 2012; PROMBERGER and MARTEAU, 2013).

Web-based experiments have some advantages and disadvantages compared to lab experiments (REIPS, 2002; BIRNBAUM, 2004; DANDURAND, SHULTZ and ONISH, 2008). Birnbaum (2004) argued that web-based lab studies can replicate lab results in many areas. However, he noticed that there is evidence in the literature that lab study results with undergraduates and people recruited via the web can be different. Nevertheless, reasons for such differences might include students' lack of motivation for the study (for instance, people are obliged to attend the lab for academic credit) or be explained by a higher level of people recruited in the web pool. That is, the reason behind the differences is due more to the sample than to the method.

4.1.6. Demographics Variables

The demographics section of the survey has the following variables: age, gender, country of birth, country of current work, industry of the firm, hierarchical position in the current firm (not supervisor, supervisor, manager, director, VP or above), tenure (numbers of years in the current firm), and expectation as to how long the respondent expects to remain at the current firm ("How long do you expect to be in your current firm from this point forward?").

4.2. Analytical Methods

This study uses three different analytical methods: structure equation modeling (SEM), cluster analysis and binary logistic regression. SEM, including confirmatory factor analysis (CFA), are used to analyze the proposed model of individual factors ("apples"), social networks ("barrels") and unethical cases ("cases"). Cluster analysis provides further comprehension of SEM results. Finally, binary logistic regression is used to analyze the matrix experiment, which was designed to measure unethical behavior but could not be included in the SEM model because of the reduced number of valid answers (85 of a total sample of 129).

The SEM model (Figure 14) follows the recommendations of Hair, Black, Babin and Anderson (2010) to achieve identification: 1) two constructs (social network and unethical intentions) are just-identified and one construct (individual factors) is over-identified; 2) full model is identified as the degree of freedoms are higher than the free parameters to be calculated. They suggested that sample size should be about 150 for a model of seven or fewer constructs (none under-identified) and with modest communalities of about 0.5.

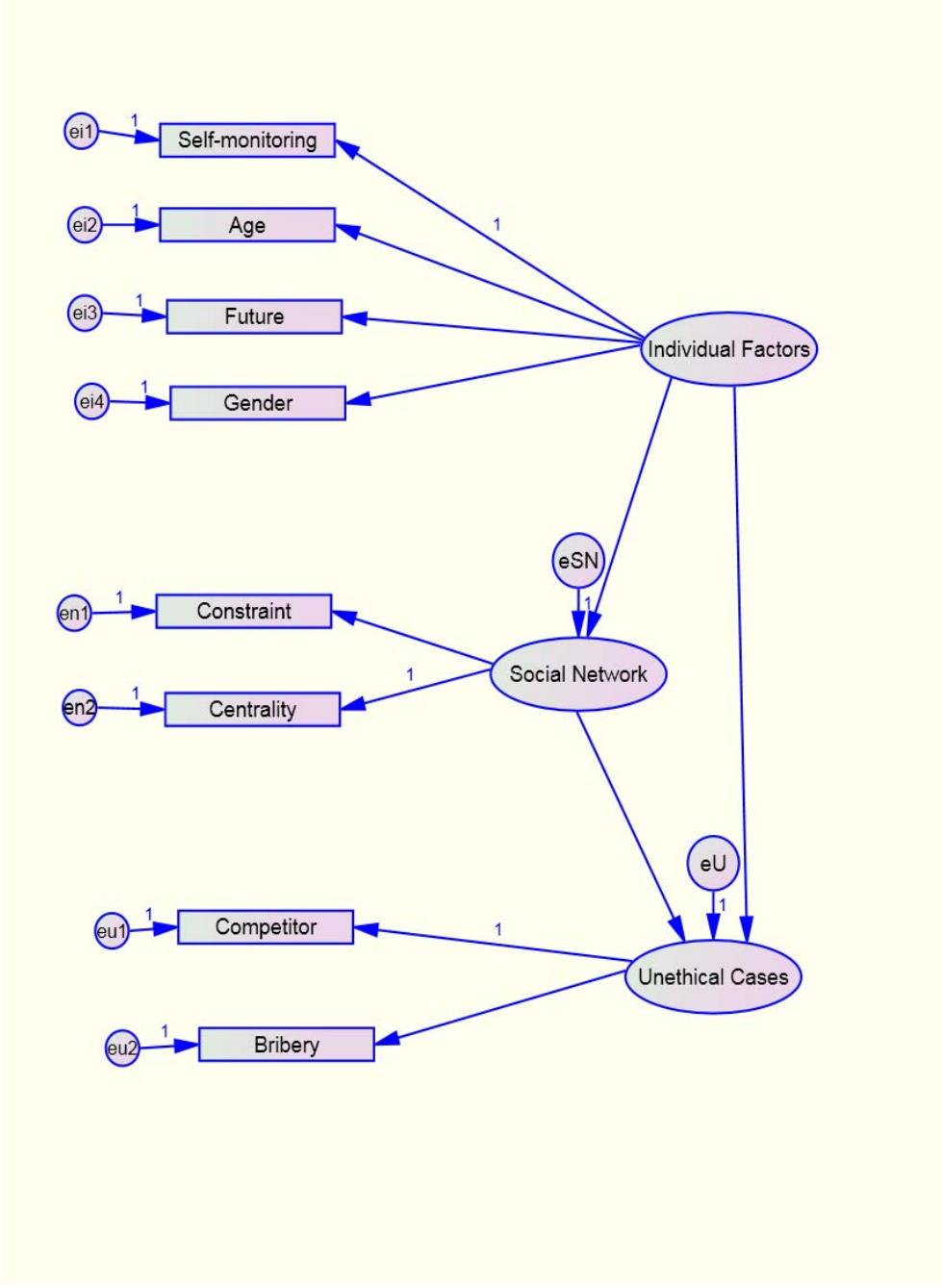

Figure 14 - SEM proposed model
Source: Elaborated by the author