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The Effects of Multi-Dimensionality on Agency Theory

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INDEX

1. INTRODUCTION

The following thesis studies the effect that the presence of a multi-dimensional performance context has on the Agency relationship that arises in a contractual agreement between a principal and an agent. In particular, it analyzes whether the presence of more than one dimension of performance to be achieved by the individual representing the agent confirms or denies the critiques that the Agency Theory has been subject to over the years, in particular the ones referring to "Other regarding" behaviors such as the principles of Reciprocity, Fairness and Social norms.

One of the pillars of the Standard Economic theory, particularly important in the interactions between individuals within the boundaries of an organization, is the so called "Agency Theory". This theory studies the behavior of two individuals, an "agent" and a "principal", engaged in a contractual relationship where the former is delegated one or more activities on behalf of the latter. However, according to this theory, due to the presence of a misalignment of goals between the two individuals and conditions of uncertainty and rationality, the individual acting as the agent is motivated to deviate from his responsibilities towards the principal and to act according to what is best for his own personal interests. By elements of uncertainty the theory refers to the asymmetry of information that arises from the impossibility of the principal to constantly monitor if the agent is carrying out his job or not, and the possibility of unpredictable events occurring (ex. environmental factors, etc.) which are by no means related to the activities carried out by the agent. Due to this situation, the agency theory underlines the cruciality of the principal's implementation of the most appropriate compensation and monitoring schemes, in order to motivate the agent to exercise the highest level of effort and to align the interests of the two parties.
While on one side the Agency theory focuses on the idea that the agent will only behave according to what is most rational for them, throughout the years it has been subject to a variety of critiques which state the contrary. In particular, the abstract focuses on three behaviors referred to as "other-regarding" attitudes, which follow the principles of Reciprocity, Fairness and compliance with Social Norms. According to these theories, individuals do not always behave selfishly and according to what is most rational for them but are strongly driven by their perceptions on the context and the individuals they are interacting with. If for example an agent feels that the principal is behaving fairly towards them, such as compensating them correctly and providing the appropriate working

conditions, they will reciprocate that “fair” behavior by exercising a higher effort in order to achieve the principal’s goals. Vice versa, if the agent perceives that the principal is not behaving fairly towards them, he will reciprocate that negative behavior by exercising a low level of effort on the job. In addition, these critiques focus on the divergence from rational behavior due to the link between human attitudes and social norms, stating that individuals often follow these rules as “routine”, without giving too much consideration to the decision and choosing the alternative that doesn’t provide the highest utility.

As mentioned above, the Agency Theory has been subject to many discussions and critiques over the years, however, very few studies focus on its extension to multiple dimensions of performance. In fact, the standard agency relationship is based on a linear assumption under which the principal and the agent only have a single criterion they want to maximize: the level of profitability of the organization for the principal and his personal utility function for the agent. This is rarely the situation in reality though, given that there are often multiple tasks required to be carried out by the agent related to the multiple performance goals required by the principal. This element of multi-dimensionality is becoming particularly important in the recent years, where organizations are constantly striving to achieve an efficient level of quality, quantity and cost minimization, while also paying attention to environmental conditions, corporate social responsibilities etc.
Nevertheless, a factor which needs to be taken into consideration is the difference in the level of measurability of these dimensions; some may in fact be measurable with high or low levels of accuracy, while others may not be measurable at all.
Summing up all of these factors, the aim of this thesis is to analyze what would happen to the dynamics of the principal-agent relationship in a multi-dimensionality context; in particular, in circumstances in which the agent is required to achieve more than one dimension of performance from the principal, but only one of those is directly measurable. The prediction of the standard agency theory is that the agent will shift all of his effort on the dimensions which are directly measurable by the principal, while providing the minimum effort possible on the “unmeasurable ones”. To analyze this, a field experiment has been carried out in the form of an anonymous survey to a group of 65 individuals working in high-level consulting companies around Italy. Given that consultants have to carry out activities on behalf of their client companies, the aim is to examine whether the respondents, when dealing with multiple dimensions of performance only one of which measurable by the client company, would

behave according to what the standard agency theory predicted or whether they would follow the "other regarding" behaviors highlighted by the critiques.

2. AGENCY THEORY

The Agency theory is considered to be one of the most important theories in the managerial and economic literature and it is acquiring an increasing importance in more academic fields and forms. Considered as one of the most controversial explanation of relationships between individuals, it is also one of the guiding principles on the mechanisms of interactions between individuals internal to an organization.

The issue was first raised by Cyert and March (1963) as a question to why organizations behave differently from what market relations predicted; it was then expanded into several economic theories which lead to the principal-agent relationship. Some economists focused on finding a solution to the divergence between organizational behavior and market relationships through phenomena such as Economies of Scale (Robinson, 1934), the limits that firms have to deal with (Coase, 1937) or by studying the boundaries that arise when dealing with information (Simon 1945,1955). In 1958, March and Simon introduced the argument of "conflicts of interest" within individuals inside an organization. Finally, research on the topic lead to the conclusion that the difference in organizations behavior and the marketplace has to do with incentives and incomplete information. Therefore, as a result of all of the arguments suggested throughout the years, Agency Theory can be defined as the study of an organization's behavior in the presence of selfish individuals, conflicting goals and incomplete information.

More specifically, Agency Theory represents the analysis of the problems and solutions that arise within an agency relationship. The one between a principal and an agent is a very complex relationship that arises between two parties, where the one designated as the Agent acts for, on behalf of or as a representative of the other, labeled as the Principal, in a decision-making environment. At the basis of this relationship, lies the act of delegation of a certain activity from the principal to the agent, which gives birth to expensive incentive alignment problems. (D. Levinthal, 1988)

The Principal Agent relationship is considered to be universal, as it can be applied to a variety of different fields and shown through a series of examples such as:

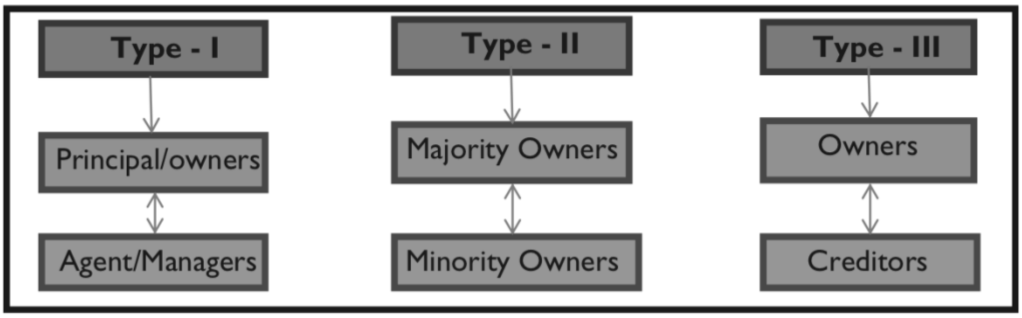
1. Employee-Boss Agency problem: where a boss (principal) wants his employees (agent) to work hard on the tasks he believes are beneficial for the job, while the employees may have different ideas based on what they *like* to do;
2. House seller-Real Estate Agent agency problem: where the house seller (principal) wants the agent to put in his/her best effort to sell the property at the highest possible price, while the agent may want to focus on selling other houses first or waiting for the customers to come along rather than looking for them (Posner, 2000);
3. Doctor-Patient Agency problem: where the doctor (agent) is more informed than the patient (principal), so it may be difficult for the latter to find out whether the former is fooling him by prescribing costly and useless medical care (Arrow, 1963).

A relevant factor which is present in all of the examples mentioned above is the presence of an asymmetry of information. In fact, one of the two individuals, typically represented by the agent, is more informed than the other and uses this situation to his own personal advantage. As explained later on the abstract, the lack of information is in fact one of the main elements characterizing the Agency relationship.

2.1 Classification of Agency Relationship:

A significant number of economists have focused on analyzing the Agency Relationship inside organizations in order to get a clear understanding of the driving mechanisms that determine interactions between the people involved in it. In particular, the "Theory of the firm" describes a business as a "Black box", managed in order to convert the resources it has at his disposal (inputs) into a final output (such as final goods and services), with the only scope of maximizing its profitability (Debreu, 1959). However, this theory has encountered some constraints with the introduction of Berle and Mean's (1932) concept of separation between "ownership and control" within the corporate governance of an organization. This concept is based on the divergence in the roles assumed by the shareholders and the managers. In fact, the former only assume a "passive" role in the administration of the organization due to their low authority power; while the latter represents the individuals that deal with the actual running of the operations within the company.
Studies that apply the agency theory to a company's corporate governance have categorized them into three types, as described in the figure below.

Figure 1: Type of agency relationships within an organization



Source: Panda, B. and Leepsa, N., 2017. Agency theory

As illustrated above, the second type of agency relationship between majority and minority shareholders (La Porta, Lopez-de-Silanes, and Sheifer; 2000) represents a situation where the former has a higher voting and decision-making power than the latter. For this reason, majority shareholders will try to exploit personal benefits from the higher level of authority that they have. Moreover, these relationships often face a divergence in the way the two groups of shareholders want the organization to be managed in order to reach the highest level of efficiency, arising from a discrepancy in their interests. In fact, if a majority shareholder has the possibility to generate some profits when the company is going in a particular way, he or she will most likely enact that strategy even if it might not be the best solution for the minority ones. This situation allows majority shareholders to act in a way that focuses on what is best for themselves, hindering the interests of minority shareholders (Fama and Jensen, 1983). These types of conflicts of interest are very common in companies where there are few owners or in family businesses, where the family is the agent, clearly more informed and acting on what is best for their self-interests, and the minority shareholders are the principals (Demsetz & Lehn, 1985).

The third type of agency problem, between the shareholders and the creditors (Damodaran, 1997), arises when owners need to make decisions on new project financings. In this case, the creditor's objective is to contribute the funding and maximize the profits on that investment (with interests) in the shortest possible time. However, as in any agency relationship, the creditor cannot be sure whether the organization is being managed in the best possible way, so whether he will receive his money back or not. Contrarily, the owner's (principal) main objective is to receive the highest amount of funding possible. Subsequently, with the money raised from the creditors, owners may want to invest in risky projects that yield a higher return, negatively affecting the creditors due to the decrease in the value of debt caused by

the risk associated to it. In this way, if the risky investment goes well, the shareholders might receive important returns while the creditors will get the same fixed interest they would in a normal project; if the project is unsuccessful, the creditors might be the ones facing important losses. This conflict of interest situation is a very common phenomena within organizations that present high levels of debt in their capital structure. (Panda & Leepsa, 2017).
Moreover, this third type of situation can be further generalized to the relationship between owners and any kind of stakeholders (an individual that has a stake of interest within the organization), not only creditors. Owners may in fact decide to close down a manufacturing plant, negative affecting the well-being of employees, customers, providers etc.

As far as the first type of agency problem is concerned, in economic literature it is referred to as the "separation between ownership and control" and it represents the traditional example of Principal-Agent relationship which will be the focus of this abstract. It refers to the owner-manager contract, where the former (principal) delegates the daily activities to be carried out in his organization to the latter (agent). The underlying assumption is that the shareholder is a "passive" player in the operations of the organization due to its very low power of decision making, differently from the managers which carry out the majority of the activities. This relationship gets complicated due to the shareholder/owner's inability to constantly monitor what the manager is doing without incurring in any costs, thereby not knowing whether he is actually carrying out the job and if in the correct way, or whether he is acting against the interests of the business. In fact, because it is not his money to manage, the manager's incentives are very different from the ones of the owner, tempting him to take actions that might not maximize the performance of the organization but his own personal interests. (Berle & Means, 1932)

Among some examples of managers acting against the interests of the shareholders there are:

- Stealing funds: activities such as the illegal use of funds of the organization for personal benefits (M. Candi, 2015). It is the case of Parmalat, an Italian company listed on the stock-exchanged and managed by its founding family. What the managers did was an irregular transfer of all the capital of the organization to a firm completely controlled by the family;

- Excess expenditure: such as executives using the company's money to pay for unnecessary stuff like meals in expensive restaurants, good-looking secretaries, expensive offices; or taking advantage of the company's facilities (such as planes) for personal use;

- Empire building: through actions such as overinvestments, entrenchment, or irrelevant mergers & acquisitions moved by the desire to manage large and prestigious companies, and by the belief that the size of the company is directly proportional to the executive's paycheck. (Sheifer & Vishny, 1997)

These circumstances might in fact create an uncertain and ambiguous environment within the organization; in order to avoid the presence of the behaviors listed above, a solution to incentivize managers to act in the interests of the organization is required by the owner. This topic will be further analyzed later on in the abstract.

2.2 Main hypothesis behind Agency Models:

Like in any other theory, the principal agent one relies on a series of assumptions which provide foundation to it (D. Levinthal, 1988). These assumptions are:

1. The separation between the principal and the agent;
2. The presence of incomplete information (asymmetry): where one of the two parties is more informed than the other;
3. The presence of conflicting interests between the principal and the agent: which have two separate utility functions;
4. The presence of Rationality;
5. The presence of Uncertainty conditions;
6. The presence of different attitudes towards risk.

2.3 Incomplete information: Moral Hazard vs. Adverse selection

The first characteristic of the agency relationship is that the two individuals have different sets of information. Generally speaking, the term incomplete information refers to a situation in which two or more parties interact but knowledge about the other members is not entirely available to everyone. There are two main forms of asymmetries of information, moral hazard and adverse selection, whose difference arises from the timing of the decision. In fact, moral hazard problems take place after the decision is made (ex-post), while adverse selection occurs before (ex-ante). (M. Candi, 2015)

2.3.1 Moral Hazard:

This kind of information asymmetry takes place when the agent's behavior and activities cannot be *seen* by the principal. The concept of moral hazard is very important for insurers, which provide empirical evidence that if a person has a collateral against a stolen car, the probability of his car being stolen increases due to the fact he is less careful about it. Indeed, this lack of information highlights an important assumption on the trade-off between risk and incentives: if individuals are insured against risk, they are less incentivized to act for it.

In the owner-manager example, since the owner cannot be sure what the manager is doing, the latter could easily spend his time playing golf or going to expensive restaurants with his friends at the company's expenses. For this reason, it is important to provide the manager with some incentives linked to the company's performance such as stock options, performance bonuses or pension plans, which provide a division of the risk between the two individuals.

2.3.2 Adverse Selection

This type of information asymmetry, also called hidden knowledge, takes place when there is a particular factor that the agent is aware of but the principal is not. For example, during a job interview, the owner is only able to see certain signs of performance such as school grades or past work experiences but cannot measure what truly matters to him: whether the person is really suitable for the job or not.

An example of Adverse selection can occur in the IPO (Initial Public Offering) market, when companies could want to go public for three reasons: the need to raise new funds, the shareholder's desire to cash out or the unsuccessful performance of the company. Unfortunately though, investors cannot see the real reason as to why the company they want to invest in is going public, facing the risk of getting themselves into a bad business situation.

2.4 Conflicting goals

A second key assumption of the Agency theory is the presence of conflicting interests between the two individuals involved. One of the founding beliefs in economics is that specialization is beneficial and that the act of delegating a particular task to a person specialized in it creates some advantage. As Laffont and Martimort (2001) stated, the activity of delegation is valuable under conditions where there is a lack of time or knowledge for that specific task. However, if on one side there are benefits to the delegation of a responsibility, there are also some problems attached to it.

In the Wealth of Nations, Adam Smith stated that: “Being the managers of other people’s money rather than their own, it cannot be expected that they watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Negligence and profusion must always prevail in the management of the affairs of such company” (A. Smith, 1776, p.700). For this reason, the delegation of activities in situations where the interests of the two parties involved are not aligned may lead to efficiency losses. On the contrary, if both the agent and the principal were interested in achieving the same result, the agent would have no temptation in deviating from his responsibilities and the principal would be confident on the agent’s best behavior, given that it is also in his interest. For this reason, a situation of misalignment between the utility functions of the two creates the for need of an adequate incentive plan.

2.5 Rationality

Another crucial element in economic literature is the Rational Choice Theory, which states that the decisions and actions that individuals implement are purely driven by the idea of making income and profits. In fact, sociologists and economists supporting this theory suggest that behind every person’s actions there is a “rational” analysis of the costs and benefits associated to it. This analysis should allow people to predict what the consequences of the various conducts are and decide the best alternative based on what is most likely to provide them the highest level of satisfaction (Heath, 1976). Rational choice theory rejects the presence of any activity that is not entirely rational and pre-meditated or that is not aligned with the personal goals, utility and self-interests of the individual that is making the choice. To conclude, the rationality theory prescribes that individuals, based on the information that they have available on the alternatives, make choices driven by their personal goals and preferences.

Rational choice theory is applied in the principal-agent context by assuming that the two individuals are considered to be rational self-interested utility maximizers.

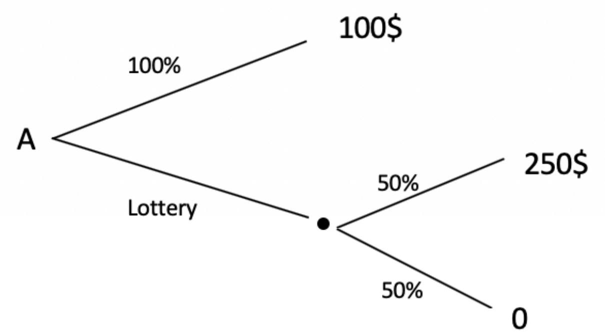
2.6 Uncertainty

Another main characteristic of the Agency relationship is the presence of uncertain conditions. These circumstances refer to the presence of “other elements” such as bad luck, natural disasters or unpredicted events, which can influence the final performance required by the principal, but that are absolutely not related to the activities carried out by the agent. It is important to keep in mind that without any information problem (asymmetry of information) the situation of uncertainty would not exist. In fact, if the principal was able to have complete information and a clear picture on the activities carried out by the agent, he would be able to tell whether an eventual negative outcome is given by a low-level of agent's effort or by unpredictable elements.

2.7 Risk Aversion

The last component of the Agency Theory is linked to the concept of uncertainty mentioned above and it is the attitude that the individuals involved in this type of relationship have towards risk. There are three preferences toward risks in uncertain conditions: risk aversion, risk neutrality and risk seeking, which are related to the decision maker's character and circumstances. (Kahneman and Tversky, 1992) These three conditions can be demonstrated through an example shown in the graph below.

Figure 2: Graphical representation of random vs. certain payoffs



Source: Watson, J., 2013. Strategy. 3rd ed.

Let suppose that an individual A needs to make a choice between a sure fixed payoff of 100$ and a "lottery" that provides 250$ with probability 50%, and 0 with probability 50%. Under the same expected utility, the individual is considered to be risk adverse if he prefers the sure payment rather than the lottery one, risk neutral if he is impartial between the two choices, and risk prone/seeking if he prefers the uncertain payoff.

In addition, the maximum amount of outcome that a risk averse individual is willing to refuse in order to receive the certain payment rather than the lottery one is said to be the risk premium. Obviously, the prediction is that a higher level of aversion to risk implies a higher amount of *risk premium* demanded by the individual.

The principal-agent relationship assumes that the two individuals have different risk preferences: the principal being risk-neutral and the agent risk adverse (Grossman & Hart, 1983). This difference creates an issue in the determination of incentives, which are decided by taking into consideration the agent's attitude towards risk and the amount of information available to the principal (information asymmetry).

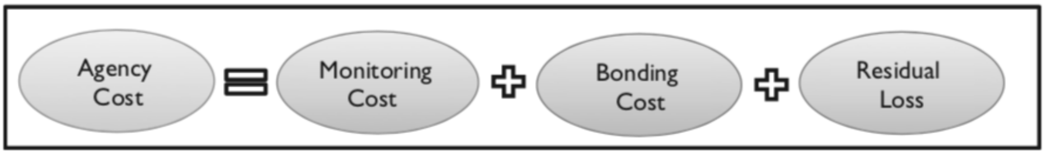
2.8 Contractual relationships:

In addition to all the characterizing elements of the Agency Theory listed above, another relevant factor is the presence of a contractual relationship between the principal and the agent. Contractual relationships are arrangements between individuals on how to cooperate on a set of activities for a certain period of time. They can arise in any kind of situation: between a company and its workers, a consultancy firm and its clients, between the doctors and the people being treated by them, etc. In Agency theory these kinds of relationships are assumed to be lacking substantial information, leading to problems of risk division between the two individuals. In fact, according to Hart (1995), contractual arrangements are incomplete and are not able to designate all of the kinds of situations that can occur. In particular, the principal cannot stop the agent from enacting a series of activities, because the former is not able to specify all the possible events that can occur in the contract, due to the presence of asymmetric information.

2.9 Agency costs

The combination of all the elements listed above are a green field for the introduction of Agency expenses. According to Jensen and Meckling (1976), agency costs are intra-firm expenditures that arise in an organization when there are conflicts of interest and information asymmetries between the principal and the agent. They are considered as the sum of monitoring costs by the principal, bonding costs of the agent and residual loss of the company arising from the conflict of interest between the two.

Figure 2: Agency Costs



Source: Jensen & Meckling, 1976

As the figure shows:

- Monitoring costs are the ones incurred by the principal in order to observe, examine and adjust the agent's behavior. These costs include the ones required to hire the Board of Directors (which enacts external monitoring activities) and other secondary activities;
- Bonding costs are the opposite of monitoring ones and represent the expenditures incurred by the agents in order to decrease the information asymmetry. These costs represent situations where the managers follow the rules and systems of the organization and ensure that they will not do anything to negatively affect the principal. In addition, they include the expenses undertaken by the agents to ensure that corrective action will be implemented if rules are not respected;
- Residual loss refers to costs associated to inefficient decisions implemented due to the divergence in the interests between the two individuals.

2.10 Solutions: Compensation schemes vs. Monitoring strategies

In order to avoid the increase of agency costs and to limit the consequences of uncertainty (information disadvantages), an alignment of the managerial interests with the ones of the organization is required. To enact this, principals need to create incentive aligning strategies and monitoring solutions that reduce losses deriving from agency costs within the organization.

2.10.1 Compensation schemes

For what concerns the incentive aligning strategies, compensation packages are the first instruments used. In fact, the principal's objective is to create a compensation package which stimulates the right amount of effort from the agent. However, the complexity of this task arises from the lack of information on two factors: the effort enacted by the agent and the uncontrollable variables (such as consumer demand, environmental factors etc.) (D. Levinthal, 1988). In fact, the owner cannot oblige the manager to exercise a specific effort, since the latter will always have the possibility to blame a negative performance of the organization on the uncontrollable variables. For this reason, the principal must solicit the manager's own interests through the appropriate compensation scheme and with the use of a specific incentive structure. (D. Levinthal, 1988).

Holmstrom and Milgrom (1991) state that the agent's wage (W) must include a potential fixed salary (W_0), plus a fraction β of the agent's total outcome (z) called "incentive intensity". Given that the effort (e) cannot be directly observable, if β is greater than zero the agent is inevitably subject to risk related to his compensation package. Therefore, the incentive intensity (β) has two main roles: to motivate the agent to work harder and to act as a collateral against the risk incurred. This incentive intensity element must take into consideration four factors:

1. Incentive elasticity of profits: because there could also be situations where increasing the incentives does not lead to higher effort from the agent;
2. Risk behavior of the individuals;
3. Agent's effort elasticity: the degree to which an individual can be incentivized. In fact, there can also be some agents that may not be easy to incentivize;
4. Measurability of outputs: there also exist profits that are difficult to measure and shouldn't be tied to compensation;

The "incentivization" of compensation is mainly done through the creation and distribution of very large and elaborated compensation packages. These packages are usually diversified: not only composed by a large salary but inclusive of stock ownership, pension plans and bonuses based on the performance. The objective is to create a type of compensation which connects the remuneration of the manager to the performance of the organization through a balance between a fixed compensation method and a variable one.

2.10.1.1 Fixed Compensation

Fixed compensation is determined on the basis of the industry or by taking into consideration comparable companies as reference points (Kerin, 2003). In some cases, this type of compensation is influenced by some characteristics of the organization and of the manager such as the size of the firm, the age of the agent, the educational degree, etc. The fixed one is the kind of salary preferred by managers, since it does not depend on the company's performance and allows them to receive the compensation in every possible event without incurring in any risks. According to Murphy (1998), and as mentioned above, managers (agents) are risk-averse, implying their preference towards an increase in the fixed salary compensation rather than the variable one.

In conclusion, given that fixed compensation is preferred by agents due to its risk-free nature and the fact that it does not depend on the performance of the organization (Harris and Raviv, 1979), it does not incentivize managers to reach good results. For this reason, the need of an additional variable compensation element is required.

2.10.1.2 Variable Compensation

A variable remuneration is an element of the compensation package which is strictly tied and dependent on the performance of the organization (thereby on the performance of the agent). These kinds of compensations can be composed of stock options, incentive plans, bonuses, pension plans, etc. A brief description on the different kinds of variable compensation and the possible risks associated to them will now be provided:

- *Stocks*: this compensation method aims at incentivizing the manager to do better by giving him an ownership position in the company. In this way, the risk is shared among the two individuals: in the eventuality of the manager making the wrong decisions his own value will also suffer from it.
  "A CEO once described how his view on of corporate expenditure changed after he bought 15% of the company's stocks. Every time he authorized a payment, he questioned himself whether it was really necessary or not" (M. Candi, 2015)

- *Bonuses*: are a compensation method based on pre-determined objectives that the manager is required to achieve in order to get the payment. These objectives can be distinguished into measurable (such as financial indicators, accounting values etc.) or non-measurable ones (such as client satisfaction).
  The issue arising from bonus compensation is that, instead of incentivizing managers, it may push them to corrupt and manipulate the financial statements of the organization, deteriorating its performance even more. In addition, accounting values are based on historical performance, and if the bonus is based on the performance of the previous years, managers may not be motivated to achieve the best results.

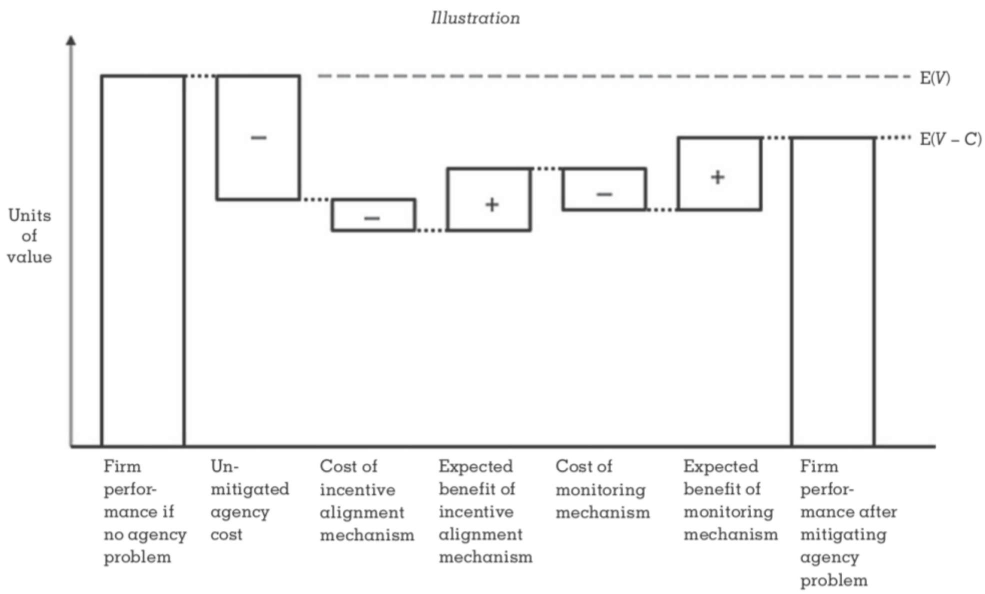
- A third type of variable compensation is the so-called long-term incentive plan (LTIP), which is similar to a bonus, whose aim is to motivate managers (agents) to create and maximize value for the owners, but based on a longer period of time. In this way, the agent's motivation to work better is extended.

2.10.2 Monitoring schemes:

A second solution to avoid agency problems and expenses is the implementation of monitoring strategies by the principal, allowing a decrease in the information asymmetry problem (Jensen and Meckling, 1976). In this way, owners have higher visibility on the actions actually carried out by the managers and on their managerial capabilities. At the same time, the managers, aware of the fact that they are being monitored, will behave according to the shareholder's best interests. However, there are also downturns of enacting monitoring strategies, which are not always considered to be the most efficient solution to agency costs given that the achievement of information completeness is costly and complex. Indeed, monitoring activities may bring to the decrease of agency costs on one side but imply the incurrence of other kinds of costs on the other. For this reason, a trade-off must be evaluated.

In conclusion, Hills & Jones (1992) suggest that a principal should spend an amount X_{ia} on incentive alignment mechanisms, in order to save (X_{ia} + Y_{ia}) of costs arising from the agent acting in his/her own best interest instead of the interests of the organization. The same rule applies to monitoring schemes, spending X_m on monitoring the agent in order to save (X_m + Y_m) of expenses from unseen agent actions.

Figure 3: Standard Agency Theory



Source: Bosse & Philipps, 2016

The figure above illustrates the evolution of an organization's performance starting from a situation in which there are no agency problems, and as a consequence no agency costs, and the expected value is E(V). Following, a representation of what the performance would be with the agency issues and no mitigation of them is displayed. After that, the figure shows what the total value of performance of the company would be with the mitigation of those costs (through a difference between the costs of incentive alignment and monitoring strategies and the benefits associated to them).

2.11 Game Theory Example of Principal-Agent Relationship:

To have a clearer picture of all of the dynamics that arise in an agency interaction, an example including all the main characteristics mentioned above will be provided in the game theory form.

Suppose the owner (O) of a large pharmaceutical company needs to create an effective marketing campaign for the new drug it is developing and is contemplating whether to hire an expert marketing manager. If the latter is hired he has to make a choice between exercising a large versus a low amount of effort on the job, which will be evaluated by the pharmaceutical company only in the future, precisely at the end of the project (whether the marketing campaign for the new drug will turn out to be successful or not). If the project is successful, the total outcome of the pharmaceutical company will be A; if not, it will be B (where A > B). The outcome of the marketing campaign is both a function of the hired manager's effort and of some random variables. In fact, if the manager exercises a large amount of effort, there is a 50% probability of the marketing campaign being successful; if he exercises a low effort, the project will fail with probability 100%.

Exercising a large amount of effort implies that the marketing manager will incur in a cost (c) in his utility conditions. Moreover, the contractual relationship between the two must be defined such that the manager's compensation is related to the total outcome of the marketing campaign but not on the total effort exercised.

Assuming that the marketing manager is risk averse, he's utility function will be:

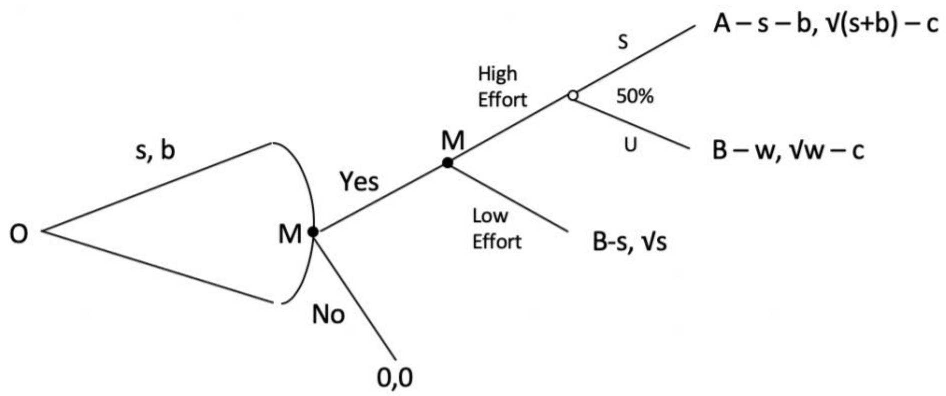
$$u_M(x) = \sqrt{x}$$

Assuming that the pharmaceutical company's owner is risk neutral, his utility function will be equal to:

$$u_O(x) = x$$

The figure below shows a graphical representation from a game theory perspective of the following situation:

Figure 4: Principal-agent Game



Source: Watson, J., 2013. Strategy. 3rd ed.

As the picture explains, at the starting point of the game, when the manager is offered the contract, the compensation includes the salary (s), which is a fixed element paid to the manager regardless of the outcome of the project, plus a bonus (b) as a reward which will be paid only if the project turns out to be successful.

Once the offer has been made, the manager (M) decides whether to accept it or not: if he rejects, both the players will have a payoff equal to zero, if he accepts, he needs to make a choice as to how much effort to exercise. In the case in which the effort exercised is low, the marketing campaign will surely be unsuccessful; this will provide the owner an outcome B minus the wage to be paid to the manager, and the manager an outcome $\sqrt{w}$ of fixed compensation.

If on the other hand the manager decides to exercise a high amount of effort, it encounters external factors which will determine with a probability of 50% whether the outcome of the project will be successful (S) or not (U). In the former case, the pharmaceutical company will earn an amount A to be deducted of the fixed wage plus the bonus paid to the manager and the manager will earn both the wage and the bonus (under his utility conditions) minus the cost he has incurred to exercise a high amount of effort. If the latter case occurs and the project turns out to be unsuccessful, the payouts will be the same as when a low amount of effort is exercised, with the exception that the manager also incurs in the costs (c) of exercising a high amount of effort.

3. CRITIQUES TO AGENCY THEORY

Just as there are many forms and extensions of the Agency Theory, during the years it has also been subject to a large number of criticisms. Many studies and school of thoughts have focused mainly on arguing its restrictiveness, highlighting the belief that it cannot be generalized and applied to every individual but only to a fragment of them. This section of the abstract will discuss into details the various critiques that question the credibility of the Agency theory predictions.

3.1 Criticism to the "Self-Interest" Assumption

As discussed in the first chapter of the abstract, one of the main characteristics of the Agency Theory is the assumption of Rationality. In fact, at the basis of a principal-Agent relationship lies the idea that the two individuals involved are rational and selfish, taking on behaviors that are only aimed at maximizing their own personal interests. However, this rationality element in particular has been the one which attracted a significant number of critiques doubting its integrity. In fact, the main issue arising from the application of the rationality theory on agency interactions is that it completely ignores drivers such as fairness and reciprocity in the daily decision-making processes of the two individuals involved (Bosse & Phillips, 2016) . Many economists challenge and deny the rational choice theory assumption by providing evidence that people often assist and care about the individuals they interact with and that they behave in manners that often do not lead to the maximization of their own utility functions. This does not mean that rational, selfish or opportunistic behaviors must be completely excluded, they in fact still represent important components of many theories; however, they must be considered only as some of the drivers that affect the behaviors of the population. In addition, evidence emerged on another important component influencing the everyday behavior and decision-making of individuals: the compliance with social norms (J. Elster, 1989). Empirical studies show that behaving according to social norms is becoming increasingly common in areas such as strategy, organizational behavior, economics, philosophy, sociology, etc. (Akerlof, 1982; Fehr & Gächter, 2000). Moreover, studies reveal that a large number of people is affected and motivated by the common beliefs and preferences of society (Fehr and Schmidt, 2006).

In the following section, a detailed analysis of the critiques applicable to the agency theory, and in particular to the rationality element of the theory, will be provided with a specific focus on the reciprocity theory, the concept of fairness and the behaviors with reference to social norms.

3.2 From Narrow self-interest to Bounded self-interest:

Bosse & Phillips (2016) argue the credibility of the Rational Choice theory applied to the agency relationship, suggesting that it does not reflect what really happens when a principal and an agent interact. Based on evidence on behavioral economics, their aim is to reevaluate the assumption that individuals are guided by a “narrow self-interest”, but from a “bounded self-interest” which is limited by the social norms and the principles of reciprocity and fairness. According to them, bounded self-interest is still focused on the agent’s motivation to maximize their own interests, as long as it continues to respect the boundaries of social norms and fairness. In fact, as Fong et al. (2010) and Greenberg (1990) state, “when actors perceive that a norm of fairness has been violated, they will seek to enforce that norm in subsequent interactions with the responsible party”. Consequently, if an individual feels like a person is not behaving fairly towards him, he will reciprocate and behave in a negative manner too; on the opposite note, if a person feels like someone is treating them fairly, they will act back in a positive way. The latter concept is called Reciprocity Theory.

3.3 Reciprocity Theory:

Once in their life, at least every person has heard the famous statement “An eye for an eye and a tooth for a tooth”; however, only few of them know that it is the basic principle of the Reciprocity Theory. A reciprocal behavior is the tendency of individuals to compensate good actions with rewards and to penalize the negative ones (E. Fehr & Gächter, 1998). When individuals in a competitive environment recognize a fair behavior from their opponent, they tend to compensate it with a positive reciprocal treatment; if the opposite occurs and they perceive a dishonest behavior, they respond with a negative reciprocal behavior such as a punishment. Indeed, we can say that there are two kinds of reciprocal behaviors:

- Positive reciprocity: the instinct and stimulus to act generously and gently towards individuals that have behaved in the same way;

- Negative reciprocity: based on the desire to get revenge and to punish a person that hurt you or did something bad to you.

Studies on this subject suggest that even if there is proof of the existence of selfish and rational individuals, whose only aim is to maximize their material payoffs and utility, reciprocity also represents an important driver in the everyday conducts and attitudes of individuals (E. Fehr & Gächter, 1998). In order to analyze this concept, a number of experiments have been implemented both on humans as well as on animals. De Waal (1991) for example, studied the behavior of Chimpanzees when it comes to sharing their food, which resulted in revealing that these animals are not intentioned to share their meal unless there is a preceding case of "food sharing" from the other party. Generally speaking, in the presence of two agents 1 and 2, the act of sharing something from 1 to 2 is significantly affected and positively correlated to the sharing from 2 to 1.

Evidence on the reciprocity theory and the power it has versus the prediction of rationality can be shown through five kinds of game theory cases:

1. The ultimatum game;
2. The gift-exchange game;
3. The prisoner's dilemma;
4. The investment game;
5. The dictator's game.

3.3.1 Ultimatum Bargaining Games

Güth et al. (1982) highlight the presence of negative reciprocal behaviors in the so-called ultimatum games. In order to understand it, an explanation on this kind of game must be given.

As already mentioned above, contractual relationships are fundamental elements in the daily life of any individual; regardless of the typology of the contract, they are stipulated in a two-step process: a contracting phase, where the conditions are set out, and an implementation one. The former phase is inclusive of a so-called "bargaining process" where the individuals involved proceed in the act of negotiating based on their preferences. Therefore, bargaining activities are put in place in order to negotiate the terms of final agreements and as illustrated in the example below, ultimatum games are the easiest representations of this form.

Let's assume a situation in which two parties, A and B, have to split an equal amount of money (M) under "ultimatum" conditions. This form stands for the fact that one of the two parties makes a proposal for the distribution of that amount, which the other individual can accept or reject. In the former case, the agreement is accepted and the distribution occurs under the conditions set by the first party; if the proposal is rejected, the deal is not closed and neither of them gets any amount of money. Under the hypothesis that the total amount of money is 100$, individual A will make a proposal (a) of an amount between $0 \leq a \leq 100$$; and individual B can either accept or reject. If B accepts, he will have a utility of:

$$u(B) = 100 – a$$

And individual A will have a utility:

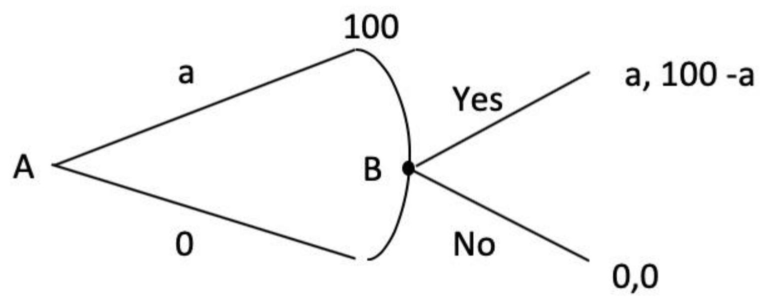
$$u(A) = a$$

If individual B rejects, they will both have a utility equal to zero:

$$u(A) = 0;$$

$$u(B) = 0$$

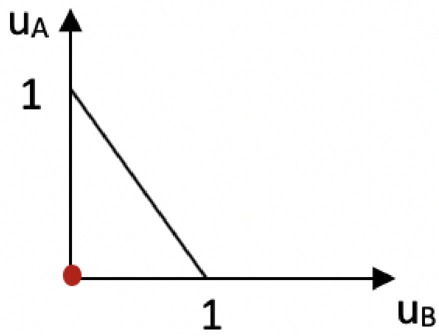
Figure 5: Ultimatum Game Representation



Source: Watson, J., 2013. Strategy. 3rd ed.

The figure above shows the graphical representation of the standard ultimatum game of players A and B. In addition, a representation of what the payoffs of the two players would be if player B rejected the first mover's offer is provided by the disagreement point of this game. In our example, it is represented by the red dot at the points (0,0) illustrated in the figure below.

Figure 6: Disagreement point



Source: Watson, J., 2013. Strategy. 3rd ed.

3.3.1.1 Agency Theory/Rational prediction:

The hypothesis under rational behavior is that individual B will always accept the gamble, since whatever offer the other party makes will always be greater than zero (a > 0). Under these conditions, the optimal offer from the proposal maker (individual A) would be the total amount M, which in this case is 100$, minus the smallest possible unit of the payoff (µ):

$$u(A) = M - \mu$$

In fact, A could make an offer of $0.50, and it would still be optimal for B to accept given that it is greater than zero. In this way, individual A would get a very big amount in return of $99.5 (total value minus the offer = $100 – $0.5).

However, this is where the Reciprocity Theory comes into play: this situation rarely happens in reality. Through the years, Güth et al. have done many studies and experiments which led to the conclusion that in ultimatum games the responder will not behave with respect to the rationality principles but will be driven by reciprocal behavior. In fact, individuals that feel like they are getting an unfair treatment from the other player would be willing to reject a substantial offer just to punish those selfish individuals whose only aim is to gratify themselves. In our example, if individual B receives an offer that he perceives is not under fair terms, it is likely that he will reject the gamble (going against rationality) just to have the satisfaction of individual A receiving a payoff equal to zero.

Empirical evidence shows that two additional factors must be taken in the consideration when dealing with these kinds of games: the proponent's reciprocal involvement and the respondent's tendency towards reciprocal behavior. The former refers to how careful the individual that is making the offer is about distributing equitable and fair payoffs. This factor is directly related to the offer that will be made: the higher the reciprocal involvement, the higher the amount proposed, as opposite, the higher the level of egoistic behavior in the individual, the lower the reciprocal involvement and the offer. The equilibrium will be reached when the proposing individual makes an offer which maximizes his final outcome but also takes into consideration the possibility of refusal from his opponent.

To conclude, studies provide evidence on ultimatum games presenting behaviors of negative reciprocity, by showing that people are prone to reject small offers, even if it goes against their own self-interests, just to take advantage of the opportunity to punish greedy proposers.

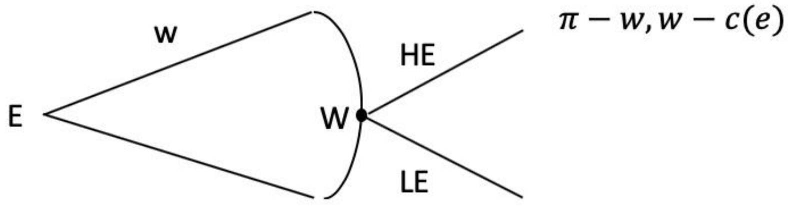
3.3.2 Gift Exchange Game

Further empirical evidence on the contrast between rational decision making and reciprocity is explained in Fehr, Kirchsteiger and Riedl's (1993) studies, which challenged the theory that all individuals are selfish and rational and arrived at the conclusion that fairness and reciprocity attitudes are present in the conducts and behaviors of individuals. In fact, they illustrate the presence of positive reciprocal behavior in the gift-exchange game. In our analysis, the gift-exchange is a sequential game composed of two individuals: an employer and a worker, perfectly depicting the Principal-Agent relationship. At the beginning of the game, the employer is the first mover and needs to make a decision as to whether to offer a high or a low amount of wage (w) to the worker. After collecting the wage and analyzing the choice that the employer made as to whether to provide him a large or small sum of salary, the worker decides what level of effort to exercise on the required task. This decision is taken keeping in mind that exercising an amount of effort higher than the minimum required would imply incurring into a cost c(e) for the worker. As illustrated by the graphical representation of the game in the figure below, if the worker were to choose a high level of effort, the outcomes would be the following:

$$u(E) = \pi - w$$

$$u(W) = w - c(e)$$

Figure 7: Sequential Game – Employee/Employer



Source: Watson, J., 2013. Strategy. 3rd ed.

3.3.2.1 Agency Theory/Rational prediction:

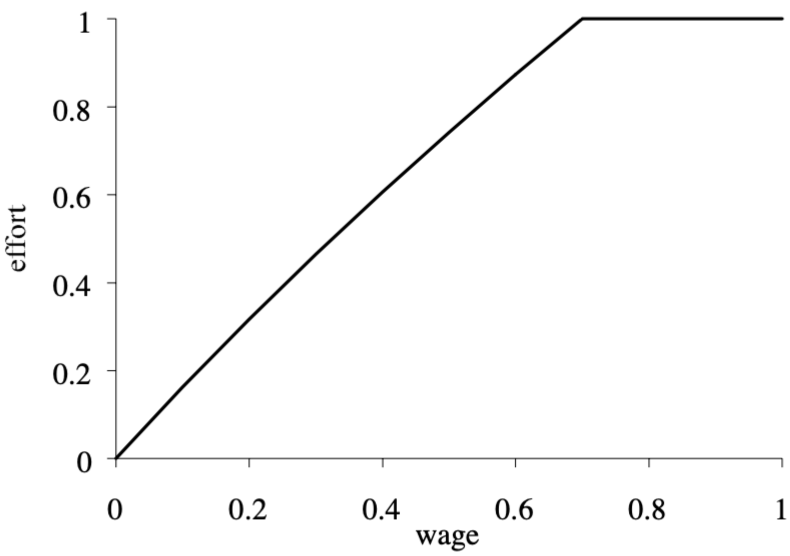
Rational theory says that: regardless of what the wage offer chosen by the employer is, a utility maximizing selfish worker should always choose to implement the lowest amount of effort possible required for the job. If this is true, following the backward induction method, which consists in the process of deciding which strategy to implement in a game by looking from the last step (where the outcomes are stated) to the starting point (J. Watson, 2013), if the worker applies the lowest amount of effort, the employer will offer the lowest amount of wage possible. However, Fehr, Kirchsteiger and Riedl (1993) studies provide evidence on the fact that:

- In most gift-exchange games the wages offered by the employer are higher than the minimum salary possible;
- There is a positive correlation between the wage offered by the employer and the effort enacted by the worker.

In their studies, Fehr, Kirchsteiger and Riedl assume that the worker has a certain "reciprocal motivation" which pushes him to behave according to the reciprocity principals. Moreover, the choice of the level of effort to exercise is strictly related to the salary offered by the employer on the basis of the reciprocal motivation of the worker.

In conclusion, as shown in figure 6, if a worker is endowed with a certain reciprocal inclination, empirical evidence provides that he is willing to exercise a greater amount of effort the greater the wage that they receive.

Figure 8: Effort choice according to the wage paid for a given reciprocal motivation



Source: E. Fehr et al. 1993

3.3.3 The Prisoner's Dilemma

Additional evidence can be provided by one of the most important events in game theory, the so-called "Prisoner's Dilemma". The name arises from a situation where there are two or more suspects in crime and it is considered to be one of the traditional examples of "cooperation" game, highlighting the benefits associated to cooperating (J. Watson, 2013). This dilemma has been subject to many extensions during the years, depending on the different situations the parties involved can face. In this section, we will first analyze the sequential version of it and then the simultaneous approach.

Regardless of whether it is simultaneous or sequential, the starting point of the prisoner's dilemma is composed of two players A and B which are considered to be suspects for a crime. The police have enough evidence to charge them both for a minor crime, but not enough to charge them for a major one. The only way of executing them for the major crime would be if they acted against each other (if one of them confessed about the other). Three different situations can occur in the game:

- If both individuals decide to cooperate, they will be executed for the minor crime and spend 1 year in prison;
- If they both Defect (confess about the other player), each of them will spend 3 years in prison;

- If individual A cooperates and individual B confesses that A did it, the one that defected will be freed and the one that cooperated will be executed for the major crime and spend 4 years in prison.

When the game is sequential, there is a first stage where individual A chooses whether to "Cooperate" (C) or to "Defect" (D). In the second stage, player B, aware of what the other player chose, will make the decision as to whether cooperate or not.

3.3.3.1 Agency Theory/Rational prediction:

Under the hypothesis that the players are rational and selfish, the prediction is that they will both play "Defect" in order to maximize their own utility and not caring about their partner. Differently from the just-mentioned theory, Reciprocity predicts a different situation with 2 separate scenarios:

1. Player 2 consistently defects when he observes that player 1 defected in the previous round. In this case there will be no cooperation between the two;
2. If player 2 is reciprocally driven, he will react with cooperation if he notices that player 1 cooperated in the previous stage. In this case, there is a condition of cooperation between the two.

Empirical studies show that the first case rarely happens and that "cooperation is better regarded as reciprocation: second-movers cooperate quite frequently in response to cooperation by first-movers, but rarely cooperate after the first mover defects" (Clark & Sefton, 1998, p.17).

Looking at the other approach, under a simultaneous Prisoner Dilemma Strategic game, the two players will decide whether to Defect or Cooperate at the same time, unaware of what the other party's decision will be. In these conditions, empirical evidence from studies and experiments carried out by Watabe et al., (1996) and Hayashi et al., (1998) shows that the level of cooperation between the two individuals is lower than in the sequential one. In fact, when he knows that he is not observed by the other player, the first mover is more likely to defect than to cooperate. This model is very similar to another strategic game: the one of the public good, where a good is handed out to a group of people only if there is at least one individual in the group which is willing to pay for it. The plan of action consists of the players simultaneously filling an envelope with the contribution that they are willing to offer for the good (on the basis of their personal valuations which may differ across individuals). The contribution offered can either me an amount (a) or zero; it is important to keep in mind that, if every participant in the group contributes an amount equal to zero, the good will not be provided and they will all have a utility function equal to 0.

3.3.3.2 Agency Theory/Rational prediction (simultaneous):

Under this prediction, it would be rational for an individual inside the group to contribute an amount equal to zero for the public good regardless of what the other player's offers are. Nevertheless, Fischbacher, Gachter and Fehr conducted a study where the individuals in the group were given the possibility to express in a conditional way the amount of money that they wanted to provide for the public good. Usually, the players in a public goods game have a higher willingness to provide money the higher the amount contributed by the other participants in the group. Fehr, Fischbacher and Gachter's "conditional" strategy observes that individuals will give out a lower amount relative to the average of the group's contributions. To conclude, the underlying assumptions is that individuals are willing to conditionally cooperate (when they are endowed with a certain reciprocal tendency); however, their contribution will be somewhat lower than the other players in the group. In fact, the disposition that individuals have towards cooperating increases as their marginal per capita return increases. (Ledyard, 1995)

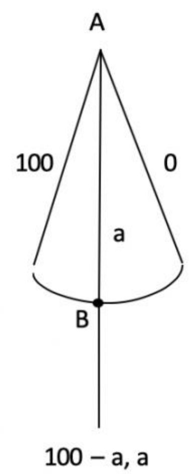
The public good's analysis just mentioned also provides evidence on another important concept that needs to be taken into consideration: individual's dislike and opposition to being the so-called "party pooper" in social problem games. Moreover, they are aware of the fact that players that actually do cooperate may be pushed to punish those "party poopers" even if it implies incurring into personal expenses. These concepts will be further developed in the later section of the chapter, where an explanation of the "social norms" and their consequences is provided.

3.3.4 The Dictator's game

Another demonstration of the existence of reciprocal behaviors arises in the Dictator Games. These games are composed of two players A and B and have a similar setting to the ultimatum bargaining ones, with the exception that the second mover (player B) cannot make the choice as to whether to accept or reject the offer made by the first one (player A). Assuming that player A, the so-called "Dictator", has to divide a sum of money (M) between himself and his opponent, he is provided with the possibility to choose whatever distribution he wants, given that the second player is considered to be a "passive player" and has no choice but to accept the amount offered. Figure 8 depicts the graphical representation of the game if the total amount were to be 100$ and the dictator were to choose to offer an amount *a* to player B. Moreover, the correspondent utilities would be equal to:

$$u(A) = 100 – a$$
$$u(B) = a$$

Figure 9: The dictator's game graphical representation



Source: Avgeris, A., Kontogeorgos, A. and Sergaki, P., 2018.

3.3.4.1 Agency Theory/Rational prediction:

According to the standard rational theory, it would be optimal for the dictator to make an offer equal to zero, given that the opponent is obliged to accept. However, empirical studies carried out by Forsythe et al. (1994), Hoffman et al. (1994) and Grossman et al. (1998) on this game reveal that:

- It is very rare for the first mover to make an offer which is larger than half the total amount ($a > 1/2$);
- Around 4/5s of the time, the proposal made by the dictator is between zero and half of the total amount available ($0 \leq a \leq 1/2$);
- 1/5 of the time the proposal made by the dictator is actually zero;

According to their studies, this occurs because individuals in the position of the “dictator” choose their proposal based on two variables:

- The Reciprocity parameter (ρ): a mathematical variable representing an agent’s reciprocal inclination. The greater the parameter, the greater the utility arising from acting reciprocally relative to the utility arising from tangible outcomes;
- The Pure outcome concern parameter (ε): the level of relevance that individuals attribute to a proportional and fair payoff. It represents the extent to which a person is willing to sacrifice he’s payoff to provide an equal outcome.

Therefore the dictator’s monetary proposal depends on the product between these two variables:

$$\varepsilon * \rho$$

In the case in which the product specified in the formula above is lower or equal to 1, the first mover will offer an amount of money equal to zero; if it is greater than one, he will offer an amount of money greater than zero. However, even at very big amounts of ($\varepsilon * \rho$), the first mover will never propose to the other player an amount of money which is higher than ½ of the total dollar amount.

Finally, studies on the dictator’s game provide evidence on the presence of both theories: the rational utility maximizing and the reciprocity one. In fact, if on one hand rationality predicts that a significant number of individuals was going to offer an amount of money equal to zero, results show that the choice has always been between zero and one half of the total amount of money.

3.3.5 Remarks:

To conclude, this section of the abstract presented a deep analysis of the Reciprocity Theory and its application to different situations through the study of strategic games and experiments. These experiments brought to the conclusion that there are situations in which individual’s drive to behave reciprocally is stronger than the one to behave rationally and to achieve self-interests. In fact, people would be willing to expose themselves to higher costs just to penalize unfair or negative behavior. At the same time, there are situations in which people are inclined to compensate fair and positive behavior at their own expenses. Both these phenomena just mentioned, the increase of personal costs to either reward or punish an action, imply a derailment from the hypothesis suggested in the standard Rational Choice Theory.

3.4 Fairness:

A second important point that Bosse & Phillips' highlight as a criticism to agency theory suggests that the relationship between the principal and the agent is influenced by the notion of fairness. The concept of fairness is strictly related to the above-mentioned Reciprocity theory; in fact, the tendency of an individual to act reciprocally (both positively and negatively) occurs on the basis of what is perceived as "fair" by that same individual. When a person feels like he is getting a fair and equitable treatment from another party, he is most likely to behave in the same way and reciprocate that fair behavior. Take a worker for example, if he feels like his boss is treating him in the right way and compensating him with the right amount of money for the task required, he will most likely equilibrate this behavior by applying a high level of effort on the job (or he can decide to keep the same level of effort but to spread the compensation). On the contrary, if an agent perceives that he is getting an unfair and discriminatory treatment or that there is a breach in the standards of fairness, he will most likely want to reinforce that norm by enacting a lower level of effort or asking a higher level of compensation (Greenberg 1988). Therefore, conducts and behaviors are not always driven by a rational analysis but can be seen as a reaction to a feeling of fairness related to expectations.

Evidence on the perception of fairness is provided by an analysis carried out by Falk, Fehr and Fischbacher (2000), which makes a comparison between two games: a simplified model of the ultimatum game and the so-called "best-shot game". The latter is a game which is similar to the ultimatum one but with different conditions. In fact, in best-shot games there are two players, A and B, and a total amount of money M to be distributed between the two. At the beginning of the game, the first mover has to make the offer in two different ways: either a very favorable alternative for the first player or a very unfavorable one (example: the first player can either offer 3/7 or 7/3). After the offer is made, player B decides whether to accept or reject it. Once again, if he accepts the distribution occurs as stated in the agreement, if he rejects, like in the ultimatum game, both the players get an amount equal to zero. The simplified ultimatum game, on the other hand, provides the possibility to the first mover to choose between offering the favorable alternative (where player 1 gets 7/3 of the total sum) or a fair offer (5/5 split of the total amount of money).

Results show that the difference between the two games stands in the fact that in the best-shot game the responding player is more considerable towards accepting a higher level of unfairness. This occurs because in this kind of strategic game the second mover is aware of the fact that the first player only has a choice between a highly favorable situation or a highly unfavorable one. For this reason, there is a lower level of "unfairness" perceived if he gets the lowest offer, since there are no "bad intentions" in the first mover's choice.
Differently, in the ultimatum game, the first mover is provided with the possibility of making an equitable offer (to choose the 5/5 alternative). Therefore, if he were to choose the other alternative, the likelihood of rejection from the other player would be very high (given that player B would perceive the intentions of unfairness of player A).

To conclude, an individual's perception of fairness can actually be considered as a strong motivator and driver in the choices and behaviors that human beings face on a daily basis, causing deviations from those actions that may be considered to be more "rational" to implement.

3.5 Social Norms:

A third argument that is used as a critique to the Agency Theory arises from the divergence between two economic schools of thought: the "Homo economicus" and the "homo sociologicus". The former refers once again to the theory of rationality by Adam Smith, which depicts the human being as a rational self-interested agent whose only goal is his own utility maximization. The latter is based on Emile Durkheim's theories in the psychological and science of economics' world, which links the human attitudes to social norms. (J. Elster, 1989)

A social norm is defined as a group of behavioral rules and principles founded on the common belief and understanding of what actions are forbidden, mandatory or allowed (Ostrom, 2000). It has the role of harmonizing and integrating individual's beliefs and expectations in order to create an equilibrium between social relationships.
Social norms are created as laws that need to be followed when acting in a specific way or when implementing a given methodology for doing something and individuals comply with these with the belief that other people surrounding them will respect the rules too. The terminology "norm" can refer to a large variety of rules, including elementary ones which are often not even considered as rules but as actions expected for granted, such as how to

approach a person you meet for the first time, or how to drive. These are the so-called *conventions*. However, there are also more complicated ones whose respect is ensured through the use of punitive measures. (J. Elster, 1989)

Norms are present in a variety of forms and types such as agreements, deals, rights etc. and they introduce the feeling of responsibility that is present in every individual independently on whether it is towards parents, school, work or society. However, even if social norms demand contingency in the manners of conducting oneself, they may also present major differences according to the groups of individuals they can be applied to.

In addition, social norms may be subject to modifications after a certain period of time, which may depend on adjustments made by the external environment (objective) or on alterations in subjective factors (such as individual's understanding or beliefs on something).

An important distinction that requires attention is the one between social norms and other related ones, such as moral, private and legal norms. Legal norms are dictated by a specific authority, which cannot be driven by his/her self-interests given that they incur in the risk of losing their jobs if not respected. Social norms on the other hand, are dictated by the community, and can be subject to self-interest.

Private and social norms have some common aspects, such as being linked to emotions and feelings and not being focused only on the final outcome; however, they differ from each other given that the former is not subject to the authorization of others, and not shared among the individuals involved (Ainslie, 1982).

John Elster's studies (1989) provide an analysis of the most common types of norms present in society:

- Consumptions norms: common beliefs on individual's choice of clothing, way of speaking, and acting in their everyday life (Bourdieu, 1979);
- Norms dealing with behaviors that are considered "contrary to nature": common beliefs on individual's behavior for topics such as sexuality, cannibalism, incest etc., with reference to subjects that are not considered "normal" in society;
- Money norms: common beliefs on how individuals should best use their wealth and income;
- Norms of Reciprocity: as mentioned in the section above, it represents a set of rules on the common beliefs that determine and drive the exchange of good or bad actions;

- Norms of cooperation: describe the intensity of an individual's cooperation in different kinds of situations (like the prisoner's dilemma mentioned above);
- Norms on the job: common beliefs on the behavior and amount of effort that an individual is supposed to enact in his workplace;
- Distribution norms: common beliefs on the conditions under which society regards the allocation of any type of resource as "fair".

The ones listed above are the most acknowledged social norms; however, they can be subject to extensions and variations based on the culture, society, religion, company or institution of the group that they are applicable to. For example, there are cultures under which "cannibalism" is considered to be normal and there are religions which refer to two different days as the resting one (the Catholic religion refers to Sunday as a holiday differently from the Hebrew religion which celebrates it on Fridays).

Like any kind of standard, there are mechanisms to ensure the respect of these social norms; however, differently from legal rules, social norms do not require the use of external sanctions to be respected. In fact, an individual's tendency to comply with a social norm can be influenced by internal mechanisms such as:

- *Risk of social disapproval:* the respect of certain norms is assured by the rise of a feeling of fear of disappointing other individuals or of getting in trouble for not respecting the norms and being subject to a punishment.
  Example: If a hypothetical norm states that the appropriate reaction to somebody who fights you is to fight back, if you don't do so you will look different in the eyes of society.

- *Pure coordination purpose*: following a social norm because of the common and uniform belief that it is the suitable way to solve an interaction problem.
  Example: If a norm states that drivers need to stop when they see pedestrians that are about to cross the street, they stop and follow the norm in order to avoid collision.

- *Internalization of norms of proper conduct***:** individuals will follow the norms even if they know that they are not being observed by some other individual in the community.
  Example: if an individual throws a piece of rubbish paper on the road in the middle of the night, he/she should not be worried about the consequences given that nobody saw her. However, emotions of guilt and remorse can show up.

3.5.1 Rationality vs. Social Norms

Recalling the main argument of the critique, economists believe that there exists an inconsistency between behaving according to the rationality principals and behaving following to the social norms. In fact, the underlying assumption states that individuals that follow the social norms are not always acting in what results in a utility maximization outcome.

The main divergences between the two theories are displayed in the figure below:

Figure 10: Social norms vs. Rationality

Social Norms	Rationality
Unresponsive to the situation, based on persisting to the behaviors set as a guide also if new or more favorable alternatives arise	Conforms to a modification in the situation, especially when an advancement can be reached. Constantly seeking for more favorable conditions
Not oriented on the final result	Main objective is the final results
States: “Do this” or “Don’t do this”	States “to arrive to this result, you have to do this”
Not Conditional	Conditional
Focused on the future	Focused on the Future

Source: Elster, J., 1989. Social Norms and Economic Theory

As stated in the table, while on one hand rational choice theory prescribes an adjustment to the different situations and conditions that arise in order to be able to choose the alternative which is most rational and utility maximizing; social norms determine that individuals must keep on behaving according to the manners set as guide by the rule even when there are new or better opportunities or when it may be "irrational" for them to. In fact, social norms state that an individual should "either accomplish an action A, or don't", differently from rational choice theory which states that "in order to achieve a result B, an action A needs to be enacted". In addition there are also more elaborated social norms which prescribe actions such as "if everyone else in society does something, you do it too", which may not always be the most rational solution to implement. As noted from these statements, rational choice theory pushes to enact a behavior with the only final aim to reach the outcome that results from the implementation of those actions, for this reason, it is said to be "outcome oriented". Moreover, another difference arises from the fact that the "social" part in the definition of social norm arises from its necessity to be approved or condemned by other individuals in the group. These norms are in fact often linked to feelings and emotions such as the ones of shame, worry and humiliation associated with not respecting them. At the same time, the correct respect and implementation of these norms may result in being associated to positive feelings. In fact, contrarily to rationality, social norms have a control on the human's head generated by the emotions that they produce. (J. Elster, 1989)

To sum up, the "Homo sociologicus" theory affirms that the conducts and behaviors of individuals are ruled by norms which prescribe that human beings must behave in a certain way even when they don't fully understand what the actions are aimed at. This is the reason why individuals often rely on social norms "as a routine" and without giving them too much concern: they believe that if a norm states that an action should be enacted, they must do it without too much consideration of the decision.

3.5.1 Social norms vs. selfish rationalization

Following Adam Smith's theory of rational decision making, many economists provided an explanation as to why individuals behave according to social norms by leveraging on the idea that they do so to realize their self-interests. The assumption is based on the idea that individuals, either directly or indirectly (unconsciously), tend to assume a rational behavior also when complying with social norms.

This defense is supported by a number of examples that depict individuals adopting social norms only when it is most convenient and rational for them to:

- The “equal pay for equal work” norm expresses the right that individuals working in the same organization have to earn an equal amount of wage. This norm was invented to avoid favoritisms or gender discriminations and can be applied to every type of compensation (salary, stocks etc.)
- If a worker notices that an individual carrying out the same job in a comparable business has a higher wage than himself, he will act rationally and complain about the wage difference. If the opposite occurs, and he notices that the other individual earns a lower amount of income, there is a high probability that he will not say anything in order to keep his high wage (Mikula, 1972; Kahn, Lamm and Nelson, 1977);

- A second example can be illustrated through the norm describing the money-effort trade-off, which states that the amount of income compensated should be equal to the amount of effort exercised. When the performance of a company is experiencing a downturn, it is very likely that the employer will rely on this norm and complain to the worker; in the opposite case, when the performance of a company is going well, the employee will rely on the norm asking for a higher compensation.

The examples above depict situations in which people adhere to social norms that are advantageous for them, through the manipulation of these in order to rationally achieve results on their own best interests. However, this argument is groundless. As the famous saying “when you do something, it will backfire on you sooner or later” claims, if an individual relies on a particular social norm on one occasion to achieve personal interests, the same social norm will be applicable on that same individual in a future occasion. For example, if I rely on the “reciprocity norm” to get some favor done by a friend, I need to be aware of the fact that that same social norm can be used against me in the future.
Another argument against the rational application of social norms, as Edgerton stated, is that “Unless rules were considered important and were taken seriously and followed, it would make no sense to manipulate them for personal benefit. If many people did not believe that rules were legitimate and compelling, how could anyone use these rules for personal advantages?” (Edgerton, 1985, p.3). In fact, the individuals that follow and comply with the norms, are usually the ones that believe in the importance of it and do not use it for rational reasons through manipulation.
To conclude, the separation between social norms and self-interest is still not quite clear, there is both evidence on the use of social norms to achieve one’s personal interest but also

on the adherence of these norms in a way that is far from rational. What needs to be taken into consideration for sure is that both of them represent strong drivers and motives in the actions that individuals undertake.
Moreover, applied to the agency theory, this divergence implies that when exercising the activity on behalf of the principal, the agent may not always be driven by his own interests and utility, as prescribed by the assumptions of the theory, but may be pushed to actually implement the correct amount of effort required by the social norms that the individual in question adheres to.

3.6 Conclusion:

Summarizing what has been said until now, the rational choice theory assumption, which is one of the predominant elements in the Agency Theory, relies on the idea that the behavior of individuals is driven and stimulated purely by their own self/interests. This concept, combined with the lack of information (asymmetry), uncertainty conditions and all the hypothesis characterizing these relationships, give rise to a series of agency problems and costs that have been mentioned in the first chapter of the abstract. There are no doubts on the fact that there actually exist situations and individuals that behave in an absolutely selfish way; however, most of the time, this assumption does not really reflect what happens in reality. In particular, in the above-mentioned section of the abstract, we have listed a number of evidences that the human behavior is also strongly influenced by three main elements that push them to deviate from what is considered as a "rational" behavior. These three elements can be referred to as "other-regarding" behaviors, and are: rationality, fairness and compliance with social norms. In fact, results show that these other regarding behaviors are very relevant factors in influencing the everyday social and economic life of individuals and disregarding them in economic studies and theories may lead to the risk of reaching imperfect or completely wrong results.
Moreover, when applied to the Agency theory, we are not assuming that individuals will not behave according to what is most rational for them, as predicted; but it is important to take into consideration the possibility of the agent deviating from those activities that are most rational for them to enact, and that are harmful for the principal, through the use of reciprocal, fair and social norm compliance actions.
Of course this concept can be extended to a variety of other elements that can have an impact on the behavior of individuals (and of the agent in a principal-agent relationship) and can

cause a deviation from the rationality assumption; however, for the purpose of this paper, we will only focus on the three mentioned (fairness, reciprocity and social norms compliance).

4. EXTENTIONS OF AGENCY THEORY TO MULTIPLE DIMENSIONS:

Everything that has been stated until this point of the abstract is based on the standard assumptions of linearity of the Agency Theory. By linear model, apart from being composed by two participants (the agent and the principal) hypothesized to be selfish and rational utility maximizing individuals; we refer to the fact that due to information asymmetries (and in particular moral hazard types), the principal cannot stipulate the agreement based on the actions carried out by the agent but only on the final output, which we will refer to as γ. In fact, this output is directly correlated through a one-to-one relationship with the level of effort (e) implemented by the agent and some contingent elements in the external environment (δ). In this scenario, the principal only has access to the total outcome γ, given that the total level of effort inputted and the status of uncertain elements in the environment are only known by the agent. In particular, the linearity of the principal-agent relationship derives from the assumption of a single-dimension optimization for each party involved (R. Vetschera, 1998), separated as:

- The optimization of the level of profitability of the organization from the principal's point of view;
- The optimization of his personal utility function from the agent's point of view.

However, the assumption behind this linear model rarely represents what occurs in real life (R. Vetschera, 1998); in fact, one of the main extensions to the classic agency theory is the presence of multiple tasks and dimensions to be carried out by the agent, connected to the multiple performance goals required by the principal.

In this section of the abstract, an in-detail analysis of the assumptions behind this enlargement of the Agency Theory to multiple functions or dimensions from both points of view (the one of the principals and of the agent) is enacted. In addition, a second part of this chapter will focus on the examination of a case study through a field experiment carried out in the consulting sector, with the aim of measuring what are the effects of this multidimensionality on the “rational choice assumption”, which as we have seen is one of the pillars of agency-relationships. This experiment was also carried out to study the consequences that this “multi task/dimensional” environment may have in relation to the critiques to the “rationality” concept that have been discussed in the second chapter of the thesis, such as social norms compliance, fairness and reciprocity (other-regarding elements) and to check whether they are still founded in this multiplicity of dimension context.

4.1 Type of Extensions of the Agency Theory

The unique criteria optimization assumption under which an Agency relationship is based, has turned out to not reflect what occurs in reality most of the times (R. Vetschera, 1998). For this reason, it has been broadened from the standard view of single dimensionality of performance, to a multi-dimensional perspective. This multi-dimensionality of objectives can be applied either to only one of the two individuals involved (principal and the agent) or to both of them together, giving rise to three kinds of deviations from the linear relationship:

Figure 11: Multiple Criteria Agency Models

			AGENT
	Dimension	**Single**	**Multi**
	Single	Case 1	Case 2
PRINCIPAL	**Multi**	Case 3	Case 4

Source: Vetschera, R., 1998. Multicriteria agency theory

4.1.1 Case 1: standard single-criteria agency theory

As shown in the table, the first case represents the standard agency theory linear model, with one single dimension to optimize for each of the parties involved. As displayed by the formula below, the principal and the agent want to maximize two separate things: the former aims at the profitability of the organization, while the latter aims at his personal utility.

$$\max r(e*) - c(r(e*))$$

Subject to the following constraints:

$$u(e*), c\big(r(e*)\big) = \max u(e, c(r(e)))$$

$$u\Big(e*, c\big(r(e*)\big)\Big) > u(\min)$$

In these formulas, the variable *e* stands for the total level of effort enacted by the agent, which provides a final outcome of *r(e),* which in turn determines the remuneration given by principal to the agent, represented by *c(r(e)).* The formula displays the optimization of a single objective for each individual: the profit of the organization from the principal's side, described as the result of the total outcome achieved by the agent minus the cost of compensating that agent, and the optimization of the agent's utility represented in the constraints. (Anandalingram/Friesz, 1992)

4.1.2 Case 2: Single criteria optimization for the principal and multi-criteria for the agent

In the second case of the figure, the agent must satisfy the optimization of more than one dimension while the principal continues to have a unique one. In this case, the formula becomes the following:

$$\max r(\boldsymbol{e}*) - f(c\big(r(\boldsymbol{e}*)\big))$$

Subject to the following constraints:

$$\Big(-\boldsymbol{e}*, c\big(r(\boldsymbol{e}*)\big)\Big) = vmax\ (-\boldsymbol{e}, \boldsymbol{c}\big(r(\boldsymbol{e})\big))$$

$$\begin{bmatrix} e*(1) \leq e(1, \max) \\ \dots \\ \dots \\ e*(k) \leq e(k, \max) \end{bmatrix}$$

$$\begin{bmatrix} c1\left(r(e*)\right) \geq c(1,\min) \\ \ldots \\ \ldots \\ c(n)\left(r(e*)\right) \geq c(n,\min) \end{bmatrix}$$

As shown above, the level of effort (e) enacted by the agent and the remuneration (c(r(e))) associated to it need to be taken into consideration as vectors (represented in the formula as bold). This case is very complex to analyze given that if the agent's pay function is a vector *c(r(e))*, it may influence the final outcome of the principal (which is why it is referred to as a function *f*). In addition, the effort enacted by the agent is accompanied by a negative sign since it takes into consideration the assumption that the agent has the objective of minimizing his effort as much as possible. Under these conditions, it is most likely that the agent will maximize this multi-dimensional problem by choosing the alternative that he prefers in terms of utility (based on his personal preferences).

4.1.3 Case 3: Single criteria optimization for the agent and multi-criteria for the principal

The opposite situation is displayed in the third case, where it is the principal that must satisfy more than one dimension in the final results *(r(e))*. This can be observed from the formula:

$$vmax\ \boldsymbol{r}(e*) - \mathrm{c}(\mathbf{r}(\mathrm{e}^*))$$

Subject to the following constraints:

$$u\left(e*, c\left(\boldsymbol{r}(e*)\right)\right) = \max u\left(e, c\left(\boldsymbol{r}(e)\right)\right)$$

$$u\left(e*, c\left(\boldsymbol{r}(e*)\right)\right) >= u\ (\min)$$

As shown above, the maximization occurs once again at a vector level. The objective is to reach the optimal amount of the vector ***r***, which is now representative of the list of various results required from the principal that can occur from the effort *e* enacted by the agent.

4.1.4 Case 4: Multi-criteria optimization for both parties of the relationship

Lastly, the fourth case represents a situation under which both of the individuals have to satisfy multiple requirements. It can be displayed through a combination of the two cases above, which brings to the following formula:

$$vmax\, \boldsymbol{r}(\boldsymbol{e}*) - \boldsymbol{c}\big(r(\boldsymbol{e}*)\big)$$

Subject to the following constraints:

$$\big(-\boldsymbol{e}*, \boldsymbol{c}\big(r(\boldsymbol{e}*)\big)\big) = vmax\,\big(-\boldsymbol{e}, c\big(r(\boldsymbol{e})\big)\big)$$

$$\begin{bmatrix} e*(1) \le e(1, \max) \\ \dots \\ \dots \\ e*(k) \le e(k, \max) \end{bmatrix}$$

$$\begin{bmatrix} c1\,\big(r(e*)\big) \ge c(1, \min) \\ \dots \\ \dots \\ c(n)\big(r(e*)\big) \ge c(n, \min) \end{bmatrix}$$

In this situation, all of the variables that need maximization have to be considered as vectors (which are represented by the bold factors in the formulas), emphasizing the list of alternative dimensions that each of the individual has at his disposal in order to make a choice.

Among the four different scenarios just listed above, for the purpose of the paper, and because it is the most realistic one, we will focus on a situation in which the principal requires the satisfaction of multiple dimensions relative to the performance and profitability of the organization from the agent. In fact, the assumption that an organization only has a single performance dimension that requires optimization has turned out to be very improbable. Studies from Schiemenz and Seiwert (1979) refer to organizations as very complex institutions and revealed that their goal structure is much more elaborate and that it cannot be reduced to a simple “profit maximization” concept. Companies have in fact to face a variety of different decisions such as: the number of new employees it wants to hire, the various work tasks that each individual worker must engage in, the amount of compensation it should provide to each one according to the tasks and many others. At the same time, organizations are constantly striving to appear “environmentally friendly” in the eyes of their customer base while maintaining a competitive advantage through the use of pricing strategies and sales tactics against its rivalry in the market. Moreover, the multi-dimensionality related to the performance of a company is becoming particularly important in the recent years and is amplified by the fact that elements such as “sustainability” conditions, “corporate social responsibility (CSR)”, producing “eco-friendly” goods and services etc. have gained substantial importance in the eyes of society. There have in fact been numerous scandals of companies declaring that they were respecting these conditions while in reality they were not.

4.2 Multi-dimensional performance of organizations (from the principal’s side):

Holmstrom and Milgrom (1991) introduced an extension to the agency theory that represents a situation in which the principal, instead of assigning one single responsibility to carry out, delegates the agent a higher number, or alternatively, a single task with multiple dimensions associated to it.

The underlying assumption of their study can be demonstrated by analyzing the example on professor’s compensation when it is directly related to the exam results of their students (*variable compensation based on grades*). While the standard linear (unidimensional) model states that this type of pay incentivizes professors to do their job efficiently by pushing them to care about the personal success of their scholars, multi-dimensionality of performance states the contrary. In fact, in this way, teachers could focus mainly on ensuring that their scholars are achieving high results during their examinations (through methods such as standardized disciplines that are only useful during the exam), hindering other important aspects that students need to learn from the teacher (such as stimulating them to be creative and innovative through project works etc.). In this case, Holmstrom and Milgrom (1991) claim that a fixed remuneration method would be more efficient in motivating professors to ensure a full growth of their students, rather than focusing on a variable pay which motivates and incentivizes professors only on a single dimension of the performance that can be accomplished by the scholars.

As mentioned above, the presence of multiple dimensions is a very important characteristic of organizations and it can be demonstrated by the fact that every business has at least two main objectives: optimize the level of quality of the goods and services produced and maintaining a high level of quantity at the same time. In addition, a third element that every organization strives to achieve (while maintaining an efficient qualitative-quantitative trade-off) is to sustain the lowest level of cost possible (minimizing the expenses). The ones just listed are certainly the most important but are only three of the dimensions that businesses need to take into consideration during their operations; they are in fact accompanied by many others, such as responsibilities towards society and the environment. These elements provide further evidence on the presence of a high number of dimensions that require maximization within the boundaries of businesses.

4.3 Measurability of different dimensions of performance:

Once the presence of a multidimensionality concept has been verified, a crucial aspect that needs to be discussed, especially in a performance setting, is the measurability of these dimensions. In fact, there exists actions and tasks where the performance can be measured with high or medium/low levels of accuracy, but there are also actions where the resulting performance is not measurable at all. In the latter case, when a task is sub-divided into several dimensions and only some of which can be measured with more accuracy than others, the prediction of the rational choice theory (and of the unidimensional principal-agent relationship) is that the agent will focus mainly on the measurable ones (implementing the majority of his effort on it), and provide the minimum level of effort on the dimensions which are more difficult to measure by the principal. To provide some examples:

- Let’s imagine that the owner of a manufacturing company (principal) assigns to its manager (agent) the task of producing a high number of units by the end of the month while also keeping a high level of quality of those products. In this case, since the quantity of units produced in the time limit can be easily observed by the principle, it represents the “measurable” dimension; differently from the quality of those units, which may not be as easy to recognize if not by the agent. For this reason, the prediction is that the manufacturing manager might focus mainly on producing a high number of units, at the expenses of the qualitative dimension on which he will enact the lowest level of effort possible;

- A second example represents that same principal and agent in a manufacturing company, but in a situation in which the former requires the latter to produce a high number of units (quantity) in a way that does not ruin the equipment necessary to produce those. Under these conditions, given that the equipment's are used by a variety of workers, the principal wouldn't be able to recognize the responsible in the case in which it got ruined. This asymmetry of information may push the agent to focus on producing a high quantity of units, mistreating and without paying attention to the conditions of the equipment used.

Generally speaking, in the presence of an agency theory relationship with more than one dimension (more than one task to be carried out by the agent or more than one objective required by the principal), and where only a limited number of these dimensions can be measured by the principal, the prediction is that the agent will focus mainly on those measurable ones, providing the minimum effort required on the others.
Moreover, Holmstrom and Milgrom (1991) highlight the necessity of an incentive alignment mechanism (such as the compensation packages mentioned in the first chapter of the abstract), that do not only serve as a risk mitigating and incentive creating instrument for the agent but as a way to push the him to spread the effort among the various tasks and dimensions it has to accomplish.

4.4 CASE STUDY

4.4.1 Field Experiment: Multi-dimensionality of Agency Theory in a Consulting company

Standard agency theory, strongly driven by rationality, predicts that under circumstances of multi-dimensionality of performance, where the principal requires the agent to accomplish more than one task on his behalf and only a limited number of those dimensions can be considered as "measurable", the agent will exercise a high level of effort only on the latter while putting the minimum amount of effort on the "unmeasurable" ones. By measurable dimension we refer to the possibility of the principal to directly observe and judge the result of that performance dimension without encountering any form of asymmetry of information. Moreover, given that the agent's compensation is mainly determined by the principal on the basis of the dimensions that are directly observable by him (measurable), rational choice theory predicts that the agent is generally incentivized to re-distribute all of his attention and effort towards the former and not the unmeasurable elements.

The aim of this thesis is to understand whether this prediction describes what would actually happen in reality. We will look at a real-life example of a two-party relationship where the one acting as the "agent" is required to achieve more than one dimension of performance by the individual representing the principal. In addition, the context will allow only a limited number (let's assume one for simplicity) of these multiple performance figures to be directly measurable by the individual representing the "principal".
RESEARCH QUESTION: Would the agent ***solely*** *focus on the measurable dimension as the rational choice theory and the standard agency relationship model predict, or would he act following the "other regarding" behaviors (such as the principles of reciprocity, social norms and fairness described above), and carry out* ***all*** *of the dimensions required by the principal in the most efficient way through the maximization of the level of effort exercised?*

In order to provide an answer to our research question I carried out a field experiment, in the modality of a survey, to examine how a group of individuals in a consulting company environment would behave in an agency relationship with multidimensional performance characteristics. A consultancy firm is a business composed of a group of professionals which provide services to singular people or to other businesses at a certain expense. Individuals working in these types of organizations are experts on the industry in question and specialist on the matters involved, educated through management and business universities. The value offered by the employees of consultancy firms is to provide instructions, recommendations and guidance to the companies requiring assistance, with the aim of achieving a specific result.
The relationship between a consultancy firm and its clients (the companies asking for assistance) can be looked at from a principal-agent point of view. In fact, the group of consultants (agent) and the client companies (principal) engage in a contractual agreement in order for the former to carry out actions and achieve results on behalf of the latter. Just like in any principal-agent relationship, the reason why the client company asks for assistance from the consultancy firm is because of its lack of time or knowledge to carry out the activities in question by themselves, motivating them to hire experts on the subjects. In addition, the context allows the presence of asymmetries of information given that the client company cannot constantly monitor what the consultants are doing. For this reason, there is the presence of an element of uncertainty which needs to be taken into consideration in the achievement of the final result and in the compensation that the client companies provide to the consultants.

4.4.2 Dimensions of performance in a consultancy principal-agent relationship

For the purpose of the paper, and to answer the research question by focusing on the element of multiplicity in the principal-agent relationship that arises between consultants and their clients, a survey has been carried out with particular attention on three dimensions of performance assumed to be desired by the client company (principal) from his engagement with the consultancy firm (agent). The three dimensions of interest are the following:

1. The quality of the final outcome expected by the client;
2. The timings of the project;
3. The confidentiality towards the client's sensitive information.

The first dimension of performance refers to the ability of the consultancy firm to carry out the activity required by the client company in the best possible way, by exercising high-level strategies aimed at the achievement and satisfaction of the client's needs. In fact, the company asking for assistance wants the consultants to exercise the highest level of effort possible on the job in order to maximize the final outcome expected and correctly reflect the compensation provided to the consultants.

The second point, the performance dimension referring to the timings of the project, reflects the client company's desire of the correct consideration and respect by the consultants of the established deadlines determined in the contract to reach certain objectives of the project. In fact, during the stipulation of a contract between a consultancy company and its clients, not only is a final date for the completion of the project established, but also a series of "intermediate milestones". The latter are organized in order to reassure the client that the project is being managed in the right way, to make eventual corrections and adjustments on the work carried out until that moment and to provide an overview on the following steps that are expected to be carried out.

The third dimension of performance representing a crucial element in the level of satisfaction of the client company is the respect of the confidentiality of sensitive information. In fact, during the contractual relationship and the development of a project between the two parties, the consultants might have access to important internal data of the company requiring assistance. For this reason, a "confidentiality agreement" between the principal and the agent is stipulated in order to guarantee the security of the information of the private individual or public administration assuming the role of the principal, and to guarantee the protection of its data assets and of its computer data.

4.4.3 Measurability of performance dimensions in a consultancy firm

The elements listed above are the three performance dimensions that will be taken into consideration in our field experiment to represent the satisfaction of the principal, defined by the client company in a consultancy agency relationship. One thing that can be noticed about these three dimensions (the quality of final outcome, the respect of the timings established for the project and of the confidentiality of sensible data) is that their level of measurability differs greatly among them.

4.4.3.1 Measurability of quality of the final outcome:

The only dimension of performance that can be directly measurable by the principal in question is the first one: the quality of the final outcome. In fact, when the project is finished, or in the check-point meetings organized to observe the progresses made, the client company can analyze whether the outcome provided by the consultants matches the final (or intermediate if they are in the benchmark meetings) result that was expected and required by them. In this way, through their level of satisfaction of the final result, they are also able to evaluate whether the consulting company exercised the highest level of effort on the job or not.

4.4.3.2 Measurability of timing of the project:

Differently from the first one, the two other dimensions are more difficult to measure and to observe. The aspect referring to the timing of the project is in fact determined at the beginning of the process, during the stipulation of the contract. Nevertheless, the client company will not be able to monitor twenty-four-seven whether the consultants are actually working on their project or not and whether the deadlines and benchmark dates established in the agreement reflect the ones that are really necessary. In fact, two events can take place:

- A situation in which the consultants and the client company agree on a date for the release and presentation of the final or intermediary results of the project, while in reality it takes them a greater amount of time to accomplish the results in question;
- A situation in which the consultants and the client company agree on a date for the release and presentation of the final or intermediary results of the project, while in reality it takes them a shorter amount of time to accomplish the result in question.

In the first point, standard agency theory and rational choice theory predict that it would be *irrational* for the agent to agree on a date to present the results to the client which presupposes a smaller amount of time to carry out the job than the one actually required. This situation would in fact oblige the agent to work extra hours in order to get the job done. On the contrary, Agency theory and rational choice theory highlight that in the second case it would be rational for the agent to establish a date to present the results to the principal which is ahead of the timing that is actually required, without the latter being aware of it.

4.4.3.3 Measurability of the confidentiality:

Lastly, the third dimension of performance is also quite difficult to observe and measure from the principal's side. In fact, the client company is well aware of the fact that in the process of working and carrying out a project for them, the consultants have access to important internal and potentially sensitive information on the company and its modus operandi. Moreover, companies asking for assistance to consulting companies are also aware of the possibility that the latter may be concomitantly carrying out projects for other companies, which may or may not include competitors of the principal itself, giving rise to a situation of conflicts of interest. In this case, the principal cannot monitor and cannot be aware of whether the consultants are actually working for competitors or not, and whether they are voluntarily or involuntarily disclosing important financial information.

4.4.4 Structure of the experiment:

The field experiment is structured as a survey, handed out to groups of individuals working in high-level consulting companies in Italy. The survey is anonymously carried out by a sample of consultants of a different range of ages, experience and educational backgrounds; and is aimed at understanding and examining the varying levels of importance that this heterogeneous group of individuals attributes to the three performance dimensions that we are taking into consideration: the quality of final result, the timing of the project and the respect of confidentiality on the client's sensible data. The survey is composed of 20 questions listed below, and an analysis of its structure will now be provided:

Survey on the multiple dimensions of performance in the consulting field

The questions presented here will be useful to understand the dynamics related to the presence of multiple dimensions of performance in a relationship defined as "agency" one, *where an individual denominated as the "agent" acts on behalf of a second party, called the "principal".*

The first part of the experiment is composed by five questions (displayed in Figure 1 of the Appendix) aimed at collecting the demographic information of the respondent such as age, sex, educational background and their consulting experience. These questions allow us to have a better view on the background of the sample and their knowledge. The second part of the questionnaire focuses on the research objective, through questions on the three dimensions of performance and on the various situations that can occur related to these dimensions. This is done in order to gather a better understanding of how these consultants declare to behave in such situations. The questions are listed below:

1.

What is the dimension of "performance" to which you give more importance in the management of a project?

Your answer

2.

On a scale of 1-10 how important to you is the quality of the final result of a project requested by the client?

	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

3.

On a scale of 1-10 how important is the respect of the timing (deadlines etc.) set with a client for a project? *

	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

4.

On a scale of 1-10, how important is it for you to respect the confidentiality of customer information?

	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

As shown above, the first questions only refer to the three dimensions of performance of focus taken individually. This has been done in order to analyze what level of importance the individuals working in a consulting company (agents), attribute to each single dimension.

5.

List these 3 dimensions in order of importance (A. Final result, B. Timing C. Confidentiality)

Your answer

After examining the behavior of the respondents towards the singular dimensions, question number 5 wants to analyze the level of importance that agents in consulting companies provide to the three dimensions with respect to one another. For this reason the survey asks them to rank these according to the level of importance perceived by them.

6.

Has it ever occurred to you that the timings agreed with the client for the development of a project were different from the timings actually necessary?

- ○ Never
- ○ Rarely
- ○ Some times
- ○ Often
- ○ Always

7.

If the agreed time was lower than the one actually necessary to complete the work, how did you behave?

- ☐ You discussed the matter with the client for a review of the timelines
- ☐ You worked extra hours to meet the deadlines
- ☐ It never happened to me
- ☐ Other: ____________

8.

If the agreed time was higher than the one actually necessary to complete the work, how did you behave?

- ☐ You informed the client and reviewed the deadlines together
- ☐ You didn't inform the client but took advantage of the spare time to further improve/deepen the final result
- ☐ You didn't inform the client and delivered the project within the initially agreed deadline
- ☐ It never happened to me

As the figures display, questions from 6 to 8 focus on the unmeasurable dimension referred to as "timing of the project". As mentioned above, standard agency and rational choice theory predict that there might be situations in which the agent may be incentivized to use the asymmetry of information (the principal's lack of knowledge as to whether the agent is actually working on the project or not) given that the client company is not able to constantly monitor what they are doing. Through these questions we want to analyze the behavior of individuals that find themselves in situations like these, where the amount of time agreed at their disposal to carry out the job is lower or a higher than the one actually required.

9.

Have you ever worked with a client who behaved disrespectfully towards you?

- ○ Never
- ○ Rarely
- ○ Some times
- ○ Often
- ○ Always

10.

If so, has your approach to the project changed in any way?

- ○ Yes
- ○ No
- ○ It never happened to me

Questions 9 and 10 are related to the second chapter of the abstract: the one referring to the critiques on the standard agency theory. Through these questions we want to analyze whether in a principal-agent relationship, and in particular in a multi-dimensional context like the consulting one, individuals assuming the role of the agent will only act rationally and according to what is best for their own interests or whether they will follow the "other-regarding" behaviors. The questions above, refer in particular to the concepts of fairness and reciprocity; in fact, if individuals behave according to these two principles and notice an attitude from the other party that does not respect the concept of fairness, they might change their approach towards the project and change the way they interact with the client (either negatively or positively) as the reciprocity theory predicts.

11.

How important is it for you to follow social norms in the in the course your job and in your interactions with customers and colleagues?

A social norm is defined as a set of behavioural rules and principles based on a common belief and understanding of what actions are prohibited, mandatory or permitted.

- ○ High
- ○ Medium
- ○ Low

12.

Have you ever worked with a client who gave you the impression that he wasn't respecting social norms?

- ○ Never
- ○ Rarely
- ○ Some times
- ○ Often
- ○ Always

13.

If so, has your approach to the project changed in any way?

- Yes
- No
- It never happened to me

14.

If your approach to the project has changed, how?

Your answer

Once again, the last questions of the survey focus on the second chapter of the abstract but in relation to the “other-regarding” behavior depicting the compliance with the social norms. With these questions, we want to analyze whether the agent actually takes into consideration social norms as an important factor in performing his job and in the relationships he carries out with his clients.

4.4.4.1 Standard Agency Theory and Rational Choice Theory prediction of the experiment:
As already mentioned in the abstract, the standard agency theory focuses on the idea that individuals are selfish and only seek their own utility’s maximization, through the engagement in behaviors and actions that have the sole scope of optimizing their personal interests. In a situation like the one we are currently analyzing, where there is the presence of multiple dimensions of performance that the agent is required to carry out on behalf of the principal and only one of these dimensions can be “measurable” by the latter; agency theory (strongly guided by the principle of rational choice theory) predicts that the agent will focus mainly on the measurable one. In our field experiment, the standard agency theory predicts that the consultants will mainly focus the quality of the final outcome required by the client company (measurable dimension). Therefore, when asked in the survey, consultants are expected to provide the highest level of importance to this first dimension and to respond by

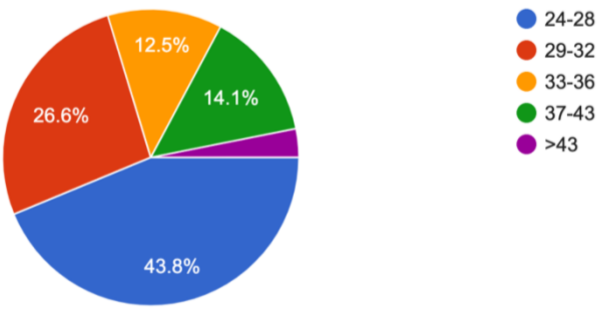
providing the minimum level of importance to the two other "unmeasurable dimensions": timing of the project and confidentiality towards the client's sensible information.
In addition, given that the standard linear agency theory only "believes" in rational behaviors and actions, the prediction (both in a unidimensional and multi-dimensional context) is that the consultants will not attribute any kind of importance to the social norms or the concepts of fairness and reciprocity in the development of their job, and they will not change their approach towards the project if they feel that the client companies are not behaving in the correct way towards them or not respecting the norms.

4.5 The Results

4.5.1 Demographic information:

A sample of sixty-five individuals has responded to the survey in the months of April and May 2020. The respondents are employees in high-level consultancy companies of different sectors, including financial and pharmaceutical, in Italy. The sample of individuals was composed of a slight preponderance of men (60% men and 40% women, as shown in graph n.2 in the Appendix) and by more than 60% of less than thirty-two years old consultants while the remaining 40% were above thirty-three years old (Figure 12):

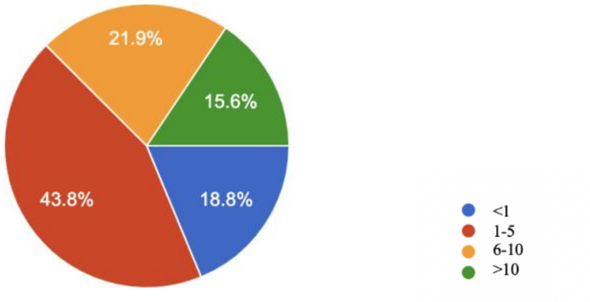
Figure 12: Age composition



Even though the sample was composed by a large proportion of young people, it can be shown by the graph below that only 19% of the individuals that responded to the questionnaire had less than one year of experience in consulting while the remaining 81%

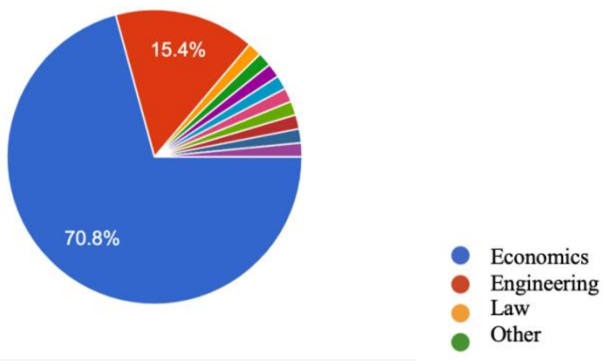
had been working in the sector for more years. More specifically, as shown in figure 13 below, almost half of this 81% (38.4%) are highly experienced consultants with more than six years of experience in the role.

Figure 13: Consulting Experience



Lastly, 95% of the respondents in the sample have graduated to a Master's degree, while the remaining 5% have a Bachelor's degree. Moreover, the vast majority of the sample graduated in Economics (70.8%) and around the 15% in the Engineering sector. The remaining 15% is divided into a number of different degrees, with the majority in the scientific field.

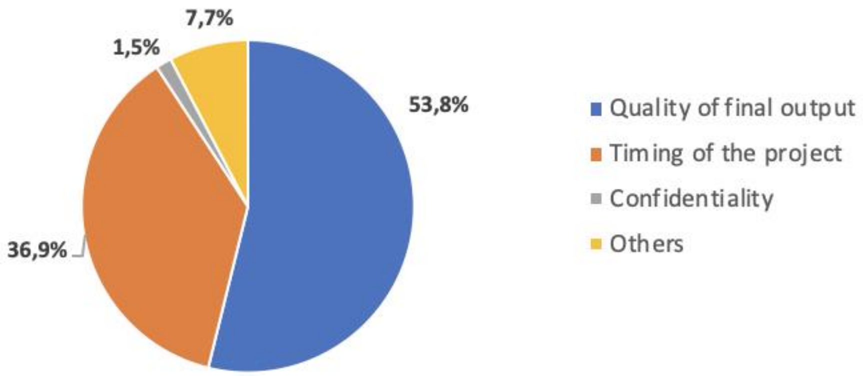
Figure 14: Faculty of Degree



4.5.2 Results on the research question:

The first set of questions was aimed at analyzing the level of importance of the different dimensions of focus in the execution of the respondent's job as consultants. The first question was deliberately open, to let the respondent freely express their opinion on which dimension is the most important for them. Given that it was an open question, to simplify the analysis the responses have been grouped in macro categories according to their nature. As shown in the graph below, more than 90% (92.3%) of the sample considered one of the three primary dimensions of the research as the most important one. Of these, more than half (53.8%) ranked quality of the final result as the most important while 36.9% considered timing as the most important dimension. Surprisingly, only one respondent considered confidentiality of the client's sensitive data as the most important dimension. In addition, the remaining 7,7% of the respondents provided answers which were classified as "Others" that do not comply with the dimensions we are currently analyzing (such as relationship with the clients etc.).

Figure 15: Response to the open question on the most important dimensions of performance



The next set of questions refers to the level of importance that the respondents attribute to each single dimension individually (on a scale from 1 to 10). A comparison of the three can be observed in the graphs below.

Figure 16: Level of importance attributed to the quality of the final outcome

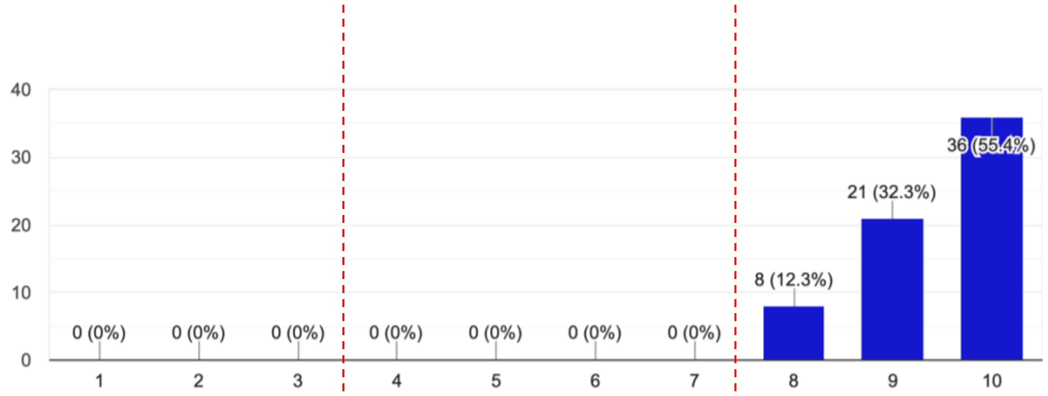


Figure 17: Level of importance attributed to the timing of the project

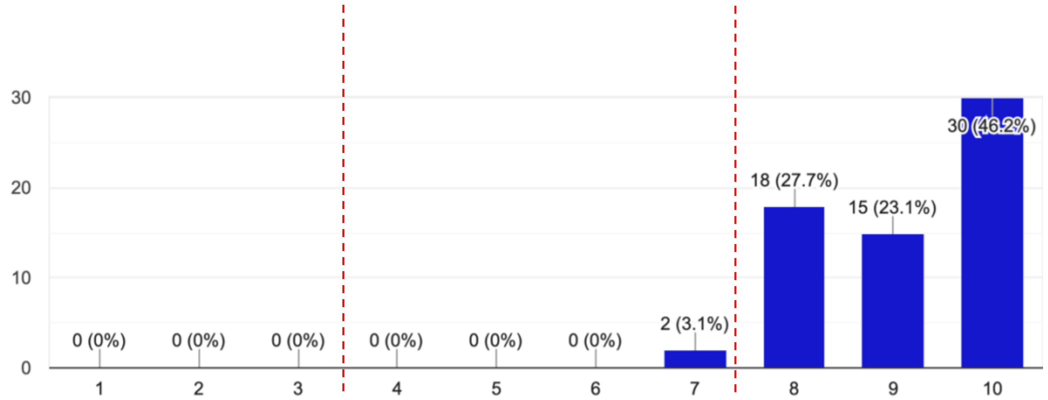
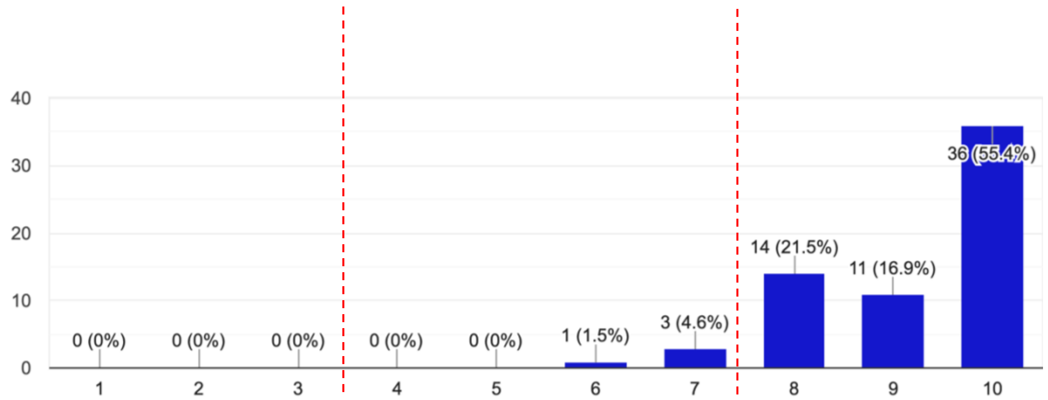


Figure 18: Level of importance attributed to the confidentiality of client's sensitive data



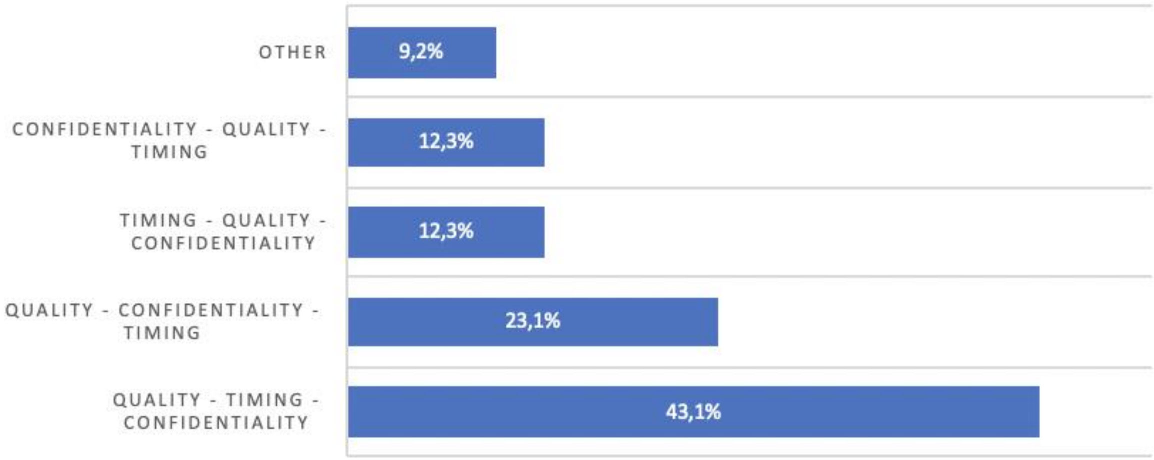
For the analysis of these graphs above, we considered the votes from 1 to 3 as "low importance", 4 to 7 as "medium importance" and from 8 to 10 as "high importance". Generally speaking, it can be observed that all three dimensions were considered very important, with more than 90% of the respondents giving to each of the three dimensions a rank between 8 and 10. More specifically, figure 16 shows that for the first dimension, the quality of the final outcome, all respondents attributed a high level of importance (100% of responses were in the range between eight and ten), with 55.4% of them answering with the maximum value. The same applies to the two other dimensions, as displayed in Figures 17 and 18, with a slight below ranking as compared to the first one. In fact, for the timing of the project dimension 96.9% of the individuals ranked it as "highly important", while for confidentiality 93.9% of the respondents in the sample ranked it as "highly important".

After analyzing the level of importance that the consultants in the sample provide to each dimension singularly, the next question focuses on the rank of importance that the respondents attribute to our three dimensions together. As shown in Figure 19 below, the analysis of the results revealed that for more than 65% of the sample ranked the dimension of quality of the final outcome as the most important one. Of this 65%:

- 2/3 (43.1%) considered timing of the project as the second most important dimension, and confidentiality as the third one;
- 1/3 (23.1%) considered confidentiality as the second most important dimension, and timing of the project as the third one;

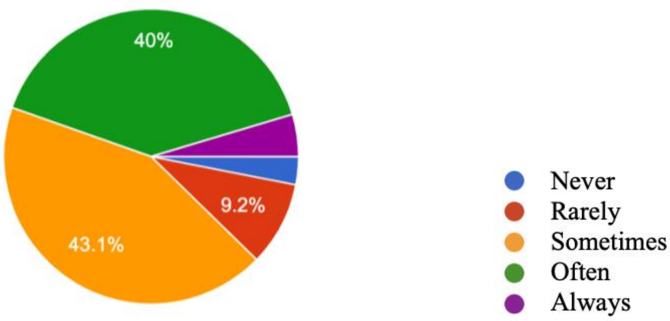
Instead, almost 25% (24.6%) of the remaining respondents were evenly split between those that considered time and those that consider confidentiality as the most important dimension (ranked as first), while the quality of the final outcome remained second for both. Finally, 7% of the answers have been classified as "Others", composed by small percentages of other combinations of dimensions.

Figure 19: Ranking in order of importance



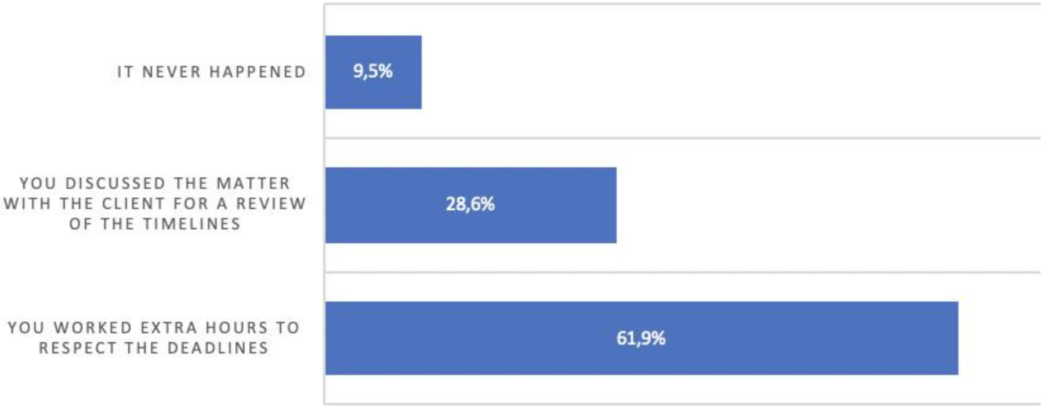
The next set of questions focuses on the "timing" dimension. The first interesting result is that almost 90% (87.7%) of the sample declared that it is not uncommon for the time assigned to a project to not correspond to the real needs. In particular, as shown in the figure below, 40% responded that it occurred often, 43.1% responded that it sometimes occurred and 5% even responded that it always happened in their experience.

Figure 20: Occurrence of timing established for a project not reflecting real needs



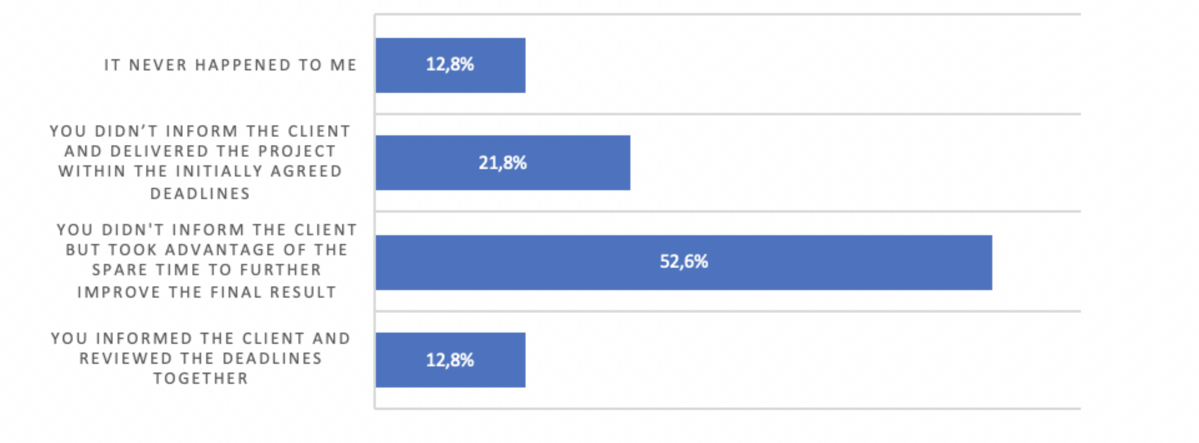
The two following questions allowed the respondents to provide more than one answer simultaneously. In the scenario in which the time agreed with the client turned out to be lower than the one actually necessary, 62% of the responses show that the consultants worked extra hours to respect the agreed deadline. On an opposite note, 28.6% declared that they discussed with the client in order to agree on a revised timeline. In addition, 9.5% of the respondent declared they never incurred in such situation.

Figure 21: Behavior when the time agreed < time necessary



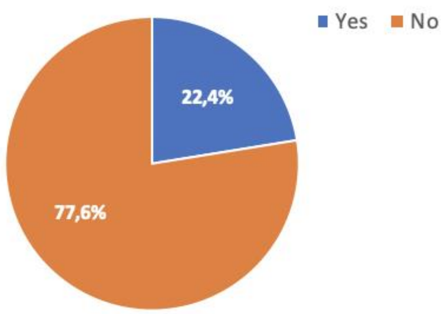
In the opposite scenario, when the time agreed with the client turned out to be higher than the one actually necessary, roughly 3/4 of the responses of the sample (74.4%) revealed that the consultants did not inform the client. Of this, 52.6% took advantage of the extra time to further improve the quality of their deliverables while the others just presented the results in the agreed timeline. In addition, 12.8% of the sample informed the customer and re-discussed shorter timelines, while another 12.8% of the responses reveal that this kind of situation never occurred to them.

Figure 22: Behavior when time agreed > time necessary



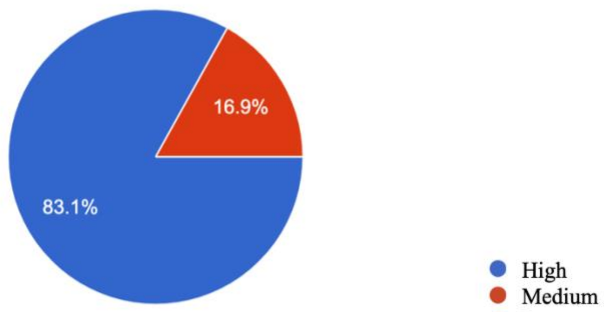
The last questions refer to the influence of fairness and social norms on the behavior of consultants. Recalling the second chapter of the abstract, critiques to the agency theory rely on the assumption that individuals do not act rationally and only aim at maximizing their utility, but may behave according to what is perceived as "fair" by them or according to the social norms. As shown in Figure 3 in the Appendix, more than 60% of the respondents declared that they rarely or never experience unfair behavior in the relationship with their customers. The remaining 40% stated that they only occasionally encounter this situation while only one respondent of the sample declared that it happens pretty often. Out of those that encountered this situation, Figure 23 below reveals that 77.6% did not change their approach towards the project. Only the remaining 22.4% declared that their approach towards the project has changed by further increasing their attention towards customer needs, quality of the project and their own self-protection (such as documenting all the interactions and increasing the formality).

Figure 23: Respondents that changed their approach to the project



The last section of the questionnaire focused on the importance that consultants attribute to social norms in their profession. 81.3% of the respondents declared that social norms are very important in the exercise of their job and in the interactions with their clients and colleagues while the remining 16.9% attribute it a medium level of importance. No one responded that social norms have low importance.

Figure 24: Importance of Social Norms in the exercise of their job and in the relationships with clients and colleagues

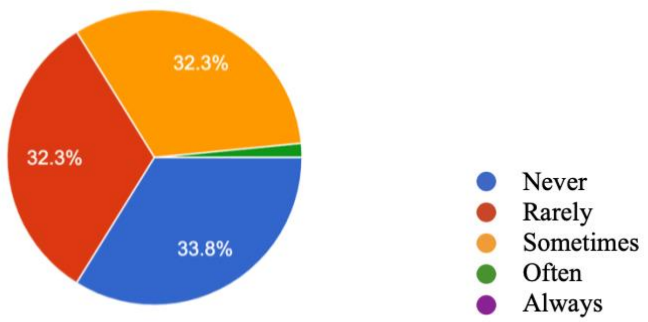


As shown in Figure 25 below, when asked whether they interacted with customers that did not respond to social norms, the respondents were split in three groups:

- 1/3 (33.8%) of them declared that they never dealt with customers that did not respect social norms;
- 1/3 (32.3%) of them declared that they rarely dealt with customers that did not respect social norms;
- 1/3 (32.3%) of them declared that they sometimes have to dealt with clients that did not respect the social norms

Only one respondent declared that he often experienced customers not complying with social norms.

Figure 25: Occurrence of dealing with customers not complying with social norms



In addition, out of the ones that declared that they experienced customers not respecting the social norms, 89% of them stated that they did not change their approach towards the project while the remaining 11% stated that they did.

5. CONCLUSION

The objective of this abstract was to analyze, through the use of an experiment in the form of anonymous survey, what happens when two individuals engaged in a principal-agent relationship have to satisfy multiple dimensions of performance, only one of which can be directly measured by the party representing the "principal".
The first chapters of the thesis focus on an in-depth analysis of the Standard Agency Theory and on the critiques that it has been subject to over the years, with a particular focus on the concepts of reciprocity, fairness and compliance with social norms, which we refer to as "Other-regarding" behaviors.
In the last chapter, an extension to the agency theory was introduced with the presence of multiple dimensions of performance to be satisfied by the agent. Through the use of a survey handed out to a group of consultants, our goal was to examine their behavior when he or she was required to satisfy more than one dimension of performance by their client company, only one of which directly measurable by the latter. The choice to focus on the consulting environment was driven by the existing similarities in the relationship between the principal and the agent, and the consultants and their clients.

According to the standard agency theory, an agent in this kind of situation, driven purely by rationality, should solely focus on the measurable dimension while providing the lowest level of effort on the other unmeasurable ones. We wanted to analyze whether in our experiment this assumption was confirmed in the behavior of the consultants, or whether they would act according to what the critiques anticipated (following the concepts of fairness, reciprocity and social norms).
The experiment was performed between April and May 2020 on a sample of sixty-five individuals from high-level consulting companies in the financial and pharmaceutical sectors in Italy. The results from our survey reveal that there are individuals which only focus on utility maximization as the Standard Agency Theory predicts, but there are also many deviations from this rationality. In fact, the standard agency theory would imply the respondents of the survey to provide answers that lead to the "quality of the final outcome", the measurable dimension, as the most important and expected them to provide the lowest amount of importance (and as a consequence of effort on the job) to the two other unmeasurable dimensions (timing of the project and confidentiality of sensitive data). Our sample confirms us that the respondents provide the highest level of importance to the quality

of the final outcome; however, results also show a contradiction with the expectation of them providing the minimum level of importance to the other two. In fact, as shown in the analysis above, almost 37% of the sample ranked "timing of the project" as the most important dimension in the open question. Moreover, when asked to provide the level of importance to each single dimension, 90% of the consultants of our sample ranked all three in the "highly important" range (between eight and ten). In addition, in the question asking to rank the dimensions in order of importance, 1/4 of the individuals in the sample referred to either "timing of the project" or "confidentiality" as the first dimensions.

Focusing on the "timing of the project" dimension of the survey, the standard agency theory stated that it would be irrational for consultants to establish a timing which is shorter than the amount actually required. However, results from our sample reveal that almost 70% of the consultants that found themselves in that situation have decided to work extra-hours, an action considered irrational by the rational choice theory. In the opposite case, when the agreed timing was longer than the amount actually required, the standard agency theory expected the consultants to not inform the client and not continue to work on the project. Nevertheless, our studies reveal that 75% of the consultants in our sample continued to work on the project either by reviewing the timelines with the client companies or by providing extra-effort on the job to further improve the performance.

Furthermore, in the second chapter of the abstract, we have seen that rational choice theory, which is a pillar of the agency theory, does not predict any deviation from the implementation of rational actions and behaviors; in particular, deviations driven by social norms, perceptions of fairness or the concept of reciprocity. However, the results from our sample of consultants reveal the opposite as 100% of the respondents consider social norms as an important element, with 83.1% attributing them a high level of importance performing their work and in the relationships that they create with clients and other colleagues.
Lastly, another deviation that we aimed at analyzing through our survey is the one motivated by the reciprocity principle. We asked the consultants in our sample if their approach towards the project and the work would change if they had the perception of the client company not behaving fairly towards them or not following the social norms. The results revealed that only 11% of the individuals in the sample changed their approach towards the project when they perceived that the principal was not respecting the social norms, and around 23% of the individuals in the sample changed their approach towards the project when they perceived

that the principal was not acting fairly towards them. On the other hand, 89% and 77% of the individuals we interrogated that found themselves in that type of situation did not change their approach towards the project.

Recalling what has been said at the end of the second chapter of the abstract, through the study of a sample of sixty-five individuals in the consulting environment, we can conclude that, according to our experience, people behave according to a mix of rational choice theory and “other-regarding” behaviors. In fact, results show situations in which the respondents in our sample demonstrated behaviors that followed rationality, but also showed situations in which the individuals assuming the role of the agent contributed a high level of importance to the unmeasurable dimensions and behaved irrationally. These findings need to be further confirmed through more experiments in different sectors and with a broader sample of respondents, but from our experience we can conclude that the critiques on deviations from rationality that have been applied to the standard linear agency theory should also be taken into consideration in a multi-dimensional environment.

6. APPENDIX

Figure 1: Demographic questions of the survey

1.

Age

- 24-28
- 29-32
- 33-36
- 37-43
- >43

2.

Sex

- M
- F

3.

Educational Degree

- High School Diploma
- Bachelor Degree
- Master Degree

4.

Faculty

- ◯ Economics
- ◯ Engineering
- ◯ Law
- ◯ Other...

5.

How many years have you been in counseling?

- ◯ <1
- ◯ 1-5
- ◯ 6-10
- ◯ >10

Figure 2: Gender of survey's respondents

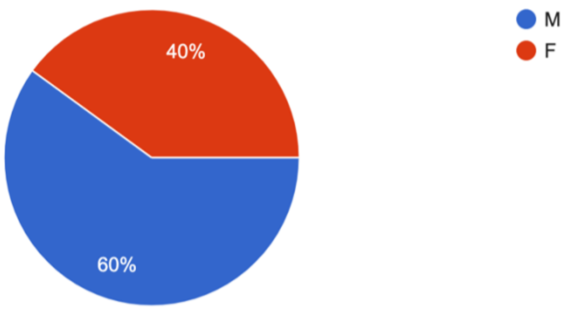
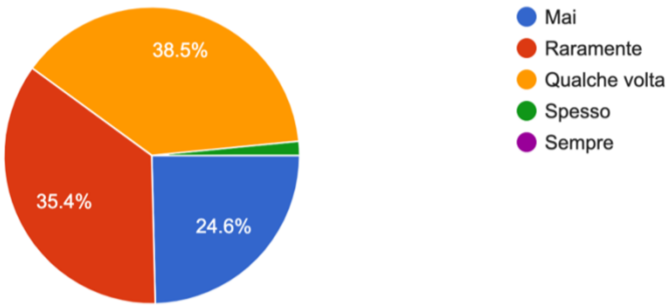


Figure 3: Occurrence to which the respondents incurred in unfair behavior from their clients



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DIPARTIMENTO DI IMPRESA E MANAGEMENT

Cattedra di Managerial Decision Making

Executive Summary: The Effects of Multi-Dimensionality on Agency Theory

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Index

1. Executive Summary

The following thesis studies the effect that the presence of a multi-dimensional performance context has on the Agency relationship that arises in a contractual agreement between a principal and an agent. In particular, it analyzes whether the presence of more than one dimension of performance, to be achieved by the individual representing the agent, confirms or denies the critiques that the Agency Theory has been subject to over the years. These critiques refer to the so called "Other regarding" behaviors such as the principles of Reciprocity, Fairness and Social norms.

2. Agency Theory

One of the pillars of the Standard Economic theory, particularly important in the interactions that arise between individuals within the boundaries of an organization, is the so called "Agency Theory". In fact, this theory can be applied to any owner-manager relationship, since it studies the behavior of two individuals, an "agent" and a "principal", engaged in a contractual relationship where the former is delegated one or more activities on behalf of the latter. The agency relationship that arises between the two individuals involved is characterized by a series of hypothesis:

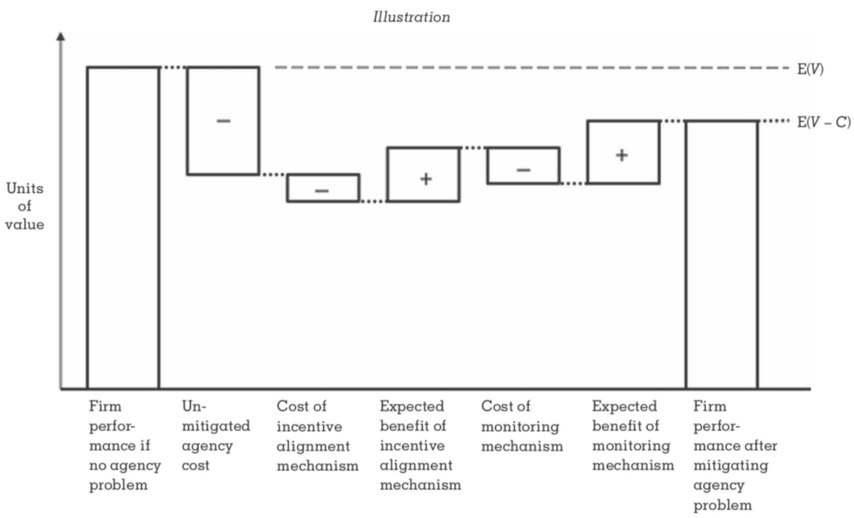
- The separation between the agent and the principal;
- Incomplete information (asymmetry): where one of the two parties is more informed than the other;
- Conflicting interests between the principal and the agent: characterized by two separate utility functions;
- Rationality;
- Uncertainty conditions;
- Different attitudes towards risk

According to the theory, the presence of all the elements listed above, with a particular attention on the misalignment of goals between the two parties and the tendency of individuals to behave rationally, motivates the person acting as the agent to deviate from his responsibilities towards the principal and to act according to what is best for his own personal interests. In fact, this deviation is further incentivized by the combination of asymmetries of information and elements of uncertainty. The former is represented by the lack of information that the principal faces due to his impossibility to constantly monitor whether the agent is carrying out his job. Instead, the element of uncertainty consists of the occurrence of unpredictable events such as environmental factors, demand changes, etc. As a matter of fact, these unpredictable events may have a negative impact on the final outcome required by the principal but are by no means related to the activities carried out by the agent. Combining the asymmetry of information and the unpredictable events, in case of negative outcome the principal will not be able to recognize whether the unsatisfactory payoff is a result of the agent's low level of effort or of other contingent elements which could not have been controlled. Only the agent will be able to know whether his effort was enough, while being aware that due to the principal's lack of information he will receive the same compensation exercising both a high and a low level of effort. Given the circumstances, rational choice theory highlights the possibility of the agent always being motivated to exercise a low level of effort driven by the fact that due to the principal's lack of information he will be rewarded even in the event of a negative performance of the business.

In order to avoid the incurrence of these agency costs, the Agency theory highlights how critical it is for the principal to implement the most appropriate monitoring and compensation schemes, aimed at reaching the appropriate trade-off which motivates the agent to act on his behalf and to aligns the interests of the two.

The following picture illustrates the evolution of an organization's performance starting from a situation in which there are no agency costs, followed by a depiction of what the performance would be with agency costs not mitigated and what the total value of the company would be with a mitigation of the costs (as the difference between the costs of incentive alignment and monitoring strategies and the benefits associated to them).

Figure 1: Standard Agency Theory



Source: Bosse & Philipps, 2016

3. Critiques: Other-Regarding Behaviors

While on one side the Agency theory focuses on the idea that the agent will only behave according to what is most rational for him, throughout the years it has been subject to a variety of critiques which state the contrary. In particular, the abstract focuses on three attitudes referred to as "other-regarding" behaviors, which follow the principles of Reciprocity, Fairness and compliance with Social Norms. According to these theories, individuals do not always behave in a selfish way but are strongly driven by their perceptions on the people they interact with and the context that surrounds them.

The concepts of Fairness and Reciprocity are strictly related, stating that if an agent feels that the principal is behaving "fairly" towards him, such as compensating him correctly or providing him appropriate working conditions, the former might reciprocate that behavior by exercising a higher effort in order to achieve the latter's goals. Vice versa, if the agent perceives that the principal is not behaving "fairly" towards him, he might reciprocate that negative behavior by exercising a low amount of effort on the task required, leading to a poor outcome for the latter. Evidence on the presence of reciprocity and fairness versus the prediction of rationality is provided in the abstract through a series of game theory events such as: the ultimatum game, the gift-exchange game, the prisoner's dilemma (both simultaneous and sequential), the investment game and the dictator's game. In fact, these events demonstrate that there are situations in which people would be willing to expose themselves to higher costs just to penalize unfair or negative behaviors, and situations in which people are inclined to compensate fair and positive behaviors at their own expenses. Moreover, a demonstration of the comparison between game theory's "best-shot games" and "extended ultimatum games" provides evidence on the perception of fairness in the act of making a decision. To conclude, these experiments provide evidence on cases in which the individual's motivation to behave reciprocally is stronger than the one to behave rationally and choose the alternative that yields them the highest payoff.

In addition, critiques to the Agency theory also arise from the divergence between the Adam Smith's "Homo economicus" and Emile Durkheim's "Homo sociologicus" schools of thought. The former relies on the already mentioned rationality theory while the latter links human attitudes to social norms. Social norms are groups of behavioral rules and principles founded on the common belief and understanding of which actions are forbidden, mandatory or allowed (Ostrom, 2000). These rules are present in a variety of forms and types and are strongly linked to the feelings of the individuals subject to them, introducing a sense of responsibility and inducing them to behave in certain ways without giving too much consideration to the consequences of the decision. Therefore, individuals often rely on social norms as a "routine", following them without giving too much thought on the decision and often choosing an alternative even if it does not provide the highest utility for them (irrationally).

Applying these critiques to the principal-agent relationship, we realize that the agent will not always deviate from his responsibilities towards the principal and act rationally by exercising a low amount of effort on the task that the latter cannot monitor; but there are situations where the agent will be motivated to act "fairly", to reciprocate a positive or negative behavior, or to follow the social norms applicable to the job position even when it's not what the Rational Choice Theory would indicate.

All in all, there are no doubts on the fact that there are situations and individuals that behave in an absolutely selfish way as the theory predicts. However, there are also cases in which this assumption does not reflect what happens in reality but the individuals involved may be driven by other elements, such as the other-regarding behaviors.

4. Multi-dimensional Agency Theory

As mentioned above, the Agency Theory has been subject to many discussions and critiques over the years; however, very few studies focus on its extension to multiple dimensions of performance. In fact, the standard agency relationship is based on a linear assumption under which the principal and the agent only have a single criterion they want to maximize: the level of profitability of the organization for the principal and his personal utility function for the agent. This is rarely the situation in reality though, given that there are often multiple tasks required to be carried out by the agent related to the multiple performance goals desired by the principal. The figure below displays the different scenarios that can be applicable to the extension of the theory. The standard assumption is represented in *Case 1*, where both parties have a single dimension to maximize; instead, the other *Cases* show that there may also be situations in which only one of the two parties requires the satisfaction of multiple dimensions or where both simultaneously do.

Figure 2: Multiple criteria Agency Models

			AGENT
	Dimension	**Single**	**Multi**
	Single	Case 1	Case 2
PRINCIPAL	**Multi**	Case 3	Case 4

Source: Vetschera, R., 1998. Multicriteria agency theory

For the purpose of the paper, the underlying idea is to focus on the presence of multiple dimensions to be optimized within the organization. As Schiemenz and Seiwert's (1979) studies highlight, organizations are very complex institutions with an elaborate goal structure that cannot be reduced to a single simple "profit maximization" concept. In fact, every organization has at least three main objectives: optimizing the level of quality of the goods and services produced, keeping a high level of quantity and minimizing the expenses as much as possible. In addition, the theme of multi-dimensionality is becoming particularly important in the recent years due to the fact that organizations, apart from focusing on the three elements just mentioned (trade-off between quality-quantity-costs), are constantly striving to respect environmental conditions, corporate social responsibilities etc.

After demonstrating that the agency theory must be extended and that in reality there are multiple dimensions to be satisfied from both individuals within the boundaries of an organization, it is important to analyze the different levels of measurability of these dimensions. In fact, there are actions and tasks where the performance can be measured with high or medium/low levels of accuracy; however, there are also actions where the resulting performance is not measurable at all. In the latter case, when a task is sub-divided into several dimensions, only some of which can be measured with more accuracy than others, the prediction of the rational choice theory (and of the unidimensional principal-agent relationship) is that the agent will focus mainly on the measurable ones implementing a high level of effort on them. At the same time, the theory expects the agent to exercise the minimum effort possible on the dimensions which are more difficult to measure by the principal.

The aim of this thesis is to analyze what happens to the dynamics of the principal-agent relationship in a multi-dimensionality context; in particular, in circumstances in which the agent is required to achieve more than one dimension of performance from the principal but only one of those is directly measurable. As mentioned above, the prediction of the standard agency theory is that the agent will shift all of his effort solely on the dimensions which are directly measurable by the principal, while providing the minimum effort possible on the "unmeasurable ones". But in reality, would the agent purely behave rationally, or would he follow to the "other regarding" behaviors such as the principles of reciprocity, social norms and fairness, and carry out all of the dimensions in the most efficient way?

4.1 Case Study: Agency Relationship in the consulting environment

To provide an answer to our research question I carried out a field experiment in the modality of an anonymous survey, to examine how a group of individuals in a consulting company environment would behave in an agency relationship with multidimensional performance characteristics. The experiment has been performed in this sector given that the relationship between a consultancy firm and its clients (the companies asking for assistance) can be looked at from a principal-agent point of view. In fact, the group of consultants (agent) and the client companies (principal) engage in a contractual agreement for the former to carry out actions and achieve results on behalf of the latter. Like any principal-agent relationship, the reason why the client companies ask for assistance from the consultants is because of their lack of time or knowledge to carry out the activities in question, motivating them to hire subject matter experts. In addition, the context allows the presence of information asymmetries, given that the client company cannot be constantly monitoring what the consultants are doing. For these reasons, there is the presence of elements of uncertainty and asymmetries of information which need to be taken into consideration in the achievement of the final result and in the compensation that the client companies provide to the consultants.

The multi-dimensional component in the experiment is represented by the hypothesis of the principal's (client company) requirement from the agent (consultants) to optimize three different dimensions: the quality of the final outcome, the timing of the projects and the confidentiality towards his sensitive information.

1. The first dimension refers to the ability of the consultancy firm to carry out the activity required by the client company in the best possible way, by exercising high-level strategies aimed at the achievement and satisfaction of the client's needs;

2. The second dimension, the timing of the project, represents the client company's desire of the correct consideration and respect by the consultants of the established deadlines to reach certain objectives of the project. In fact, during the stipulation of a contract between a consultancy company and its clients, not only a final date for the completion of the project is established, but also a series of "intermediate milestones". The latter are organized in order to reassure the client that the project is being managed in the correct way, to make eventual corrections and adjustments on the work carried out until that moment and to provide an overview on the following steps that are expected to be carried out;

3. Lastly, the confidentiality towards the client's sensitive information arises from the fact that during the contractual relationship and the development of a project between the two parties, the consultants might have access to important internal data of the client company. For this reason, a "confidentiality agreement" between the principal and the agent is stipulated in order to guarantee the security of the information of the individual assuming the role of the principal and to guarantee the protection of its data assets and of its computer data.

For the purpose of the experiment, it can be observed that only one of the three dimensions required by the principal can be directly measurable: the quality of the final outcome. In fact, when a project is finished or in the check-point meetings organized to observe the progresses made, the client companies can analyze whether the outcome provided by the consultants matches the final (or intermediate) result that was expected and required by them. In this way, through their level of satisfaction of the final result, they are also able to evaluate whether the consulting company exercised the highest level of effort on the job or not.

Differently from the first dimension, the respect of the timings established in the contracts cannot be easily measured by the principal. The reason behind this is that the client company will not be able to monitor twenty-four-seven whether the consultants are actually working on their project or not and whether the deadlines and benchmark dates established in the agreement reflect the ones that are really necessary. In fact, two events can take place:

- A situation in which the consultants and the client company agree on a date for the delivery and presentation of the final or intermediary results of the project, while in reality it takes them a greater amount of time to accomplish the results in question;
- A situation in which the consultants and the client company agree on a date for the delivery and presentation of the final or intermediary results of the project, while in reality it takes them a shorter amount of time to accomplish the result in question.

In the first case, standard agency theory and rational choice theory predict that it would be irrational for the agent to agree on a date to present the results to the client which presupposes a shorter amount of time to carry out the job than the one actually required. This situation would in fact oblige the agent to work extra hours in order to get the job done within the deadlines. On the contrary, Agency and rational choice theory highlight that in the second case it would be rational for the agent to establish a date to present the results to the principal which is ahead of the timing that is actually required, without the latter being aware of it.

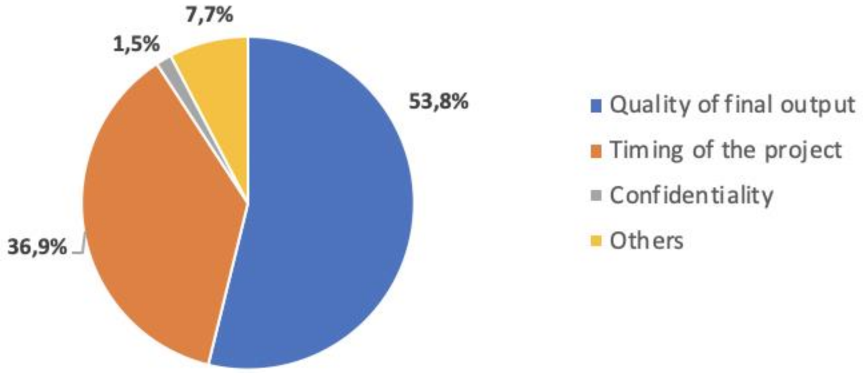
Lastly, the third dimension of performance is also quite difficult to observe and measure from the principal's side. In fact, the client company is well aware of the fact that in the process of working and carrying out a project for them, the consultants have access to important internal and potentially sensitive information on the company and its modus operandi. Moreover, companies asking for assistance to consulting companies are also aware of the possibility that the latter may be concomitantly carrying out projects for other companies, which may or may not include competitors of the principal itself, giving rise to a situation of conflicts of interest. In this case, the principal cannot monitor and cannot be aware of whether the consultants are actually working for competitors or not, and whether they are voluntarily or involuntarily disclosing important financial information.

Results of the survey:

In order to evaluate whether the consultants would actually focus mainly on the measurable dimensions or not, an experiment was performed between April and May 2020 on a sample of sixty-five individuals from high-level consulting companies in the financial and pharmaceutical sectors in Italy.

The results from our survey reveal that there are individuals which only focus on utility maximization as the Standard Agency Theory predicts, but there are also many deviations from this rationality. In fact, the standard agency theory would predict the respondents of the survey to provide answers that lead to the measurable dimension, the "quality of the final outcome", as the most important. At the same time, it expected them to provide the lowest amount of importance (and as a consequence of effort on the job) to the two other unmeasurable dimensions: timing of the project and confidentiality of sensitive data.
Our sample confirms that the respondents provide the highest level of importance to the quality of the final outcome; however, results also show a contradiction with the expectation of them providing the minimum level of importance to the other two. In fact, as shown in the figure below, almost 37% of the sample responded with "timing of the project" as the most important dimension when asked in an open question what is the element that they believe to be the most crucial while carrying out a task.

Figure 3: Response to the open question on the most important dimensions of performance



Moreover, when asked to rank on a range from 0 to 10 the level of importance to the three dimensions separately, 90% of the consultants in our sample ranked all three elements in the "highly important" range, by providing a value between eight and ten.
In addition, in the question asking to list in order of importance the quality of the final outcome, the timing of the project and the confidentiality of data, 1/4 of the individuals in the sample referred to either "timing of the project" or "confidentiality", the unmeasurable dimensions, as the most important.

After analyzing the importance that the consultants attribute to the three dimensions, a second section of the survey focused on the unmeasurable element of "timing of the project". While the standard agency theory stated that it would be irrational for consultants to establish a timing which is shorter than the amount actually required to carry out the job, the results from our sample reveal that almost 70% of the consultants found themselves in that specific situation and decided to work extra-hours, an action considered irrational.
In the opposite case, when the agreed timing was longer than the amount actually required, the standard agency theory expected the consultants to not inform the client and not continue to work on the project. Nevertheless, as shown in figure 4 and figure 5 below, our studies reveal that 75% of the consultants in our sample continued to work on the project, by either reviewing the timelines with the client companies or by providing extra-effort on the job to further improve the performance.

Figure 4: Behavior when the time agreed < time necessary

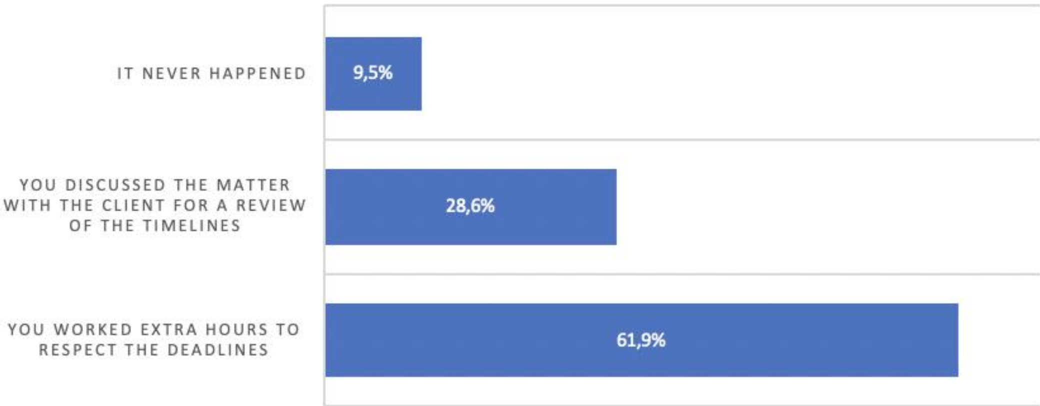
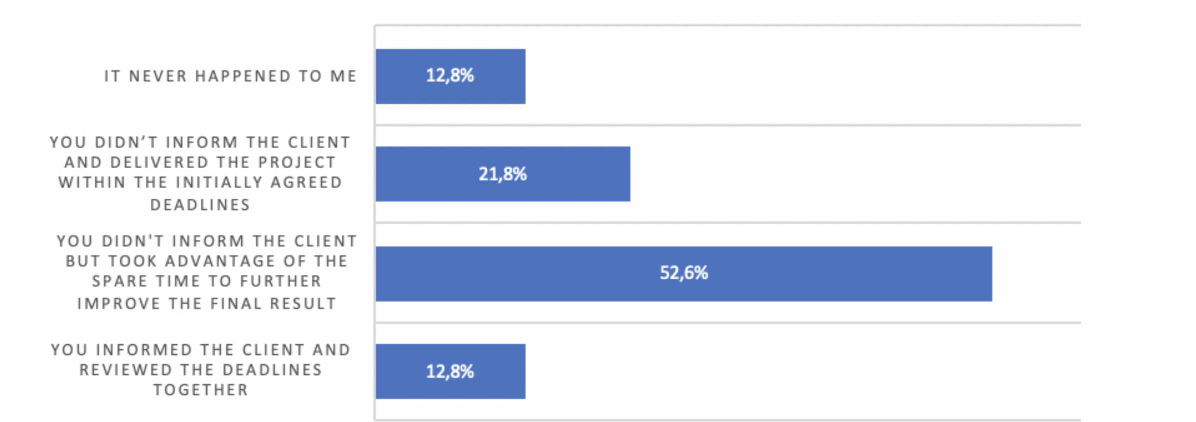
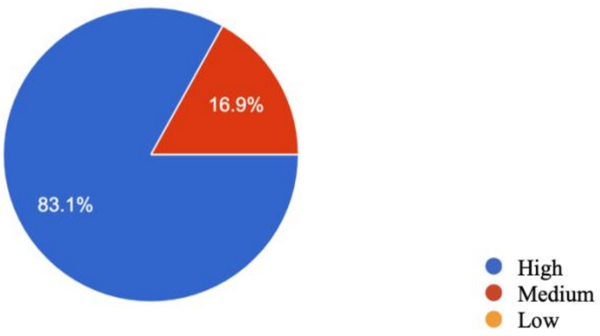


Figure 5: Behavior when time agreed > time necessary



Focusing on the compliance with social norms critique of the "Other-Regarding" behaviors, the standard agency theory predicted that individuals would not deviate from rational behaviors by attributing importance to Social Norms. However, the results from our sample of consultants reveal the opposite as 100% of the respondents consider social norms as a very important component in the execution of their job. In particular, 83.1% of the sample attributed Social norms a high level of importance in the performance of their job and in the relationships that they establish with clients and other colleagues.

Figure 6: Importance of Social Norms in the exercise of their job and in the relationships with clients and colleagues



Lastly, another deviation that we aimed at analyzing through our survey is the one motivated by the reciprocity principle. We asked the consultants in our sample if their approach towards the project and the work carried out would change if they had the perception of the client company not behaving fairly towards them or not following the social norms. The results revealed that only 11% of the individuals in the sample changed their approach towards the project when they perceived that the principal was not respecting the social norms. In addition, around 23% of the individuals in the sample changed their approach towards the project when they perceived that the principal was not acting fairly towards them. On the other hand, 89% and 77% of the individuals we interrogated that found themselves in that type of situation did not change their approach towards the project.

5. *Conclusion*

After a literature review on the Agency theory and the various critiques it has been subject to over the years, the objective of the abstract is to analyze the extension of this theory to a concept of multi-dimensionality. In fact, the majority of the studies that have been carried out on the relationship that arises between a principal and an agent are based on a linear relationship which predicts a single criterion to optimize for both parties involved. Through the use of an experiment in the form of anonymous survey, this thesis aims at observing what happens when two individuals engaged in a principal-agent relationship have to satisfy multiple dimensions of performance. In particular, we wanted to analyze a multi-dimensional situation in which only one of the elements that the agent is required to maximize can be directly measured by the party representing the “principal”.

According to the standard agency theory, an agent in this kind of situation, driven purely by rationality, should solely focus on the measurable dimension while providing the lowest level of effort on the other unmeasurable ones. After handing out the survey to a group of sixty five individuals working in high-level consulting companies in Italy, we wanted to analyze whether in our experiment this assumption was confirmed in the behavior of the consultants, or whether they would deviate from rationality and behave following the principles of fairness, reciprocity and compliance with social norms as the critiques anticipated. The choice of sampling a group of consultants for the survey was driven by the existing similarities in the relationship between the principal and the agent, and the consultants and their clients.

Through our results on a survey of sixty-five individuals of an age that goes from 24 to 45 years old in the Italian high-level consulting environment, we can conclude that, according to our experience, people behave according to a mix of rational choice theory and “other-regarding” behaviors. In fact, the results show a mix of situations in which the respondents in our sample demonstrated behaviors that followed purely rationality, but also showed situations in which the individuals assuming the role of the agent contributed a high level of importance to the unmeasurable dimensions and behaved irrationally. These findings need to be further confirmed through more experiments in different sectors and with a broader sample of respondents, but from our experience we can conclude that the critiques on deviations from rationality that have been applied to the standard linear agency theory should also be taken into consideration in a multi-dimensional environment.