

LA INFLUENCIA DE LOS STAKEHOLDERS SOBRE EL COMPORTAMIENTO MEDIOAMBIENTAL DE LOS DIRECTIVOS.

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RESUMEN

La importancia del medioambiente ha aumentado tanto en teoría como en práctica en los últimos años. Los “stakeholders” – empleados, proveedores, accionistas, gobiernos, organizaciones no gubernamentales – han jugado un papel fundamental en la modificación del rol de la empresa respecto al medio ambiente. Los investigadores sugieren que la importancia de un “stakeholder” es la suma de su poder, legitimidad y urgencia. Sin embargo, los estudios muestran que la percepción del directivo será la que finalmente determine la importancia de un “stakeholder” para la empresa. La literatura ha investigado en profundidad cómo reaccionan las empresas ante las presiones medioambientales por parte de los distintos “stakeholders”. Sin embargo, no se pocos investigadores se han centrado en las distintas estrategias que los “stakeholders” emplean para presionar a las empresas con prácticas que tengan en cuenta al medioambiente. Los “stakeholders” que tienen una menor capacidad para modificar el comportamiento de las empresas emplean tanto estrategias de presión directas (por ejemplo: boicots y manifestaciones ante las fábricas) como estrategias indirectas de presión (por ejemplo, a través del empleo de alianzas y el aumento de información para la sociedad sobre las prácticas medioambientales de las empresas). Este trabajo explora la presión social como estrategia indirecta de presión empleada por los “stakeholder” para modificar las decisiones medioambientales de las empresas y, a su vez mide la efectividad de dos mecanismos no coercitivos para modificar las decisiones respecto al medioambiente de los directivos con menor preocupación por el mismo. Para ello, un experimento, juego del dictador, se llevo a cabo para probar que los individuos que toman decisiones responden de forma distinta en términos de comportamiento si le afecta económicamente pero con consecuencias medioambientales. Los resultados muestran que la presión social puede ser utilizada como herramienta para modificar las decisiones sobre el medioambiente. Además, los resultados sugieren que la influencia de los “stakeholder” será mayor si el directivo/a es consciente que sus decisiones van a ser conocidas por cualquier “stakeholder” en cualquier de los mecanismo llevados a cabo en el experimento.

Palabras clave: medioambiente, stakeholder, estrategia medioambiental, comportamiento directivo

STAKEHOLDERS INFLUENCE ON MANAGERS' ENVIRONMENTAL BEHAVIORS

ABSTRACT

Environmental issues are becoming increasingly important in organization theory and practice. Stakeholders – employees, suppliers, shareholders, regulators, non-governmental organizations – have played a crucial role in modifying firms' environmental approach. Researchers suggest that a stakeholder's saliency is the sum of its power, legitimacy and urgency. Yet, studies show that managers' perception finally determines a stakeholder saliency. Stakeholder literature has investigated how firms react to pressures from stakeholders. However, few studies have focused on the diverse range of strategies a stakeholder can use to pressure firms to modify their environmental record. Stakeholders, which have less capacity to modify firms' environmental behavior, use as direct pressure strategies (for example, boycotts and demonstrations) as indirect pressure strategies (network, alliances and spreading environmental information about a focal firm). This paper explores social pressure as a tool for modifying decisions regarding environment and checking the effectiveness of two non-coercive mechanisms to modify environmental decisions of those individuals that have no commitment to environment. For that purpose, a dictator game experiment was carried out aiming to prove that decision makers submitted to several social stimuli respond differently in terms of behaviors affecting them economically, but with environmental consequences. Results show that social pressure can be used as a tool for modifying decisions regarding environment. And, results also suggest that stakeholder influence is higher if a manager is aware that their decisions will be known by stakeholders in any of the mechanisms undertaken in this experiment.

Keywords: environment, stakeholder pressure, environmental strategy, managerial behavior.

1. INTRODUCTION

Environmental issues are becoming increasingly important in organization theory and practice. Corporate environmentalism is emerging as a process of addressing environmental issues facing business (Aragón-Correa, 1998; Banerjee, 2001; Berrone and Gomez-Mejia, 2009). Stakeholders play a crucial role in the environmental management as they affect managers' environmental decisions (e.g. Buysse and Verbeke, 2003; Cordano, Frieze and Ellis, 2004; Sharma and Henriques, 2005).

Stakeholder literature (Berman, Wicks, Kotha and Jones, 1999; Carter, 2006, Hosmer and Kiewitz, 2005; Jawahar and McLaughlin, 2001; Scott and Lane, 2000) has mainly focused on how firms act and react to stakeholder pressures. In fact, studies show that firms may modify their environment decisions as they receive pressures from stakeholders as shareholders, employees or suppliers. For example, Christmann (2004) showed that the pressures exerted by various groups of stakeholders had led to the adoption of much more advanced environmental management models. Similarly, Lounsbury (2001) found that the Student Environmental Action Coalition -SEAC- forced universities to adopt advanced recycling programs. Further, Sharma and Henriques (2005) showed how stakeholder pressures had made possible the adoption of advanced environmental practices in the Canadian forestry industry. Stakeholder studies (Eesley & Lenox, 2006; Friedman & Miles, 2002; Sharma and Henriques, 2005) have investigated how stakeholders influence firms regarding corporate environmental commitment. So far, researchers suggest that the influence of stakeholders on firms depends on relationship structure, contractual forms, and institutional supports (Friedman & Miles, 2002) and on the power and legitimacy of a stakeholder (Eesley & Lenox, 2006; Welcomer, 2002). Some researchers (Frooman, 1999; Sharma and Henriques, 2005) established diverse strategies that a stakeholder may use to influence firms environmental decisions: withholding, usage, direct and indirect. Although previous literature (Garret, 1987; Pruitt, Wei and White, 1988, Smith and Cooper-Martin, 1997), has paid detailed attention to understand the direct influence – i.e. boycotts and civil suits - of stakeholders on managers' decisions related to natural environment (e.g. Fineman and Clarke, 1996; Sharma and Vredenburg, 1998), almost no attention has been devoted to analyze how indirect strategies may influence managers environment decisions. In the resource dependence theory, indirect strategies are those when a firm does not depend on stakeholders for resources (Frooman, 1999; Sharma and Henriques, 2005), so a stakeholder need to work through an ally or spreading environmental information about a focal firm. These strategies are getting a growing relevance because of its use to modify managers' decisions related to the environment, and therefore, firms' environmental approach (Sharma and Henriques, 2005).

Stakeholders, governments and firms are concerned about these indirect strategies. From a stakeholder point of view, it may be interesting understanding which pressure strategies are more effective. Governments and legislators, which appears to play the most influential role in various industries and countries (Buysse and Verbeke, 2003, Dasgupta, Hettige & Wheeler, 2000) – are increasing the use of these strategies through the publication of instalations' emissions inventories. Finally, firms may need to understand how stakeholders try to influence them in order to react and improve their relationships with stakeholders which may gain their profits.

In our project we seek to understand how stakeholders' indirect pressure affects to managers' decisions. In other words, we want to explore if stakeholders' strategies based on social pressure may be a tool for modifying decisions regarding environment and examine the effectiveness of two non-coercive mechanisms to modify environmental decisions of individuals. For that purpose, a dictator game experiment was carried out to see whether decision makers exposed to several social stimuli respond differently in terms of environmental behaviors which simultaneously affecting them in monetary terms. Experimental research (Kahneman et al., 1986; Forsythe et al., 1994) describe a dictator game as a situation where there are a pairs of subjects share a fixed amount of money, one of the subjects – the dictator- determines the division and that decision is imposed upon the second subject - the recipient. Results from our work show that indirect pressure may be used as a tool for modifying individuals' decisions regarding the environment. Results also suggest that stakeholder influence is higher if a manager is aware that their decisions will be known by stakeholders in any of the mechanisms undertaken in this experiment. In sum, our contributions in this work lies in addressising the relationship between stakeholder indirect pressures and managers' reaction to them. Specifically, we our main contributions are several: 1) A better understanding about the reasons why stakeholders could increase their power to influence managers through the use of information; 2) Analyze potential implications and consequences of the indirect influence exerted by stakeholders to managers.

The paper proceeds in the following manner: The next section addresses the theoretical development arguments that link stakeholder theory and managers' perceptions; the third section describes the sample and the experiment design and procedure; the fourth section interprets and discusses the experiment results; and last section concludes.

2. THEORETICAL DEVELOPMENT AND HYPOTHESES

Many works have been published about the stakeholder theory since the launch of Freeman's seminal book "Strategic Management: A stakeholder approach" (1984). Freeman defined the concept of stakeholder as to include any individual or group who can affect the firm's performance or who is affected by the achievement of the organization's objectives. Donaldson and Preston (1995) broadly classify three levels of stakeholder theory: Descriptive, normative and instrumental. Instrumental research is focused on the relationship between stakeholder management and performance and whether firms with an advance stakeholder management increase their benefits (Jones, 1995; Wood, 1991). Normative studies are concerned about how managers should approach to stakeholders from an ethical framework. And, finally, researchers in the descriptive level have addressed to describe the actual interactions between firms and stakeholders. Our study focus on descriptive literature where researchers (Carmin and Baiser, 2002; Rowley and Moldoveanu, 2003) have analyzed the use of mobilization or direct pressures by stakeholders to modify firm's environment behaviour.

Stakeholder literature (e.g., Berman, Wicks, Kotha and Jones, 1999; Clarkson, 1995; Freeman, 1984; Henriques and Sadorsky, 1999) has classified stakeholders with identical interests, claims or rights into different categories (e.g., primary and secondary stakeholder) or in different groups (e.g., community stakeholders, regulatory stakeholders, organizational stakeholders, and the media). Following the work of Clarkson (1995) stakeholders are classified in primary and secondary stakeholders. Primary stakeholders groups – shareholders,

employees, suppliers and customers- keep a direct relationship with the focal firm, so they are likely to be able to influence a focal firm, being critical actors for the survival of a firm. Secondary stakeholders – non-governmental organizations (NGOs) and the mass media – do not have direct relationship with a focal firm, and are not key players for the survival of a firm. So, their capacity of influence a firm is weaker than from the primary ones. However, lately their importance has been increased as they have spreaded their impacts of firms related social and ecological aspects of business (Sharma and Henriques, 2005).

Mitchell, Agle and Wood (1997) address the question which stakeholders really matter, proposing which determine stakeholders' salience – “the degree to which managers give priority to competing stakeholders claims” (Mitchell et al., 1997, pp. 854) – through three attributes: power, legitimacy and urgency. In their model, stakeholder salience as perceived by managers is positively related to the cumulative impact of the three stakeholder attributes. Power is defined as ‘a relationship among social actors in which one social actor A, can get another social actor B, to do something that B would not otherwise have done’ (Weber, 1947; Pfeffer, 1981). Legitimacy is defined as ‘a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs, and definitions’ (Suchman, 1995, 574). The final element of Mitchell et al.’s stakeholder identification and salience framework is urgency, which is defined as ‘the degree to which stakeholders claims call for immediate attention.’ A number of studies (Agle, Mitchell, and Sonnenfeld, 1999; Eesly and Lenox, 2006; Gago and Antolin, 2004; Knox and Gruar, 2007; Parent and Deephouse, 2007; among others) have sought to provide empirical support for Mitchell et al.’s (1997) identification and salience model. Agle et al.’s (1999) surveyed managers in 80 U.S. firms and they found that the reported power, legitimacy, and urgency of aggregate stakeholder groups influenced their reported saliency by firm managers. Similarly, Gago and Antolin (2004) used a sample of 277 Spanish environmental managers in order to analyze their perceptions of stakeholders’ power, legitimacy, urgency and salience of aggregate stakeholder such customers, employees, government, shareholders, and the community groups were all correlated, with regards environmental issues. More recently, Eesly and Lenox (2006) have also tested empirically Agle et al.’s model modifying salience measure -instead of measuring managers’ perception they use as managers’ actions. Their results show that salience is ‘determined by the degree to which a firm positively responds to a specific stakeholder request’ (Eesly and Lenox, 2006, pp: 776). Moreover, Parent and Deephouse (2007) claim that power is the most important element in the model. However, it is underlined in any empirical study that managers’ perceptions are crucial in the Agle et al.’s model, because they are finally who determine the stakeholder salience (Agle et al., 1999; Egri and Herman, 2000; Sharma, 2000).

Stakeholder theory has also addressed the question how stakeholders influence firms (Frooman, 1999; O’Connell, Stephens, Betz, Shepard, & Hendry, 2005; S. Sharma & Henriques, 2005). Stakeholder literature addresses this question from diverse perspectives. Friedman and Miles (2002) state that stakeholders influence over firms depend on relationship structure, contractual forms, and institutional supports available. As a consequence, probability that a shareholder or a partner has to persuade a firm about the environment behavior is higher than which a NGO has due to the nature of their relationship. Empirically, Eesley & Lenox (2006) show that a specific stakeholder’ capacity of influence over a firm only depend on the power and legitimacy of this specific stakeholder in the eyes of the manager of a focal firm. Following resource dependence theory (Pfeffer

and Slancik, 1978), and focus on relationship between firms and stakeholders, Frooman (1999) and other colleagues (O'Connell et al., 2005; S. Sharma & Henriques, 2005) distinguished four main strategies that stakeholders can use to pressure firms: direct and indirect withholding and conditional usage strategies. Resource dependence theory (Pfeffer and Slancik, 1978) claims that organizations are dependent upon various aspects of their environment to supply critical resources. As a consequence, a firm's need for resources provides opportunities for others to gain control over it. Frooman (1999) categorized strategies depending on the types of resource control (withholding and usage) and on the types of influence pathways (direct and indirect). In the first two strategies, a stakeholder has some extent of power based on the resource relationship and therefore, the stakeholder can require that the firm modify some environmental behavior. The difference comes from the extent of power a stakeholder has over the firm. He defines withholding strategies "as those where stakeholder discontinues providing a resource to a firm with the intention of making the firm change a certain behavior". Put simply, in this strategy a stakeholder has power to allocate or not resources to a firm, therefore, it can really influence a firm to modify its behavior. In the second strategy, usage strategies, the stakeholder keeps providing a resource to the firm but with strings attached or under specific conditions. For instance, a stakeholder may or may not provide supplies of resources to a firm whether the latter does not fulfill some specifications imposed by the stakeholder.

The other strategies are based on the types of influence pathways (direct and indirect). In this context, a stakeholder does not have a resource exchange with a firm; however, it may pressure directly or indirectly to influence a firm. On one hand, direct strategies are defined "as those in which the stakeholder itself manipulates the flow of resources to the firm". For example, researchers have analyzed how boycotts (Garret, 1987; Pruitt, Wei and White, 1988), civil suits, protests, and letter-writing campaigns (Smith and Cooper-Martin, 1997) may affect firm environmental behavior. On the other hand, stakeholders can pressure firms to modify their environmental behavior through indirect strategies. Stakeholders can look for allies who has a resource relationship with the focal firm (Frooman, 1999; Rowley, 1997), developing coalitions and networks that enable them increase their bargain power and legitimacy versus a focal firm (Kochan and Rubenstein, 2000; Neville and Menguc, 2006; S. G. Scott and Lane, 2000), and through the capacity of the stakeholder to disseminate firms' environmental information to society (Savage, Nix, Whitehead and Blair, 1991). In this context, stakeholders expect that these reports or availability information may influence others to pressure directly the firm through the use of other types of strategies. In any way, in the last type of indirect strategy – disseminate firms' environmental information- there is no coercive pressure from the stakeholder to the focal firm but it is based on social pressure, how a manager reacts to the new available information.

Therefore, researchers (Frooman, 1999; Rowley, 1997) claim that those stakeholders who are not considered primary (Clarkson, 1995; Freeman, 1984) or salient by managers (Mitchell et al., 1997) may be able to influence the firm only indirectly. As it is noted, manager's perception is a key factor in order to determine a stakeholder saliency and underlying indirect strategies are based on how social pressure affects the manager environmental decisions, and therefore the firm environmental approach. Therefore, how exposed a manager may feel to indirect pressure strategy may modify his/her behavior.

Based on the above discussion, the study tests the following hypotheses.

Hypothesis 1a: The fact that the manager's behavior may be directly exposed would increase the probability of enhancing his/her environmental behavior.

Hypothesis 1b: The fact that the manager's behavior may be indirectly exposed would increase the probability of enhancing his/her environmental behavior.

3. METHODOLOGY: EXPERIMENT DESIGN AND PROCEDURE

Experiment design and procedure

In this work, we design a dictator game experiment to analyze how individuals may modify their decisions depending on the different social incentives. This individual's decisions are economic ones but they imply environmental consequences.

Experimental methods are a useful tool for analyzing those situations involving strategic uncertainty. The latter means that subjects (players) perform their best strategies given their assumptions about how their rivals will behave. Rational theory imposes that players would play under the selfish assumption (payoff maximization), this is the idea of the Nash Equilibrium. The ultimatum game is the simplest bargaining situation: given any initial pie P , player 1 makes a proposal to player 2: (x_1, x_2) ; if he accepts both players get the proposal (x_1, x_2) if not, both players get nothing $(0, 0)$. For any $x_2 \geq 0$ player 2 always accepts the offer. Then the Nash equilibrium predicts that player 1 will make an offer $(x_1 \leq P, x_2 \geq 0)$. The dictator game is identical to the ultimatum with the difference that player 2 is powerless, in the sense that he must accept any offer. Given player 2's powerlessness, the prediction is that player 1 always would make the most disadvantageous offer for player 2. However, literature on the dictator Game has shown that dictators usually donate around 20-30% of the endowment (see, for instance, Eckel & Grossman 1998; Gurven 2004), this behavior has been interpreted as altruism.

Participants

The experiment was run with 113 subjects at the University of Granada (Spain) in two sessions in the same day. Participants were undergraduates, specifically final year students (fourth year), of Bachelor of Business Studies who took part in the study as part of a normal class session of the module Strategic Management. We chose this sample as they are likely to become managers in the future and they have already a good expertise on this field. Finally, treatment 1 consists by 39 observations and, both the second and the third treatments consist of 37 observations.

In order to focus on those individuals who have no commitment to environment, the population, and for each treatment, is divided into two groups, depending on the amount of the donations made. Cumulative distributions are used to explore donations which describes the probability that a variable x takes on a value less than or equal to a number x . The first group (1) consisted of the 50% of participants who make higher donations in overall, that is, we assume that they will have a higher motivation related to environment. This group was called 'the most environmentalists'. The second group (2) consisted of all those participants who gave less

money so that we assume that they had a minor environmental motivation – this group was called ‘the least environmentalists’.

This division was made following our research objectives; we were not interested in ‘the most environmentalists’ group, since they are likely to act correctly both with and without any indirect strategy based on social pressure. Therefore, our sample is finally 19 subjects for each treatment. We focus on the ‘the least environmentalists’ group for three reasons. Firstly, the participants thought that money would go to the NGO, since there was a big amount of donations, and the donation was legitimate (*bona fide*). In fact, 38 percent of the subjects gave €10 in the baseline treatment. If compare this figure to others dictator games where information is supplied about recipients the result is solid. For example, in Burnham (2003) only 25 percent of the subjects gave half the endowment in a dictator experiment. Surprisingly in Eckel and Grossman’s paper (1996) only 10 percent gave all to the Red Cross which was the recipient. In contrast, 70 percent of the participants gave the whole endowment when they were informed that the money was going to poor people in Africa (Brañas-Garza, 2006). Secondly, public exposure is unlikely to alter the amount of money that for the most environmentalists group donate– they would donate generously, without considering whether or not there is public exposure. The last reason responds to the outcome from empirical studies which test Agle’s et al. model. In these studies is claimed that the three elements of the model – power, legitimacy and urgency – are quite important but managers’ own values play a crucial role determining a stakeholder’s saliency. Moreover, researchers (Cordano and Frieze, 2000; Sharma, 2000) have indicated that managerial values, attitudes, and interpretation in the decision making regarding corporate environmental commitment. As a consequence, a manager who has environmental values may not need to receive any pressure over his/her decisions about the natural environment.

Instructions

Subjects discovered a set of written instructions for the experiment on their desks. Instructions were also aloud in order to check that all the individuals fully understood their tasks and guarantees that rules are common knowledge. However, the section of instructions related to each different treatment is remaining unknown until the end of the experiment. The instructions showed society’s rising concern about conservation of Amazon, which is translated in the foundation of associations devoted to selling of plots of land in the area. These associations’ goal is to protect the Amazon from land speculation with the certainty that the money will get to the right destination. The participants are granted an amount of ten one Euro coins so that they can divide it between themselves and the correspondent organization, in this case the proposed organization is the American environmental NGO Amazonia-Rainforest Heroes which has been working to protect rainforests since 1985. Finally, it is noteworthy that the instructions had an ample framing, since it was in the instructions where individuals learnt that each euro donated to this organization would save four trees; thus, if they donated 10 Euros they would save 40 trees. Therefore, we assume that if an individual does not make any donation to the NGO means they do not care about environment at all.

Measures

Three treatments are developed in order to test the effectiveness of our two hypotheses. In treatment 1, labeled *baseline*, is used to make comparisons. In this treatment donations remain confidential; put it simply,

individuals are reminded that no one will know the amount donated under no circumstances. It is important to highlight that there is no social pressure of any kind in this treatment. Secondly, in treatment 2, labeled *managers' indirect exposure*, managers' and firms' names will appear in a list indicating their level of donations which were enlisted from the highest to the lowest donated amount next to the full name of each of the individuals. The list is posted up on the door of the room where the experiment was held for a whole week. In addition, in this treatment individuals are reminded that if anyone destroyed the list, this would be automatically replaced until the period of time had elapsed. In this treatment there is social pressure, since everyone could know the amount each of the individuals has donated. Those having made the lowest donations would be posted on top of the list. In this treatment, social pressure on the individual would be indirect. Consequently, one could consider that social pressure would not be applied to the very individuals (the CEOs in our case), but to the company. Finally, in treatment 3, labeled *managers' direct exposure* is when managers have to tell publicly to society or other stakeholders about firm environmental outcome (e.g. board of directors), individuals are told to publicly announce their donations in front of the class once the experiment was over. In this last treatment social pressure appears to a considerable extent, since individuals must show up in front of all their classmates and tell what their donation was. In this treatment, there are a precise moment when individuals have to announce their decisions in front of the rest of participants. In this case, social pressure would be applied to the very individual, and not to the company, since it is the individual the one to provide the environmental information of the company, which will affect their actuation environment, either in their social club or in their neighborhood.

Overall, three comparisons were made to formulate our speculations. Firstly, total donations made by the baseline group were compared with the managers' direct exposure group: Comparison 1: Baseline vs. Public. Secondly, total donations made by the baseline group were compared with those made by the list group: Comparison 2: Baseline vs. List. Finally, total donations made by the public group were compared with those made by the list group: Comparison 3: Public vs. List.

4. RESULTS

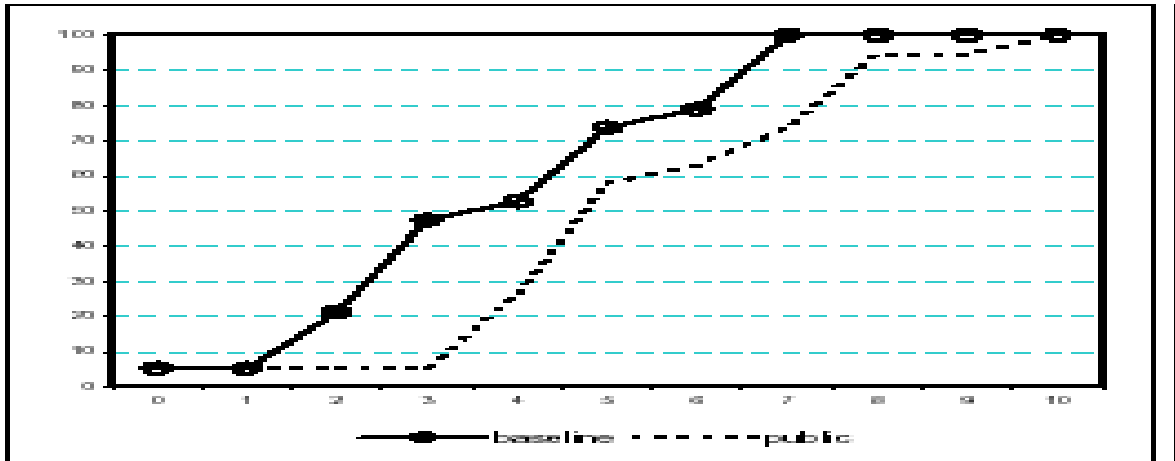
In our experiment students donated in overall 821 Euros - total amount provided to students was 1,130 Euros (10 Euros per student) - and kept 309 Euros for themselves. Subjects earned, on average, 2.73€ in our experiment. No show up fee was given. Therefore, our results show that a very credible experimental mechanism has been implemented as it is shown in table 3. This explains why people have donated on average a significant amount of money in baseline treatment. According to Frohlich et al. (2001), the lack of generosity is due to the fact that subjects do not believe the veracity of the experiment. Put quite simply, subjects have reasonable doubts as to who will receive the money and whether the recipient does, in fact, exist. Nevertheless, in our case, subjects trusted that the money given was to the right place. As for the least environmentalists group in all three cases, we can prove that in baseline treatment individuals make smaller donations, since they are more egoistic. In table 1, we can observe the donations made by the least environmental group in three treatments.

Table 1: Donations made by the least environmental group

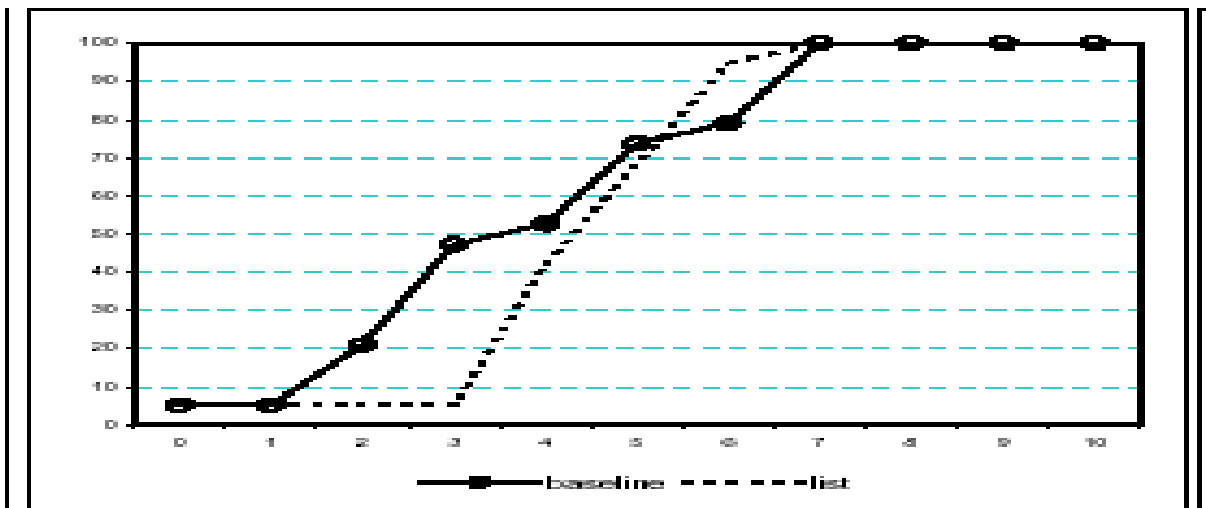
Amount of Money (€) given	Baseline number of subjects	Baseline cumulative	Baseline cumulative %	Public number of subjects	Public cumulative	Public cumulative %	List number subjects	List cumulative	List cumulative %
0	1	1	0,0526	0	0	0	0	0	0
1	0	1	0,0526	0	0	0	0	0	0
2	3	4	0,2105	1	1	0,0526	1	1	0,0526
3	5	9	0,4736	0	1	0,0526	0	1	0,0526
4	1	10	0,5263	4	5	0,2631	7	8	0,4210
5	4	14	0,7368	6	11	0,5789	5	13	0,6842
6	1	15	0,7894	1	12	0,6315	5	18	0,9473
7	4	19	1	2	14	0,7368	1	19	1
8	0	0	1	4	18	0,9473	0	19	1
9	0	0	1	0	18	0,9473	0	19	1
10	0	0	1	1	19	1	0	19	1

Hypothesis 1a, which predicts that the manager may increase the likelihood of change his/her environmental behavior whether it is directly exposed is supported. It can be observed that the ‘public’ mechanism is the most powerful and effective when it is compared to the baseline group within the least environmentalist group (see figure 1 - the X axis the total amount of money given by the individuals from 0 to 10 Euros). In fact, the public treatment stochastically dominates both the baseline and the list device as it can be seen in figure 1. Stochastic dominance implies that the gain for the individual with public mechanism is bigger than the gains obtained for the same individual with the baseline and list mechanisms, given the donations the other individuals have chosen.

Figure 1: Baseline versus public

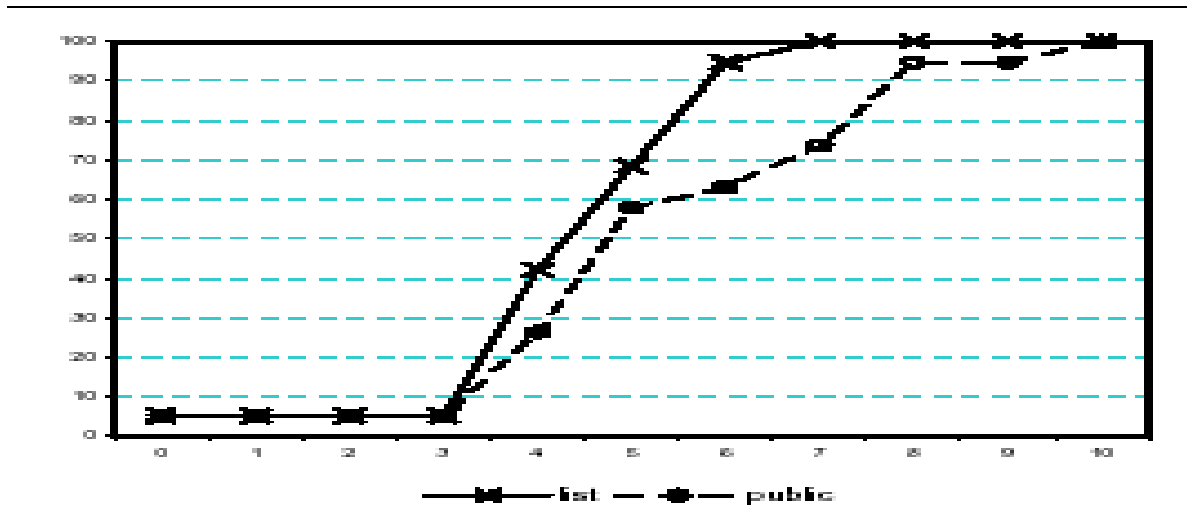


Hypothesis 1b, which predicts that the manager may increase the likelihood of change his/her environmental behavior whether it is indirectly exposed is also supported. The list treatment is also useful, although it does not have the same effectiveness level than the former mechanism as the list treatment does not stochastically dominates the public device. Despite this, we defend the list treatment is also useful because for the smallest levels of donations the individuals can make (from 0 to 3, both included), it coincides with the public treatment (see figure 1). Up to 3 units of donations, public and list treatments overlap themselves, which means that individuals are willing to donate the same amount under both device. Nonetheless, for upper levels of donations, public treatment clearly dominates stochastically the list device, meaning that the individuals obtain a gain with the public treatment bigger than the gain obtained under list treatment.



Finally, we aimed to know which treatment (public or list) was the most effective. In doing so, we compared the results from both treatments (see figure 3). In this comparison, public treatment stochastically dominates the list device.

Figure 3: List versus public



To sum up, we have shown that mechanisms work to encourage and modify the environmental behavior of the least environmental managers; it modifies the individuals' behavior with no need of coercive methods, but by social pressure. So, it is noteworthy that 'list' and 'public' social pressure mechanisms are effective when eliminating unwanted behaviors. Public treatment is highly effective, whereas list treatment seems to have a weak, short-lasting effect. In any case, any mechanism is useful to avoid non cooperation. Therefore, social pressure can be used as a tool for modifying individuals' decisions regarding environment.

5. DISCUSSION AND CONCLUSIONS

This study addresses the question of how managers react to stakeholder's pressures used to influence firms to modify their environmental behavior. We have followed on the resource dependence theory and the relationship between firms and stakeholders, existing four main strategies: withholding, usage, direct and indirect. Specifically, we have focused on indirect strategies of pressure, being our aim to increase the understanding about how managers may react to the use of a type of indirect strategies from stakeholders which are based on social pressure, and which one would have a higher impact.

From a stakeholder literature we contribute as theoretically as empirically. First, our study, we can conclude that indirect strategies based on social pressure can be used as a tool for modifying decisions regarding environment. It has been shown that both mechanisms work to encourage least environmental individuals, especially public treatment is highly effective. Indeed, our experiment suggests that stakeholder influence is higher if a manager is aware that his/her decisions will be known by stakeholders in any of the mechanisms undertaken in this experiment. Underlying stakeholders' indirect pressures it is the fact that stakeholder pressure over managers directly instead of over firms through social pressure. In other words, as managers' perception is the key to determine stakeholder saliency, our study suggests that stakeholder may have to make managers face pressure from the society. Ethicality this statement may be discussed, however this approach may be the only effective to those stakeholders who do not have a resource relationship with a firm, without allies or without a network that allows them to increase their power over the firm. Therefore, secondary stakeholders may increase their pressure over managers instead of over firms. Another contribution to stakeholder literature is based on our empirical approach as it tests how different indirect strategies may affect managers' environmental behavior raise

the available of methods in the stakeholder literature. Previous studies (Agle, Mitchell, and Sonnenfeld, 1999; Gago and Antolin, 2004) about how stakeholder pressure affect to managers has used surveys of managers and case studies. An exemption of this was the work of Eesely and Lenox (2006) where it was measured managers' actions instead of managers' willing. However, few experiments have been used in the stakeholder literature.

In addition, from a government policy point of view, we claim that the increase available information about firms' green behavior may provoke that stakeholders enhance their power and legitimacy of their demands over firms. For instance, governments and other international organizations have developed pollutant inventories of firms in many countries in the last decades as Toxics Release Inventory (TRI) in the United States or European Pollutant Emission Register (EPER). However, publication of this information may not be sufficient to modify manager's environmental behavior as the information does not reach the society at a large. Therefore, it may need to increase the spread of the information to the society. In other words, this mechanism may be not effective whether managers do not feel pressure of the stakeholders. From a managerial point of view, following a as Frooman (1999), it is important to highlight that managers may need to be aware of stakeholders' influence strategies in order to act and plan strategically. Firms may be incentivated to increase their environmental information disseminating so they can gain their benefits through environmental reputation.

Our study suggests that the existence of indirect pressure may affect managers' decisions about the environment. However, two main limitations of this study should be recognized. First, it is the use of students as a proxy to determine managers' environmental decisions. However, experimental literature (Cooper, Kagel, Lo and Gu, 1999; Montmarquette, Rullière, Villeval and Zeiliger, 2004) shows that it is able to recognize 'the similarity between the laboratory context and their field experience, manager-subjects may choose different strategic options than inexperienced subjects. Moreover, it may indicate that if students are more inclined to minimize costs than experts in the laboratory, when one observes the existence of other-regarding preferences in traditional experiments involving student-subjects, one may deduce that this deviation from the equilibrium is likely even more developed in real settings' (Montmarquette et al., 2004: page: 1389). The second limitation is the fact that we focus our attention on certain type of pressure exerted by stakeholders to managers to modify their environmental decisions. We are aware that managers are also influenced by others factors as managers' own values, and diverse strategies of pressure from others stakeholders. In fact, this study only focuses on those managers who are not concerned about the environment. Therefore, our study does not provide a complete picture of the diverse types of pressures a manager could receive. Another limitation is the use of students as a sample due to financial constraints.

As it is noted in stakeholder literature, future studies are needed to increase the understanding which stakeholder influence strategies are the most effective over firms. One study might explore the use of managers to analyze their perceptions about how indirect pressure to modify their environment decisions. Specifically, it could also be extremely interesting to analyze how managers and firms react against and perceived the publication of environmental data from governments like the U.S. Toxics Releases Inventory or the European Pollutant Emission Registers not from the financial point of view as it has already studied in the management literature but from a manager's angle. In our future lines of research, we consider that the role of NGO's and the

mass media in spreading PRTRs data in societies, and test what extent it affects firms' environmental strategy. We also would like to analyze the internal impact and importance that PRTRs cause in firms, NGO's and governments.

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