The Effect of Sanction Target on Managers' Compliance with Regulations

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ABSTRACT

Regulators use sanctions to deter managers of organizations from harmful conduct. Regulatory sanctions sometimes target individual violating managers but sometimes target entire violating organizations. We use an economic experiment to study the effect of targeting individuals versus entire organizations on managers' compliance decisions, comparing also to a condition with no sanctions. In our setting, compliance and non-compliance can take different levels similar to gaps in the 'letter' versus the 'spirit' of the law. Following distributive fairness theory, we predict that managers are less compliant when sanctions target individuals compared with no sanctions. However, compliance levels are restored when sanctions target entire firms. Our results are consistent with the theory that monetary sanctions targeting individuals de-emphasize distributive fairness. When sanctions target firms, however, managers are encouraged to consider fairness and how their decisions impact coworkers.

Key Words: Regulatory Compliance, Regulatory Sanctions, Distributive Fairness

1. Introduction

Sanctioning systems are commonly used to promote compliance with rules and regulations. For example, regulators issue sanctions for offenses such as bribery, insider trading, misreporting financial information, and under-reporting taxes. Past research has examined the effect of both financial sanctions (e.g., fines) and non-financial sanctions (e.g., social disapproval), finding a complicated relationship between sanctions and compliance (Sooy, 2023; Christ, 2013; Dugar, 2010; Masclet et al., 2003; Noussair and Tucker, 2005; Rege and Telle, 2004; Tenbrunsel and Messick, 1999). However, extant research has focused on using sanctions as direct feedback to the decision-maker, rather than the collateral damage that may be suffered by others in the organization. Collateral damage in sanctioning occurs when individuals suffer because of penalties, such as when sanctions target a group or an entire organization even though they have not participated in, or benefited from, the violation.[1] This study investigates whether the quality and frequency of managers' compliance differ when coworkers may be negatively affected by the sanction (i.e., firm targeted sanctions) compared to when coworkers are unaffected (i.e., manager targeted sanctions).

Although it is important to understand the different consequences of targeting firms versus individual managers with sanctions, little evidence exists to inform the issue. Conventional economic theory suggests that managers focus on their own personal welfare when making decisions. However, more recent research in behavioral economics and psychology highlights the need to understand other regarding preferences, and their impact on decision-

[1] Recent examples of sanctions targeting firms include Franklin Templeton Investments (SEC administrative file number 3-19854), and Morgan Stanley (SEC administrative file number 3-15982). Recent examples of sanctions targeting individual managers include M. Tannen (SEC administrative file number 3-19853) and M. Dipp (SEC administrative file number 3-19843). Recent examples of sanctions concurrently targeting both firms and managers include Potomus Trading and E. Pritchett (SEC administrative file number 3-19844).

making (Dana et al. 2006; Gächter and Fehr 1999; Hannan et al. 2006; Mulder et al. 2009; Rege and Telle 2004; White and Gerstein 1987). In our study, we experimentally manipulate the target of the sanction (e.g., entire firms, individual managers, or no sanctions), exploring whether managers differently comply with a regulation when anticipating "collateral damage" to affiliated others, e.g., coworkers.

Our study incorporates important dimensions of a practical regulatory setting. Past research settings in behavioral economics often have individuals make a binary choice of whether or not to cooperate (cf. Gächter and Fehr 1999). However, regulatory compliance decisions are often non-binary and overall welfare depends on the degree to which individuals comply with or violate standards. Further, Scholz (1984) asserts that while legislation may have a simple goal, the world is complex, and it is difficult for regulators to anticipate every eventuality. As a result, compromises are made when rules are enforced. Firms may take advantage of these compromises by doing just enough to placate officials, i.e., following the *letter of the law*, while still falling short of the rules' intended ideals, i.e., the *spirit of the law* (McBarnet 2017). In the present study, we measure the extent to which different sanctioning regimes can affect both compliance *quality* (i.e., the degree that manager complies with the regulation) and compliance *frequency* (i.e., the rate that managers' compliance meets a minimally acceptable level to avoid sanctions). To achieve this, our setting separates the compliance decision into two stages where the first stage represents a decision to at least minimally comply (or not), and the second stage offers a broader range of options to measure the extent of compliance / noncompliance.

We draw on distributive fairness theory (Deutsch 1975; Cook and Hegtvedt 1983) to form our predictions. Distributive fairness theory suggests that individuals and groups are

motivated to allocate resources to achieve fair outcomes, but the allocation basis can shift among different distribution preferences (equity, equality, or need) due to contextual factors such as existing personal relationships. Moreover, when allocation decisions are made by individuals who stand to gain from the decisions, they look to justify a self-interested distribution (Cook and Hegtvedt 1983). We apply this theory to our setting, predicting that while compliance frequency will not be lower under manager-targeted sanctions relative to no sanctions, compliance quality will be lower. This is because manager targeted sanctions may increase economic motivations to comply, but they also crowd out the motivation for fair distributions, leading some managers to rationalize minimal compliance as acceptable. However, when sanctions target firms (i.e., both managers and coworkers), the potential for sanctions to impact co-workers through collateral damage will motivate managers to maintain positive social relationships (Leventhal et al. 1972; Lerner 1974). In this case, managers will prefer fair and equal distributions, resulting in an increase in compliance frequency and compliance quality.

We test our predictions with an economic experiment. A total of 537 participants took part in a modified dictator game completed in triads. Each triad consists of a manager, a coworker, and an investor. The manager must choose how much of the firm's profit to distribute between themself and the investor. A regulation states that managers should distribute all firm profits to investors. However, managers can instead divert profits to increase their pay, though diverted profits are subject to a transaction cost of 25 percent, lowering overall welfare. Managers who divert more than 20 percent of the firm's profit exceed an enforcement threshold (i.e.,'non-compliant') that triggers a penalty 50% of the time. Our primary independent variable is the *sanction target* (manager-targeted, firm-targeted or no target), which reflects who will face sanctions if the manager is found to be non-compliant.

Consistent with our predictions, we find that compliance quality decreases when sanctions target the manager relative to the no sanction condition, but we do not observe significant differences in compliance frequency. When comparing manager targeted sanctions to firm targeted sanctions, we find that firm targeted sanctions lead both the quality and the frequency of managers' compliance to increase. In supplementary mediation analysis we find evidence in support of our theory. We measure managers' motivation for distributive fairness behind their distribution choices, finding that preferences for the equality aspect of fairness underlie higher compliance quality across all conditions, and that manager targeted sanctions reduce such motivations, but firm targeted sanctions do not. We also find that, compared to manager targeted sanctions, firm targeted sanctions are positively associated with motivations for equality, which in turn positively impacts compliance decisions.

Our study makes several contributions to research and practice. First, we extend an important and growing literature on the use of sanctions and sanctioning systems. Prior literature investigating financial dimensions of sanctions finds that weak sanctioning systems may lead to less cooperation than no sanction systems (Tenbrunsel and Messick 1999; Tayler and Bloomfield 2011). We observe similar results in our study under manager targeted sanctions, but observe no decrease when penalties target the firm instead of individual managers. We further show that both results appear to be linked by shifts in opportunistic behavior driven by changes in distributive fairness preferences triggered under different regimes. This result further contributes to research investigating challenges of motivating compliance under weak sanctions, given that sanctions in many settings are inherently weak (e.g., SEC 'ill-gotten gains' standard). Relatedly, we contribute to the literature by following the approach of Sooy (2023) in broadening the construction of 'sanctions' to include both financial and social dimension. Whereas Sooy (2023)

focuses on the assignment of fault, we study the effect of targeting different actors with sanctions – a dimension that varies in practice.

Second, we extend research on how managers behave in formal control system in which their actions affect those who cannot influence the outcome. Church et al. (2012) finds that managers' honesty in budget reporting decreases when the slack is shared with a co-worker but increases if the co-worker displays a preference for honesty. We show that considerations for the welfare of the coworker can be leveraged to achieve higher compliance, such that managers will treat third parties more fairly if sanctions also target the coworker.

Lastly, we make methodological contributions to compliance and sanctioning research by constructing an experimental setting that incorporates differences between the 'spirit of the law' and 'letter of the law' compliance. We follow Mulder et al. (2006), who emphasized the need to study non-binary choice sets. We show that managers can take advantage of the situation when both full and minimal compliance choices are enforced similarly but impact the collective good differently. Our results suggest that regulators should be aware of such unintended consequences of policies that promote manager targeted sanctions, as well as the benefits and limitations of firm-targeted sanctions.

2. Background and hypothesis development

2.1. Regulations and Sanctions

Prior research on regulations and sanctions across several literatures demonstrates that individuals' compliance decisions appear to be driven by a rich set of economic and non-economic motivations (Pratt and Cullen 2005; Alm and Torgler 2011; Dulleck et al. 2016; Davidson and Stevens 2013; Sooy 2023; Young 2021). On one hand, compliance in many settings is higher than would be predicted by reductive economic cost-benefit calculations as

violations persist even when penalties appear to be economically prohibitive (Evans et al. 2001; Alm and Torgler, 2011; Frey, 1997; Pratt and Cullen, 2005; Sooy, 2023). On the other hand, past research has also observed that introducing weak economic penalties can sometimes *increase* violations. One reason for such results is that the existence of fines suggests to individuals that violations are 'worth it' (Gneezy and Rustichini 2000; Tenbrunsel and Messick 1999). Another reason is that individuals view fines as signs of mistrust and reciprocate in kind (Christ, 2013; Falk and Kosfeld, 2006; Tayler and Bloomfield, 2011). Together, evidence from past research suggests that the effect of sanctions should be understood beyond their economic dimensions.

An example of such research is Davidson and Stevens (2013) who show that a publicly certified commitment to a code of ethics improves compliance. A more recent study by Sooy (2023) observes that individuals appear less sensitive to economic dimensions of penalties when required to admit fault. These recent studies show that sanction regimes must consider how sanctions and penalties interact with social norms. We follow this line of research by investigating variations in sanction *target*, which manipulate the social aspect of compliance decisions.

In addition to the dimensions of the penalty, another gap in existing research is that research studies reduce compliance to a binary comply/violate outcome (Agranov and Buyalskaya, 2021; Coffee 2007; Coletti et al., 2005; Friesen, 2012; Gneezy and Rustichini, 2000; Sefton et al., 2007; Tayler and Bloomfield, 2011; Tenbrunsel and Messick, 1999). However, compliance quality exists on a continuum and the degree of compliance is relevant to managers, policymakers, and the public. For example, managers in budget misreporting studies (Evans et al. 2001) frequently display varying levels of misreporting, even while economic incentives support maximal misreporting. Therefore, it is important to understand by how much people are

willing to comply (i.e., compliance quality) in addition to their decision to comply (i.e., compliance frequency). For instance, regulations and enforcement could be set such that although regulators prefer individuals to comply to the maximum level (i.e., 'spirit of the law'), enforcement often falls short and settle for compliance at a minimally acceptable level (i.e., 'letter of the law') (McBarnet 2017; McBarnet and Whelan 1991).[2] Moreover, 'beyond-minimum compliance' is frequently discussed in ethics literature as a desirable, higher-order objective and thus merits measurement (cf. Norman 2011). We respond to these challenges by incorporating gradients of compliance in our experimental research setting, as discussed below.

2.2. Basic setting

We investigate a setting where managers make resource distribution decisions for themselves and others. Our setting simulates situations in which managers have private information and can abuse their power by consuming excessive perquisites, issuing deceptive forecasts, and overriding internal controls. We follow research related to Evans et al. (2001), who use an economic dictator game in a managerial setting where managers trade off economic incentives to misreport against social concerns including honesty and fairness (cf. Abdel-Rahim and Stevens 2018; Church et al. 2012; Douthit and Stevens 2015).

Three modifications to the traditional economic dictator game enhance the ability to study our research question. First, we introduce a *regulation* that prescribes a distribution threshold on the dictator (individuals acting as managers in the study) that protects the receiver (individuals acting as investors in the study). The regulation states that managers should transfer all firm profits to investors. However, regulators cannot legislate and prosecute this fully

[2] A related concept is the 'check-the-box' mentality in compliance decisions (Trevino 2018).

(consistent with the 'spirit of the law'), leaving actual enforcement to fall short of the intended standard (consistent with the 'letter of the law', see McBarnet 2017).

Second, managers in our study make distribution decisions on continuum between 0 and 100 percent of profits in intervals of 20 percent. Sanctions exist in the form of a probabilistic audit that triggers a sanction in the case of not fulfilling the minimal compliance (80 percent). The expected value of withholding profit exceeds that of minimal compliance, which, in turn, exceeds the expected value of full compliance (e.g. sanctions are economically weak). A self-interested and risk-neutral manager maximizes their economic payoff by choosing maximum non-compliance in all conditions. Risk-averse managers comply more in response to the sanction, but there are no additional economic benefits to distributing more than 80 percent of profits. All distributions levels below full compliance reduces group payment via a 25% tax on diverted funds. Thus, we attribute full compliance (100%) to non-economic motivations.

Our third modification introduces a third individual, acting as a coworker to represent other parties in the firm. Both the manager and the coworker receive the same fixed wage, but the coworker does not receive any diverted profits. Nevertheless, coworkers may be subjected to penalties when sanctions target the *firm* (comprised of the manager and the coworker). Prior studies, notably Church et al. (2012) and Batson et al. (1999), allow affiliated persons (coworker) to participate in the gains from the managers' dishonest / noncompliant behavior. Our setting differs from those studies in that we do not allow coworker to benefit from non-compliance, instead, they become potential targets of collateral damage from non-compliance.[3]

[3] One way to characterize our study relative to prior work is that our study examines how managers may perceive compliance choices that expose coworkers to negative externalities, while prior studies examine how managers may rationalize selfish decisions when others may benefit from the misdeed. In real life, co-workers may experience a loss of reputation associated with the firm, lost bonuses, and other negative consequences suffered by the firm even if they did not benefit directly or indirectly from the manager's violation.

2.2. Motivation for Compliance

To begin, we consider managers' compliance in an environment without enforcement. This environment is similar to a dictator game, with the manager serving as the dictator who unilaterally allocates resources. Conventional economic theory emphasizing economic self-interest suggests that the dictator should allocate all resources to themselves. To the contrary, we examine the factors that affect the degree to which individuals are other-regarding in our setting, using a distributive fairness lens.

Deutsch (1975) views distributive fairness as a system of concepts governing the distribution of resources to achieve well-being at both the individual and group level. Deutsch separates distributive fairness concepts into *values*, *rules*, *implementation*, and *decision-making procedures*. Values refer to the basic guidelines and principles that determine resource distribution preferences, while rules, implementation, and procedures refer to the mechanisms and measures for executing distribution. Although Deutsch (1975) proposes eleven different distributive fairness values, subsequent research has simplified them into three: *equity*, *equality*, and *need* (cf. Cook and Hegtvedt 1983; Porcano 1984). Equity is concerned with the matching of input and output ratios; equality is concerned with the equal distribution of valued resources; and need is concerned with the maximizing of personal utility for certain individuals. Deutsch hypothesized that different values can be optimal for maintaining group cooperation and improving wellness under different circumstances. For instance, equity-based distributions are preferred when the group attempts to optimize total production whereas equality-based distributions are preferred to promote cohesive social relationships.

In the context of our study, when regulations are not enforced, distributive fairness theory predicts that managers may still choose to comply with the regulation to adhere with its values

when such values reflect fairness. Non-compliance is unfair because it imposes a cost on another person and lowers the total welfare of the group. However, the amount distributed to the investor may vary based on the managers' value preferences and the ability to rationalize self-serving behavior. Those who value equality will distribute 100% of the profits to the investor (i.e., full compliance results in equal pay for all parties), while those who value equity may distribute an amount less than 100% but greater than 0%.[4] The reason for the difference is that equity depends on an assessment of input and output ratios; without objective benchmarks, it is up to individuals to determine the relative contributions each person makes to the group. When individuals make a subjective assessment of input relative to output, it can lead to unequal distributions. If managers perceive their contribution to the firm to be higher than that of the investor, they will allocate less than the full amount to the investor and still feel that equity is achieved. In conclusion, distributive fairness theory establishes that the baseline level of compliance will be higher than the economic prediction when regulations are not enforced. This baseline provides the basis for comparison against other sanction regimes.

2.3. The Effect of Sanctions on Compliance

Our hypotheses consider two aspects of compliance: *quality* and *frequency*. Compliance quality is defined as the degree to which the manager complies with (or violates) the regulation. The highest quality exists when managers distribute 100% of the profits to the investor, corresponding with the 'spirit of the law' in our setting. Compliance frequency reflects distributions of profit that are greater than, or equal to the enforced level (i.e. distributions of

[4] The regulation suggests that each person in the simulation should receive equal amounts of pay. We utilize a simplified regulation to clarify theory and analysis. In practice, some regulations are considerably more complex in their construction. Also, we do not anticipate the *need* considerations specified in distributive fairness theory to factor into the allocation decision as we provide no information about how the distributed profits will be used so managers are more likely to focus on equity and equality considerations.

80% or greater). In other words, compliance frequency measures the willingness of managers to meet or exceed minimally acceptable level, corresponding to the 'letter of the law'.

We begin by comparing a regulatory regime where sanctions target the decision-making manager to a regime where no sanctions exist. One possible outcome of imposing manager-targeted sanctions is that both compliance quality and compliance frequency will increase. This follows from the possibility that opportunistic managers will violate to the point where penalties offset the benefits of violating. However, following distributive justice theory, other-regarding managers may voluntarily comply with regulations even in the absence of sanctions such as through preferences for equality. To the extent that a significant proportion of managers voluntarily comply with regulations in the absence of sanctions, introducing sanctions may not lead to increases in compliance as this behavior cannot be explained through economic reasons.

Additionally, we argue that an unintended consequence of introducing manager targeted sanctions in the presence of a gap between full compliance and the enforced level of compliance is that manager targeted sanctions make minimal compliance more acceptable.[5] According to distributive justice theory, distributive values govern decision-making, and the choice of values (such as equity or equality) are, in turn, affected by external cues. Other research further shows that equity perceptions are more malleable and subject to self-interested rationalizations (Cook & Hedgtvedt 1983). In our setting, the presence of the sanction introduces an external cue that is inconsistent with the equality values and leads managers to indulge *why* the regulator allows a non-equal distribution. As a result, managers may invoke a self-serving version of equity and allocate more of the profit to themselves. For instance, as managers evaluate the input and output

[5] Note that regulators may create an enforcement gap because it is too costly to enforce the regulation to the full extent. For example, motorists may read signs about penalties for driving faster than 120km/h while the official speed limit is 100km/h. In such situations, a motorist may conclude that the official speed limit is inappropriate based on enforcement evidence and the fact that other motorists drive faster than 100 km/h.

ratios of themselves relative to investors, they may conclude that investors do not supply labor to the firm and therefore are not entitled to all the profits of the firm, and their beliefs are supported by the fact that the regulators do not force 100% distribution.

To summarize, in a no sanctions regime, the 80% distribution choice does not stand out among other choices. However, when a manager targeted sanction is introduced in a setting where an enforcement gap exists between the 'spirit of the law' and the 'letter of the law', managers may gravitate to the 'letter of the law', which provides the veneer of compliance but also enables some self-serving behavior. This will manifest as a greater tendency for a complying manager to select 80% distribution over 100% distribution. Stated formally:

H1a: Compared to no sanctions, manager targeted sanctions lead to lower compliance quality.

Although we expect individuals to rationalize lower compliance quality on the basis of equity, such rationalization may not extend to compliance frequency due to the existent of minimal compliance level. While it is costless to shift from full to minimal compliance, dropping below minimal compliance may trigger sanctions which can be both costly financially as well as signal that the manager is taking more from the investor violates equity norms. In other words, while manager-targeted sanctions may shift how managers understand compliance and what level of compliance is preferable (i.e., quality), it may not shift managers' preference for compliance *itself* (i.e., frequency). Stated formally:

H1b: Compared to no sanctions, manager targeted sanctions do not lead to lower compliance frequency.

2.4. Firm Targeted Sanctions

Next, we consider how compliance can vary when sanctions target firms compared to when sanctions target managers. Firm targeted sanctions are those that impose penalties on both the decision-making manager as well as others in the firm (such as lost bonuses). In our setting, managers and coworkers asymmetrically share in the costs and benefits of the violation such that the coworker can be penalized for the manager's noncompliance, but do they not participate in the gains. From an economic perspective, sanctions targeting the firm should have no incremental effect on the manager's decision, compared to manager targeted sanctions, because adding penalties to others does not change the manager's expected pay. However, consistent with our prior discussion and the assumption that most individuals have other-regarding preferences, we argue that managers will protect coworkers' welfare to maintain distributive fairness.

We consider the manager's motivations for compliance with respect to both equity and equality. From an equity perspective, when sanctions target the firm, the manager now must think of the input versus output ratios between not only the manager and the investor, but also between the manager and the coworker. Because the coworker has contributed labor to the firm but does not benefit from non-compliance, exposing coworkers to penalties is inconsistent with equity. As a result, we expect firm targeted sanctions to increase compliance frequency. From an equality perspective, a sanction will make the coworker's pay lower than the manager. Distributive fairness theory suggests that equality is conducive to maintaining good social relationships (Deutsch 1975; Cook and Hegtvedt 1983). Specifically, individuals reduce the amount of inequality in pay to promote cohesion and avoid conflicts with coworkers (Leventhal et al. 1972; Lerner 1974).

We argue that, unlike the manager's relationship with the investor which is mostly in-personal (e.g., contractual), the relationship between the manager and the coworker is more personal due to prior interactions and cooperation. Therefore, we predict that the manager is more concerned with maintaining similar pay for themselves and the coworker. In summary, we expect both compliance frequency and quality to be greater under firm targeted sanctions stemming from the motivation to avoid inequitable and unequal outcomes for coworkers. Stated formally:

H2a: Compared to manager targeted sanctions, firm targeted sanctions will lead to higher compliance quality.

H2b: Compared to manager targeted sanctions, firm targeted sanctions will lead to higher compliance frequency.

Finally, we compare the firm targeted sanction with the no sanction regime. Although a primary focus of the study is the unintended consequences of manager targeted sanctions and the possible benefits of using firm targeted sanctions to address these consequences. Our design allows us to shed light on whether firm targeted sanctions can be superior to no sanctions. With respect to compliance frequency, firm targeted sanctions (compared to no sanctions) give managers additional motivation to comply at the minimal level such that co-workers do not suffer unfair losses. Regarding compliance quality, while the introduction of a sanction highlights that a lower quality distribution maybe acceptable by regulators, the fact that sanctions also target coworkers may also highlight the social desirability of equal and equitable distributions, resulting in more managers choosing to comply at the highest level (i.e. distribute 100% of profits). In the presence of these off-setting effects, we instead advance a research question.

RQ: Compared to no sanctions, would firm targeted sanctions lead to higher or lower compliance frequency and quality?

3. Method

3.1. Experimental design and task overview

We investigate our hypotheses in an economic experiment.[6] We employ a modified dictator game conducted in triads. In each triad, we randomly assign individuals to three different roles. To avoid inducing unintended power perceptions related to information-rich labels, we use the labels Role A, Role B, and Role C to describe the manager, coworker, and investor, respectively. Instructions explain that the manager and coworker work for a firm that generates a profit of €75,000 in experimental currency. Managers decide how much of the firm's profit to distribute to the investor. Regulations require the firm to distribute 100 percent of the profits because the investor owns the firm. However, managers have the power to assign less than the full amount, keeping a portion of the difference as perquisites, which we operationalize as extra pay for the manager. A welfare loss is triggered if the manager chooses to distribute less than 100 percent of the profits, leaving the manager with only 75 percent of the diverted profit (a manager who diverts all €75,000 of profit would receive only €56,250 of additional pay).[7]

Managers make sequential choices regarding profit distribution. First, they choose whether to comply with the regulations by selecting compliance as either greater or equal to 80 percent, or less than 80 percent. After a delay, they pick the exact distribution amount among the

[6] Experiments have several noteworthy advantages when investigating enforcement policy issues. Most importantly, our setting enables the tight control of enforcement. In external settings, enforcement rates and violation rates are unobservable, and are instead jointly reflected in incarceration rates despite each varying separately. We are able to directly observe violation rates in our design. Additionally, we can hold constant all factors other than the variable of interest – the target of sanctions. Outside of the laboratory, control can be problematic, particularly given that policy changes are frequently confounded with larger social and regime differences.

[7] This loss represents processing costs incurred by individuals who engage in illegal activity, such as payments to unscrupulous accountants, lawyers, and banks for facilitating such transactions. From a design standpoint, it also makes it clear that the manager must be willing to violate fairness principles by reducing overall welfare.

selection constrained by their first choice. By separating these choices into stages, we disentangle the possible consequences of sanction target on managers' choices to comply (compliance frequency) and by how much (compliance quality), the two dependent variables of interest in the study. When sanctions exist, all managers face a 50 percent chance of being audited, which triggers a €30,000 financial penalty if the manager chooses not to comply, irrespective of what level of non-compliance was selected.[8] Penalties lower the payoffs of targeted participants without increasing others' pay (the pay is removed from the payoff pool).

The experiment uses a three cell (*Sanction Target:* None, Manager-Targeted, or Firm-Targeted) between-participants design, manipulating which participant(s) must pay the €30,000 penalty in the event of sanctions. In the no sanctions condition, the distribution rule is unenforced; no audit is conducted, and no participants pay a penalty. In the manager-targeted sanctions condition, the manager alone pays the penalty. In the case of firm-targeted sanctions, both the manager and the coworker pay the penalty in equal amounts. This has the effect of doubling the total welfare loss triggered by penalties but holds constant the penalty that decision-making managers face. We do this to avoid confounding *Firm-Targeted* sanctions with a reduction of penalties to the manager.[9] In all conditions, managers can make up to €56,250 additional pay by violating the regulation (corresponding to diverting €75,000 of profit).

[8] Our design holds constant a number of potential explanations, including enforcement levels and type I and type II enforcement error (Agranov and Buyalskayaa 2022). That is, risk of detection and magnitude of penalty are no greater for compliant managers who minimally comply than for compliant managers who fully comply; and the risk and magnitude of penalties is also no greater for non-compliant managers who distribute 0 percent of profits than for non-compliant managers who distribute 60 percent of profits. In economic terms, managers' payoffs are strictly decreasing in profit distributed, conditional on their choice to comply. However, managers may nevertheless select other distribution levels for non-economic reasons.

[9] We hold sanction magnitude constant between conditions to isolate the effect of interest. In our study, coworkers targeted by firm sanctions do not subsidize the penalty by splitting the associated fine. Instead, both coworkers equally bear the same fine. We recognize that sanctions targeting firms outside of the lab may be considerably larger than those targeting individuals, and the number of employees impacted by sanctions may be considerably larger as well. The impact of group size dilution on social welfare decisions is explored in Isaac et al. (1994). Additionally, penalty magnitudes sometimes vary for other reasons. The impact of variations in sanction magnitude have been investigated extensively; for instance, see Sooy (2023) and Tenbrunsel & Messick (1999).

Penalties in our study (€30,000), when present, are less than the potential economic gains of violating the regulation regardless of the audit and are thus *weak* by design. This corresponds with suggestions that many regulatory penalties enforced in practice are also weak. For example, SEC penalties typically follow an 'ill-gotten gains' standard, requiring violators to disgorge any improper benefits without regard to the damages caused and/or any additional punitive penalties (cf. Godoy 2023).[10] All potential payoffs for each role by every experimental condition are listed in Appendix A. If the manager allocates 100 percent of the profits, all three individuals receive equal amounts of money. The expected economic value of payoffs increases for the manager as the percentage of distribution decreases, within whichever compliance category they select (compliant or non-compliant). However, distributing less than 100 percent of the profits always reduces total pay across the three roles.

3.2. Experimental procedures

Figure 1 visually illustrates the sequence of the experimental procedures. Before the study, all participants complete a screener survey used to collect demographic and other data, including a risk attitude scale taken from Dohman et al. (2011).[11] During the in-lab session, participants receive instructions about the essential details about the study. Participants do not find out their assigned role until they have reviewed the material for all three roles and correctly answer comprehension check questions. Instructions and comprehension check questions are conducted using a Qualtrics survey.

[Insert Figure 1 here]

[10] Additionally, regulators are particularly interested in motivating compliance in situations where violations are economically cost-rational in the sense that the risk-weighted expected financial penalty does not fully offset the expected benefits of violating.

[11] We collect risk preference information as a potential covariate to analyze participants who choose not to comply. In untabulated analysis, we observe that risk preference is not a significant predictor nor is it non-randomly distributed among conditions. We exclude it from further analysis.

After completing instructions, participants proceed to the experimental task, hosted on Ztree (Fischbacher 2007). The experimental task consists of two stages that each culminate in a managerial decision—managers' choice of whether to comply and how much profits to distribute. Prior to making each profit distribution choice, the manager and the coworker (but not the investor) work together on a slogan-guessing task from Kelly and Presslee (2017) for which they ostensibly receive fixed wages of €37,500 each. We use the slogan-guessing task to facilitate the creation of a social relationship through cooperative work and to foster the sense among coworkers that compensation was earned.[12] In the task, managers and coworkers generate a team name and then work together to generate the names of corporate brands from 25 slogans. We explain to the participants that firms are ranked at the study's conclusion based on the total number of slogans they could correctly identify. To reduce a potential source of variation in in-group identity, we withhold performance information until the session concludes. Investors are permitted to also work separately on the task but are informed that their responses will not be scored. All three conditions complete the same exercise.

After completing the slogan-guessing task, managers choose if they wish to comply or not (i.e., our measure of compliance frequency), and then choose how much profit to distribute within compliance or non-compliance (i.e., our measure of compliance quality). To ensure that participants understand the full payoff consequences for each choice, we also provide paper versions of the payoff tables so that participants can trace their decisions to outcomes. The payoff tables present the same information as in Figure 1. While the managers make their decisions, investors and coworkers make a similar but hypothetical compliance choice, where

[12] Considering that participants in our study only communicate anonymously through the computer network, the team-building exercise was necessary to raise group identity to an acceptable level and consistent with the concept of working inside a firm. We find that average team identity is 3.92 out of 7 among all managers. We do not observe statistically different identity levels among different conditions.

they are asked to guess what the managers would do. To control for information about how the manager might act and rule out reciprocity effects, our game includes only one period. A sample decision interface is shown in Appendix B.

After participants make their respective decisions, they return to Qualtrics to complete an exit survey containing questions about group identity, the motivations behind the distribution choice, and whether they perceive the potential penalties as fair and just. We use a mixture of Likert scale questions and open-ended narrative response questions to understand participants' actions better. Feedback regarding the outcome of the profit distribution decision is displayed after the exit survey is complete to avoid contaminating the coworkers' and investors' responses with knowledge of the manager's decision. At the end of the study, firm rankings for the slogan-guessing task are displayed, and participants receive Canadian Dollars at an exchange rate of €15,000 to $1.

3.3. Independent and Dependent variables

Our independent variable is *Sanction Target*, which is separated into *Manager Target*, which takes the value of 1 when the sanction targets the manager and 0 for other conditions, and *Firm Target*, which takes the value of 1 when the sanction targets both managers and coworkers. *No Sanction* is our control condition where there are no potential penalties for noncompliance. Our two dependent variables are *Compliance Quality* and *Compliance Frequency*. *Compliance Quality* is an interval variable with six levels (00, 20, 40, 60, 80, or 100) reflecting the percentage of profits distributed by the manager, and thus also embeds the quality with which managers choose (or not) to comply. *Compliance Frequency* is a categorical variable reflecting whether the manager chooses to comply at any level, taking the value of 1 for managers who comply (distribute 80 percent or 100 percent of the profits to their investor), or 0 otherwise.

3.4. Process Variable

We construct a measure of participants' distributive fairness concerns with four related exit survey questions (7-point Likert, Strongly Agree to Strongly Disagree): *'I was concerned with maximizing my own pay'*, *'I was concerned with maximizing Role B's pay'*, *'I was concerned with maximizing Role C's pay'*, and *'I was concerned with maximizing the total pay of all members of the firm'*. These questions illuminate the degree to which each of the three parties individually and jointly weighs on the manager's decision-making, rather than measuring the positive or negative consideration *per se* (i.e. giving or taking). We take the simple average of participant's responses to these four questions (*'Aggregate Fairness'*), which is increasing in the degree to which they weight their own and others' welfare in their decision-making.[13] In terms of equity versus equality, *Aggregate Fairness* reflects a motivation for equal distribution more than an equitable distribution.

4. Analysis of results

4.1. Participants

We recruited 537 participants from a participant pool affiliated with the business school at a large public Canadian university.[14] Participants receive research credit for their participation and receive compensation based on experiment choices, described below. On average, participants receive $4.75 of additional compensation (managers receive, on average, $6.00). Participants average 18.88 years of age, and 51 percent report their gender as male (for managers, 18.83 years of age, 50 percent male).

[13] We use the simple average for expositional simplicity. In untabulated analysis, we confirm that results also hold in unrotated factor analysis, extracting a single factor from participants' responses to the four questions and repeating analyses using the extracted factor as the mediating variable.

[14] We removed 34 participants (9 managers) for repeatedly failing attention and/or knowledge retention check questions in the exit survey.

Manipulation Check

We first confirm the successful manipulation of our primary independent variables. To confirm the manipulation of *Sanction Target* we compare Role A (the manager) responses to an exit survey question prompting participants for their agreement with the statement 'Choosing to allocate less than 80% is choosing to harm Role B' (7pt Likert). Role B (the coworker) is potentially exposed to enforcement penalties under firm-targeted sanctions, but not under other regimes. Consistent with this, we observe differences between Role A responses comparing other conditions to firm-targeted sanctions (no sanction vs. firm-targeted: t-statistic=5.91, $p<0.01$; manager-targeted vs. firm-targeted: t-statistic=5.41, $p<0.01$), but do not observe differences between conditions that do not expose Role B to enforcement penalties (no sanction vs. manager-targeted: t-statistic=0.82, $p=0.21$). We conclude that *Sanction Target* was successfully manipulated. We also compare Role A responses to an exit survey question prompting participants for their agreement with the statement 'The magnitude of the penalty for violating is high' (7pt Likert). Role A faces no possibility of enforcement in the *No Sanction* condition but faces penalties in other conditions. Consistent with this, we observe differences between Role A responses comparing other conditions to no-sanction condition (no sanction vs. firm-targeted: t-statistic=2.21, $p=0.02$; no sanction vs. manager-targeted: t-statistic=1.73, $p=0.05$), but do not observe differences between conditions with sanctions (firm-targeted vs. manager-targeted: t-statistic=0.71, $p=0.24$).

4.2. Descriptive statistics

Table 1 presents descriptive statistics for *Compliance Quality* (i.e., the percentage of overall profit distribution by the manager) and *Compliance Frequency* (i.e., the percentage of managers who elect to comply with the regulation), by experimental condition. Panel A displays

the decisions made by the managers, whose decisions are the focus of this study. We disclose the hypothetical decisions by Role B and C for completeness in Panels B and C respectively. *Compliance Quality* is 62 percent when sanctions target the manager, 80 percent when sanctions target the firm and 74 percent when there are no sanctions. *Compliance Frequency* is 65 percent when sanctions target the manager, 90 percent when sanctions target the firm and 63 percent when there are no sanctions. The fact that compliance quality and frequency are significantly higher than 0 in the no sanctions condition suggests managers have other-regarding preferences, such as fairness. Figure 2 displays the statistics from Table 1 in graphs, facilitating a comparison among conditions.

[Insert Table 1 here]

[Insert Figure 2 here]

4.3. Hypotheses and Research Question testing

H1a predicts that manager-targeted sanctions will lead to lower *Compliance Quality* compared to when there are no sanctions.[15] Using the data from the manager targeted and the no sanction conditions, we test H1a using an ordinary least squares regression with *Compliance Quality* as the dependent variable and *Manager Target* as the independent variable. Consistent with our prediction, *Manager Target* predicts a lower level of *Compliance Quality* (coefficient = -0.12, t-statistic=-1.71, one-tailed p=0.05, Table 2, Panel A). H1b predicts that manager-targeted sanctions will not lead to lower *Compliance Frequency* compared to no sanctions. We test H1b using a logistical regression with *Compliance Frequency* as the dependent variable and *Manager Target* as the independent variable. Consistent with our prediction, we find that *Manager Target*

[15] As our hypotheses consider only two conditions at a time, we do not perform omnibus ANOVA comparing the *No Sanction, Manager Sanction* and *Firm Sanction* conditions.

does not predict a lower level of *Compliance Frequency* (odds ratio=1.07, z-score=0.19, p=0.85, Table 2, Panel A).

H2a predicts that firm-targeted sanctions will lead to higher *Compliance Quality* compared to manager-targeted sanctions. Using data from the manager targeted and the firm targeted conditions, we test H2a using an ordinary least squares regression with *Compliance Quality* as the dependent variable and *Firm Target* as the independent variable. Consistent with our prediction, *Firm Target* positively predicts a higher level of *Compliance Quality* (coefficient=0.17, t-statistic=2.68, p<0.01, Table 2, Panel B). H2b predicts that firm-targeted sanctions will lead to higher *Compliance Frequency* compared to manager-targeted sanctions. We test H2b using a logistical regression with *Compliance Frequency* as the dependent variable and *Firm Target* as the independent variable. Consistent with our prediction, we find that *Firm Target* predicts a lower level of *Compliance Frequency* (odds ratio=5.03, z-score=3.01, p<0.01, Table 2, Panel B). The combined results of H1 and H2 suggests that introducing a manager targeted sanction to those managers already motivated to comply can have counterproductive results, such as signaling the acceptability of lower compliance options, and leading to less profits distributed to the investor. However, if the sanction target is the firm instead, the negative effect of sanctions is mitigated.

The RQ examines whether firm-targeted sanctions can be superior to no sanctions. We examine this research question using both *Compliance Quality* and *Compliance Frequency* as dependent variables. The arguments presented in the prior sections suggest that, compared with no sanctions, firm-targeted sanctions could lead to an increase or a decrease in *Compliance Quality* depending on the negative effect of the *Manager Sanction* but the positive effect of the Firm Sanction on compliance. Our results are reflective of these mixed theoretical arguments as

we show that *Firm Target* has no net effect on *Compliance Quality* (coefficient=0.06, t-statistic=0.97, p=0.33, Table 2, Panel C). In addition, we find that *Firm Target* positively predicts a higher level of *Compliance Frequency* (odds ratio=5.41, z-score=3.08, p<0.01, Table 2, Panel C). Combined, these results suggest that managers have strong motivation to avoid punishing co-workers by complying at the minimum level. However, an increase in compliance frequency but not quality implies that the motivation to comply to the spirit of the law is crowded out by the presence of sanctions.

[Insert Table 2 here]

4.4. Mediation Test using Equality Motivations

We anticipate that motivations of equality (*Aggregate Fairness*) will mediate the relationships between *Sanction Target* and *Compliance Quality*. To understand these relationships, we conduct a mediation analysis using the PROCESS macro where *Sanction Target* is the independent variable, *Aggregate Fairnes*s is the mediating variable and *Compliance Quality* is the dependent variable (Hayes 2022; Jollineau and Bowen 2023). The results of our mediation analysis are shown in Table 3, Panel A (H1a) and Panel B (H2a). In H1a, we expect that when sanctions target the manager, motivation of equality will be lower compared to when no sanctions exist, resulting in lower compliance quality. We find that *Manager Target* has a significantly negative effect on *Aggregate Fairness* (coefficient=-0.54, SE=0.19, p<0.01). *Aggregate Fairness* has a signficantly positive effect on *Compliance Quality* (coefficient=0.18, SE=0.03, p<0.01). *Aggregate Fairness* mediates the relatioship between *Sanction Target* and *Compliance Quality* as the direct effect is not signficant (coefficient=-0.02 SE=0.06, p=0.79) and the indirect effect has a bootstrap 90% confidence interval based on 10,000 samples that does not

contain zero (-0.17 to -0.04). These results support the assertion that equality motivations mediate the causal relationship identified in H1a.

[Insert Table 3 here]

In H2a, we expect that when sanctions target the firm, perceptions of equality will be higher than when sanctions target the manager, leading to higher levels of compliance quality. *Firm Target* has a marginally significant positive effect on *Aggregate Fairness* (coefficient=0.37, SE=0.20, p=0.07). *Aggregate Fairness* has a signficant positive effect on *Compliance Quality* (coefficient=0.15, SE=0.03, p<0.01). *Aggregate Fairness* also partially mediates the relationship between *Firm Target* and *Compliance Quality* as the direct effect remains signficant (coefficient=0.12 SE=0.06, p=0.05), and the indirect effect has a bootstrap 90% confidence interval based on 10,000 samples that does not contain zero (0.01 to 0.11). Therefore, we find support for the assertion that equality motivations mediate the causal relationship identified in H2a.

4.5. Additional Analysis using Non-manager Data

Finally, we explore the possibility that non-manager participants would be able to anticipate managers' reactions to *Sanction Target*. We can perform this analysis because we use real participants to fulfill the coworker (Role B) and investor (Role C) in the study. Non-manager participants receive the same information as the managers. When managers are asked to make their compliance decisions, coworkers and investors are asked to make hypothetical decisions reflecting the choice they believe that they would make if they were making the compliance choice. Thus, if the motivations of the managers are predictable then the non-manager participants' expectations would mirror the results we find for our hypotheses. At a practical

level, this analysis reflects on the ability of those protected by regulations (e.g., the public) to anticipate the effect of sanctions on those governed by regulations (e.g., managers).

Table 4 displays the test of causal relationships using hypothetical distribution decisions made by the pooled sample coworkers and investors.[16] It appears that, when the manager is targeted, coworkers and investors anticipate that *Compliance Quality* will fall (Panel A: coefficient=-0.10, t-statistic=-1.98, p = 0.05). However, they are unable to anticipate that firm-targeted sanctions would have a positive effect on both compliance quality (Panel B: coefficient=0.02, t-statistic=0.44, p=0.66) and compliance frequency (Panel B: Odds Ratio=1.2, z-score=0.64, p=0.52). These the combined results suggest that non-manager participants have a pessimistic expectation of the manager's behavior. Although we acknowledge such participants' answers should not be over-extrapolated, we also look at this as support that our findings are not easy to predict.

[Insert Table 4 here]

5. Discussion

This study investigates the effect of different sanction regimes on managerial compliance. We study the unintended negative consequences introduced by manager targeted sanctions and the ability of firm targeted sanctions to mitigate these consequences by increasing the prevalence of preferences for equity and equality in the setting. Consistent with observations of gaps between the 'letter of the law' and the 'spirit of the law,' we employ a setting that allows managers to comply (or violate) at different levels. Although economic theory suggests that managers should gravitate toward minimal compliance or maximal violation, we observe a complex set of results.

[16] We pool the results for co-workers and investors for simplicity. We ran the same tests for co-worker and investor participants separately and each group's expectations are different from the managers' actions.

We advance several predictions following distributive fairness theory and find supporting experimental evidence. In particular, we find that manager targeted sanctions decrease compliance quality compared to a regime without enforcement. However, when comparing manager targeted sanctions to firm targeted sanctions, compliance quality and frequency increase. Using mediation analysis, we find that managers' preferences for equal distributions is the motivation for compliance, and manager targeted sanctions decrease such motivations.

Our study contributes to existing research and practice. We extend the research on the use of sanction systems in three ways (Tenbrunsel and Messick 1999; Tayler and Bloomfield 2011). First, in our modified dictator game we show that sanction target can cause shifts in fairness preferences corresponding with shifts in compliance. Second, our study explores modifications to sanctioning systems that address issues related to weak sanctions. Specifically, we follow Sooy (2023) in demonstrating the compliance consequences of a social dimension of sanctions, the target of the sanctions. We observe that firm targeted sanctions appear to offset decreases in equality preferences triggered by manager targeted sanctions relative to no sanction conditions, implicitly 'restoring' cooperation. Third, we extend the research in formal control systems that examine managers' decision making when non-decision makers are affected by the outcome (Church et al. 2012). Our study shows that when managers consider the welfare of non-decision makers, it can lead improvements in compliance. Finally, our study makes a methodological contribution as we consider managers compliance decisions that are non-binary (Mulder et al. 2006).

Our study is subject to several limitations that provide opportunities for future research. First, our economic experiment employs a design that increases internal validity in our setting but may abstract away some important variation in firm targeted sanctions. For one, while our

study monetizes the penalties experienced by coworkers, managers in a firm may face non-economic consequences such as damaged reputation. Additionally, firm's shareholders – who are the residual claimants of the firm – may also suffer collateral damage as a consequence of fines (e.g., Wells Fargo and Volkswagen), although the investors' losses may be individually diffused, they may nevertheless amount to significant sums on aggregate. In a similar vein, regulators do not need to impose large penalties to cause losses of reputation - exposures of wrongdoing to the media may be sufficient. Second, although we offer more than two compliance options, our design still restricts managers' choice set to distributing 0, 20, 40, 60, 80, or 100 percent of the profits. We do this to achieve experimental control (for instance, to establish a precise and commonly known minimal compliance level). In real life, managers may not know precisely when they have crossed the threshold, just like motorists do not know exactly when the police will enforce speeding regulations. Although we expect that our logic would hold under uncertainty, additional testing under uncertain conditions would be welcome. Several additional non-financial dimensions of sanctions are frequently employed in practice but remain largely unexplored in research (e.g., censure, deferred enforcement, etc.). We hope that future research will examine the effects of these penalties on managers' distribution choices.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A – PARTICIPANT WORKSHEETS

Panel A: Firm-Targeted Sanctions

Profit Distributed by Manager (of € 75,000)

	Wages	*0% Distributed (No Audit) (A)*	*0% Distributed (Audit) (B)*	*0% Distributed (Expected Value) (0.5*A) + (0.5*B)*	*80% Distributed (C)*	*100% Distributed (D)*
Role A Manager	75,000	131,250	101,250	116,250	86,250	75,000
Role B Coworker	75,000	75,000	45,000	60,000	75,000	75,000
Role C Investor	-	-	-	-	60,000	75,000
Total Welfare				**€ 176,250**	**€ 221,250**	**€ 225,000**

Panel B: Manager-Targeted Sanctions

Profit Distributed by Manager (of € 75,000)

	Wages	*0% Distributed (No Audit) (A)*	*0% Distributed (Audit) (B)*	*0% Distributed (Expected Value) (0.5*A) + (0.5*B)*	*80% Distributed (C)*	*100% Distributed (D)*
Role A Manager	75,000	131,250	101,250	116,250	86,250	75,000
Role B Coworker	75,000	75,000	75,000	75,000	75,000	75,000
Role C Investor	-	-	-	-	60,000	75,000
Total Welfare				**€ 191,250**	**€ 221,250**	**€ 225,000**

Panel C: No Sanctions

Profit Distribution by Manager (of € 75,000)

	Wages	*0% Distributed (No Audit) (A)*	*0% Distributed (Audit) (B)*	*0% Distributed (Expected Value) (0.5*A) + (0.5*B)*	*80% Distributed (C)*	*100% Distributed (D)*
Role A Manager	75,000	131,250	131,250	131,250	86,250	75,000
Role B Coworker	75,000	75,000	75,000	75,000	75,000	75,000
Role C Investor	-	-	-	-	60,000	75,000
Total Welfare				**€ 191,250**	**€ 221,250**	**€ 225,000**

Notes:
Managers provided with six distribution options: 0%, 20%, 40%, 60%, 80%, 100%. Three options displayed for illustration.
Manager's payoff: Wages + 75% of Diverted Profits – Penalty (if jointly violating and audited)

Coworker's payoff: Wages – Penalty (under Firm Sanctions if jointly violating and audited)
Investor's payoff: Profit Distributed (of €75,000)

APPENDIX B: SAMPLE PROFIT DISTRIBUTION SCREENSHOT

Role A (Decision-Making Coworker) – Firm Target Condition

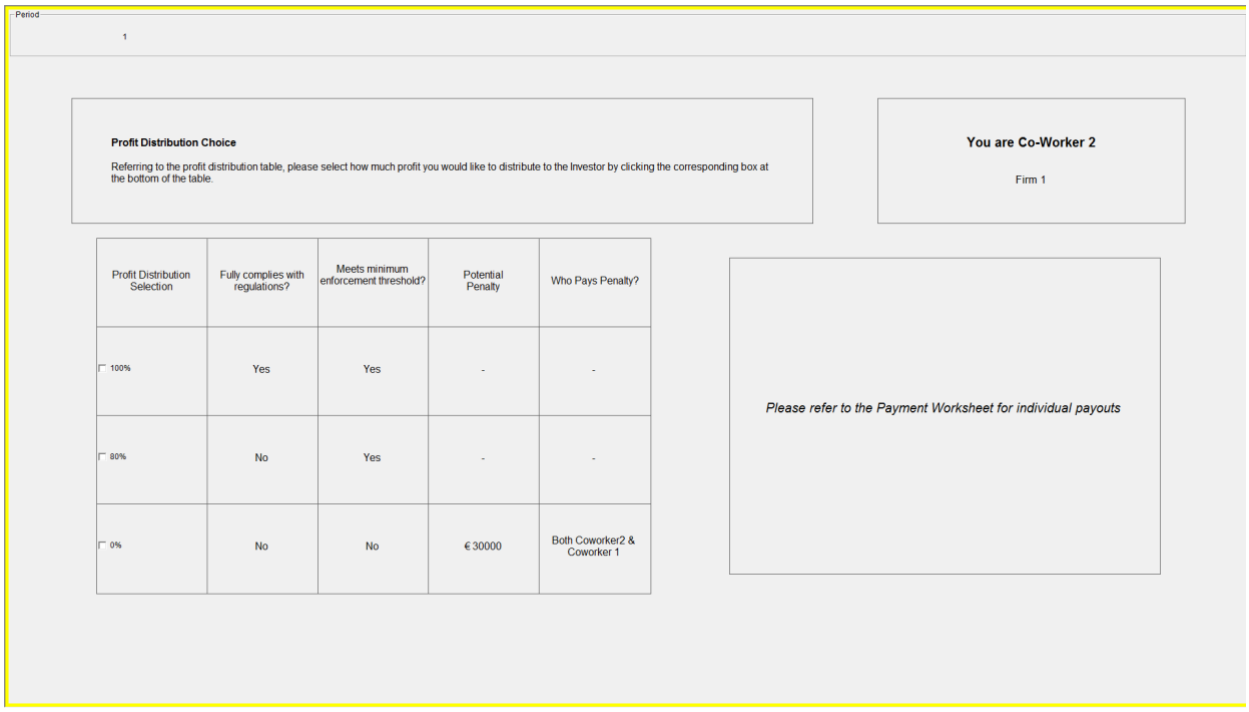
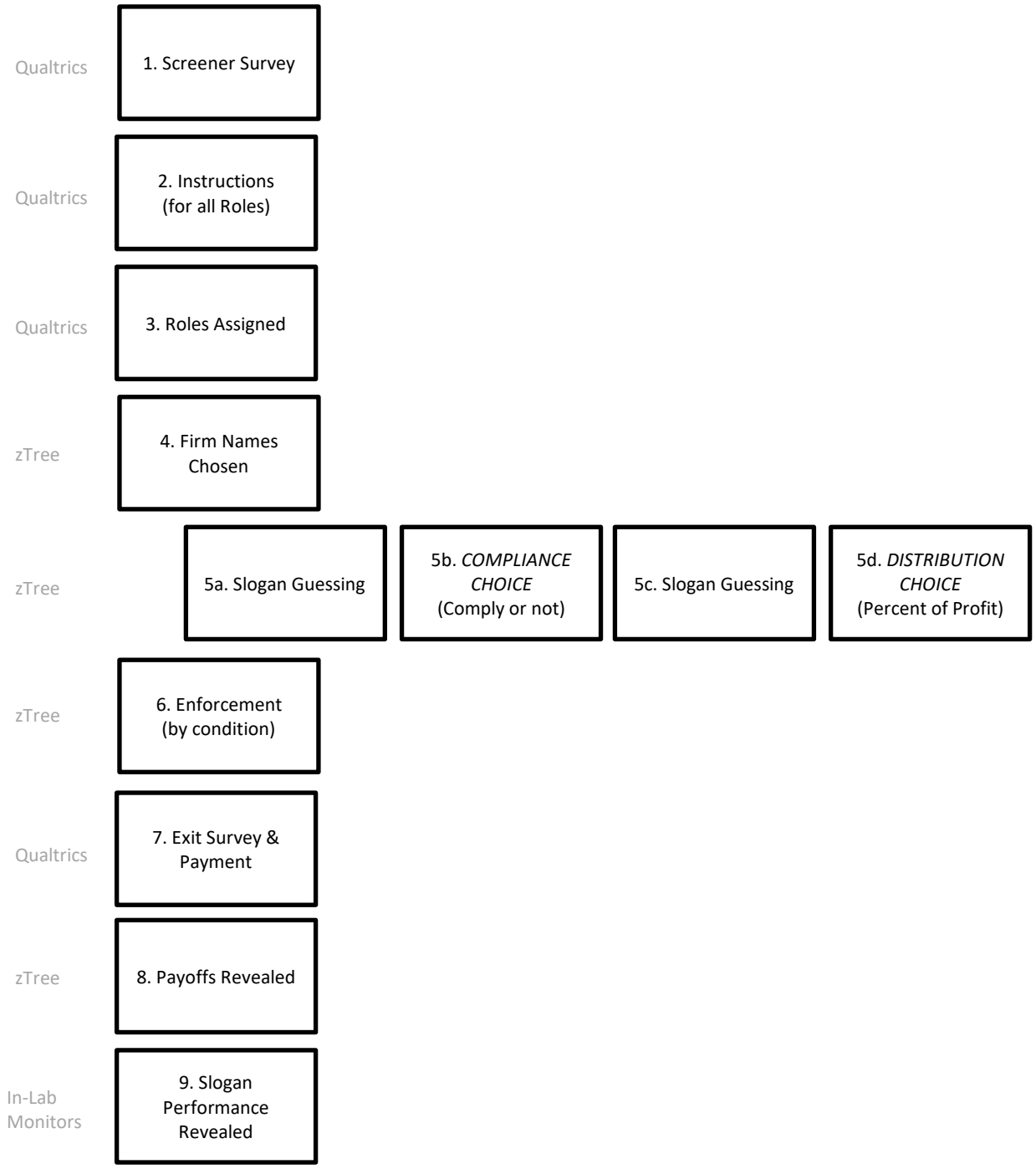


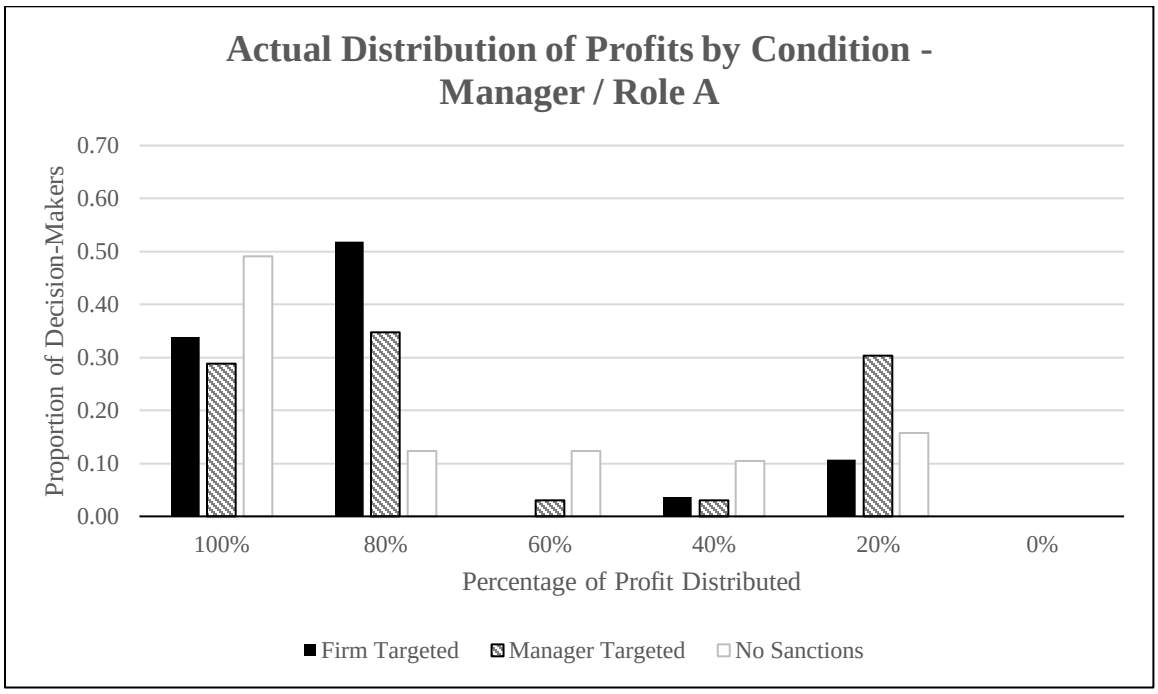
FIGURE 1: EXPERIMENTAL PROCEDURES FLOWCHART



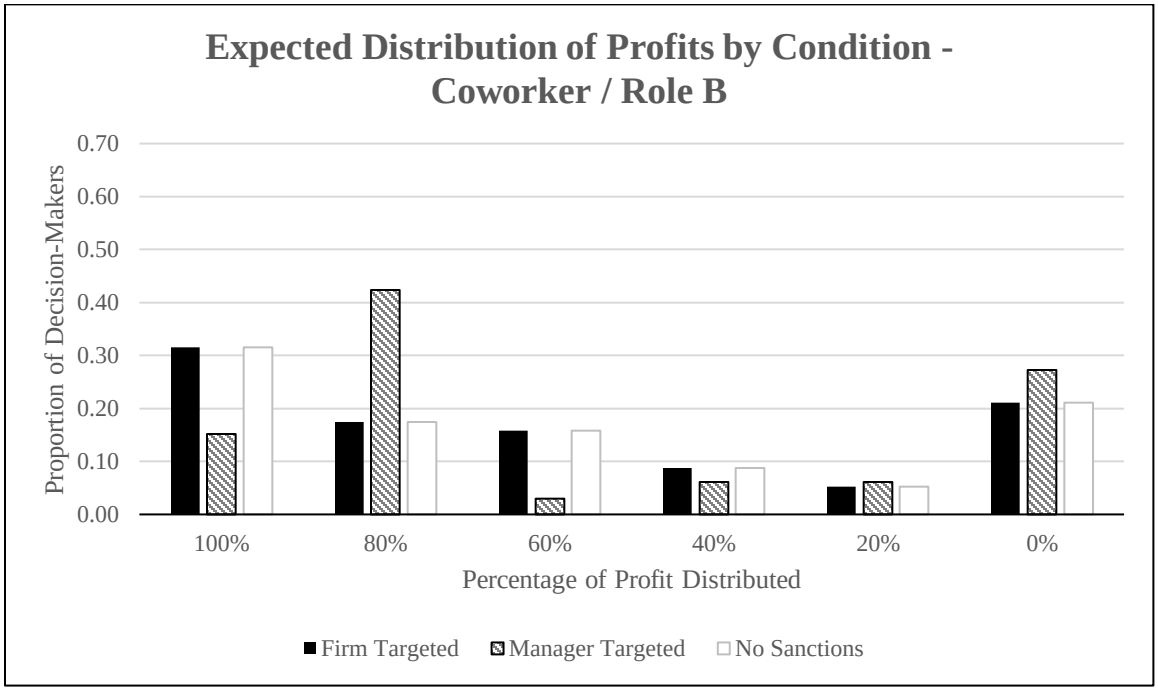
ABOVE: Experimental procedures are depicted as a sequential flowchart. Procedures described fully in Section 3.2. Participants complete a screener survey prior to enrolling. During the experiment session, participants first complete instructions for all roles and then learn their own role (Qualtrics). Participants then complete the experiment task, which involves selecting a firm name, completing a slogan guessing game (by role) and then making compliance choices (by role), and learning final payoffs including any enforcement (zTree). Lastly participants complete an exit survey (Qualtrics), receive their payment and learn their firm's slogan guessing performance.

FIGURE 2: ACTUAL AND EXPECTED PROFIT DISTRIBUTED BY CONDITION

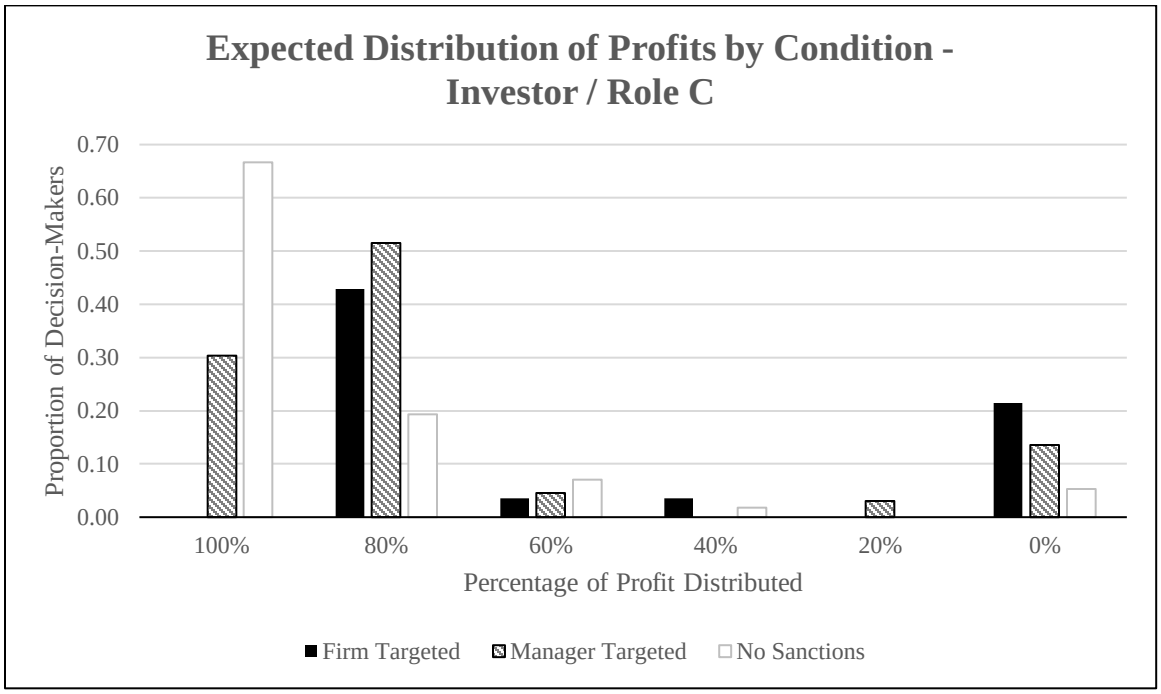
Panel A: Role A (Decision-Making Manager)



Panel B: Role B (Passive Coworker)



Panel C: Role C (Passive Investor)



ABOVE: Histograms of participants' actual (Manager: Panel A) and hypothetical (Coworker: Panel B and Investor: Panel C) distribution choices. Participants may distribute from 0% to 100% in increments of 20%. Displayed separately by condition (Firm-Targeted: solid black bar, Manager-Targeted: striped bar, No Sanctions: solid white bar)

TABLE 1: DESCRIPTIVE STATISTICS

Means (*Std Dev*)

Panel A: Role A (Decision-Making Coworker)

				Profit Distribution								
Condition	**n**	**Compliance Frequency**	**Compliance Quality**	**100%**	**80%**	**60%**	**40%**	**20%**	**0%**	**% Male**	**Age**	**Aggregate Fairness**
Firm Target	51	90.2%	0.80 (0.28)	37.3%	52.9%	0.0%	0.0%	9.8%	0.0%	39.2%	18.8 (0.9)	3.9 (1.1)
Manager Target	65	64.6%	0.62 (0.39)	29.2%	35.4%	3.1%	3.1%	29.2%	0.0%	54.8%	18.8 (0.9)	3.5 (1.0)
No Sanctions	54	63.0%	0.74 (0.34)	51.9%	11.1%	13.0%	9.3%	14.8%	0.0%	52.1%	18.9 (1.1)	4.1 (1.1)

Panel B: Role B (Receiving Coworker)

				Hypothetical Distribution								
Condition	**n**	**Compliance Frequency**	**Compliance Quality**	**100%**	**80%**	**60%**	**40%**	**20%**	**0%**	**% Male**	**Age**	**Aggregate Fairness**
Firm Target	52	75.0%	0.65 (0.33)	11.5%	63.5%	1.9%	3.8%	1.9%	17.3%	50.0%	18.9 (1.1)	3.2 (0.9)
Manager Target	64	57.8%	0.55 (0.39)	15.6%	42.2%	3.1%	6.3%	4.7%	28.1%	54.0%	18.7 (1.0)	3.2 (1.1)
No Sanctions	50	44.0%	0.57 (0.39)	30.0%	14.0%	18.0%	10.0%	6.0%	22.0%	61.4%	19.1 (1.3)	3.4 (1.0)

Panel C: Role C (Receiving Investor)

				Hypothetical Distribution								
Condition	**n**	**Compliance Frequency**	**Compliance Quality**	**100%**	**80%**	**60%**	**40%**	**20%**	**0%**	**% Male**	**Age**	**Aggregate Fairness**
Firm Target	54	70.4%	0.66 (0.38)	29.6%	40.7%	3.7%	3.7%	0.0%	22.2%	50.0%	18.8 (0.9)	2.7 (1.0)
Manager Target	61	80.3%	0.73 (0.33)	32.8%	47.5%	4.9%	0.0%	3.3%	14.8%	55.0%	19.0 (1.0)	3.1 (1.0)
No Sanctions	52	86.5%	0.88 (0.34)	69.2%	17.3%	7.7%	1.9%	0.0%	3.8%	46.7%	19.2 (1.4)	3.3 (1.0)

Aggregate Fairness is an average of participants' responses to four 7pt Likert questions prompting participants to indicate their beliefs that Role A/I was concerned with maximizing the total pay of (a) Role A/Self (reverse-coded), (b) Role B, (c) Role C, and (d) all members of the firm. *Compliance Frequency* is the percentage of participants who elect to comply (their distribution choices are either 80% or 100%). *Compliance Quality* is the percentage of overall profits distributed by the participant. *Firm Target* reflects observations in the firm-targeted sanctions condition, where any enforcement penalties are imposed against both coworkers, Role A and Role B. *Manager Target* reflects observations in the manager-targeted sanctions condition, where any enforcement penalties are imposed against only the decision-making coworker, Role A. *No Sanction* reflects observations in the no sanctions condition, where there are no penalties or enforcement. *Role A* reflects participants assigned to the decision-making role. *Role B* reflects participants given the passive coworker role. *Role C* reflects participants assigned to the investor role.

TABLE 2: ROLE A COMPLIANCE (DECISION-MAKING COWORKER)

Odds Ratio (*z*-score)
Coefficient (*t*-statistic)

	Panel A		**Panel B**		**Panel C**	
	Manager-Target v. No Sanctions		***Manager-Target v. Firm-Target***		***Firm-Target v. No Sanctions***	
	Compliance Frequency *Logit*	***Compliance Quality*** *OLS*	***Compliance Frequency*** *Logit*	***Compliance Quality*** *OLS*	***Compliance Frequency*** *Logit*	***Compliance Quality*** *OLS*
Manager-Target	1.07 (0.19)	-0.12 (-1.71)*				
Firm-Target			5.03 (3.01)***	0.17 (2.68)***	5.41 (3.08)***	0.06 (0.97)
Constant	1.58 (0.74)	0.74 (14.72)***	0.07 (-2.15)**	0.62 (14.40)***	1.70 (1.88)*	0.74 (17.43)***
n	119	119	116	116	105	105
Pseudo R^2 / Adj R^2	0.000	0.016	0.086	0.051	0.099	0.000

*, **, *** reflects statistical significance at the two-tailed p=0.10, p=0.05, and p=0.01 levels, respectively

Compliance Frequency is an indicator variable set to 1 for managers who elect to comply (their distribution choices are either 80% or 100%). *Compliance Quality* is the percentage of overall profits distributed by the participant. *Firm-Target* is an indicator variable set to 1 for participants in the firm targeted sanctions condition, 0 otherwise. *Manager-Target* is an indicator variable set to 1 for participants in the manager targeted sanctions condition, 0 otherwise *No Sanction* is an indicator variable set to 1 for participants in the no sanctions condition, 0 otherwise. *Role A* reflects participants assigned to the decision-making role.

TABLE 3: THE MEDIATING EFFECT OF AGGREGATE FAIRNESS

Panel A. No Sanctions vs Manager Sanctions (Supplemental Analysis for H1a)

			Coefficient	Standard Error	*p-value* (two-tailed)
Manager Target	→	*Aggregate Fairness*	-0.54	0.19	0.01
Aggregate Fairness	→	*Compliance Quality*	0.18	0.03	0.00
Manager Target	→	*Compliance Quality*	-0.02	0.06	0.79

Indirect effect Coefficient: 0.05, Standard Error: 0.03. Bootstrap 90% confidence interval of indirect effect based on 10,000 samples: (-0.17 to -0.04)

Panel B: Manager-Targeted vs. Firm Sanctions (Supplemental Analysis for H2a)

			Coefficient	Standard Error	*p-value* (two-tailed)
Firm Target	→	*Aggregate Fairness*	0.37	0.20	0.07
Aggregate Fairness	→	*Compliance Quality*	0.15	0.03	0.00
Firm Target	→	*Compliance Quality*	0.12	0.06	0.05

Indirect effect Coefficient: -0.01, Standard Error: 0.04. Bootstrap 90% confidence interval of indirect effect based on 10,000 samples: (0.01 to 0.11)

Panel C: Firm Sanctions vs. No Sanctions

			Coefficient	Standard Error	*p-value* (two-tailed)
Firm Target	→	*Aggregate Fairness*	-0.09	0.11	0.42
Aggregate Fairness	→	*Compliance Quality*	0.14	0.03	0.00
Firm Target	→	*Compliance Quality*	0.04	0.03	0.12

Indirect effect Coefficient: -0.01, Standard Error: 0.02. Bootstrap 90% confidence interval of indirect effect based on 10,000 samples: (-0.04 to 0.01)

Aggregate Fairness is an average of participants' responses to four 7pt Likert questions prompting participants to indicate their beliefs that Role A/I was concerned with maximizing the total pay of (a) Role A/Self (reverse-coded), (b) Role B, (c) Role C, and (d) all members of the firm. *Distribution* is the percentage of overall profits distributed by the participant. In Panel A, *Manager Target is compared* with *No Sanctions.* In Panel B, *Manager Target is* compared with *Firm Target.* In Panel C, *Firm Target* is compared with *No Sanctions. Firm Targeted* is an indicator variable set to 1 for participants in the firm targeted sanctions condition, 0 otherwise. *Manager Targeted* is an indicator variable set to 1 for participants in the manager targeted sanctions condition, 0 otherwise *No Sanction* is an indicator variable set to 1 for participants in the no sanctions condition, 0 otherwise. *Role A* reflects participants assigned to the decision-making role.

TABLE 4: HYPOTHETICAL COMPLIANCE DECISIONS BY NON-MANAGER PARTICIPANTS

Odds Ratio (*z*-score)
Coefficient (*t*-statistic)

	Panel A		**Panel B**		**Panel C**	
	Manager Target v. No Sanctions		***Manager-Target v. Firm-Target***		***Firm-Target v. No Sanctions***	
	Compliance Frequency *Logit*	***Compliance Quality*** *OLS*	***Compliance Frequency*** *Logit*	***Compliance Quality*** *OLS*	***Compliance Frequency*** *Logit*	***Compliance Quality*** *OLS*
Manager-Target	1.15 (0.50)	-0.10 (-1.98)**				
Firm-Target			1.20 (0.64)	0.02 (0.44)	1.39 (1.08)	-0.07 (-1.53)
Constant	1.91 (3.11)***	0.73 (20.29)***	2.21 (4.10)***	0.64 (19.42)***	1.91 (3.11)***	0.73 (20.91)***
n	227	227	231	231	208	208
Pseudo R^2 / Adj R^2	0.001	0.013	0.002	-0.004	0.005	0.006

*, **, *** reflects statistical significance at the p=0.10, p=0.05, and p=0.01 levels, respectively

Compliance Frequency is an indicator variable set to 1 for managers who elect to comply (their distribution choices are either 80% or 100%). *Compliance Quality* is the percentage of overall profits distributed by the participant. *Firm-Target* is an indicator variable set to 1 for participants in the firm targeted sanctions condition, 0 otherwise. *Manager-Target* is an indicator variable set to 1 for participants in the manager targeted sanctions condition, 0 otherwise *No Sanction* is an indicator variable set to 1 for participants in the no sanctions condition, 0 otherwise. *Role A* reflects participants assigned to the decision-making role.