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Can decision transparency increase citizen trust in regulatory agencies? Evidence from a representative survey experiment

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Abstract
Decision transparency is often proposed as a way to maintain or even increase citizen trust, yet this assumption is still untested in the context of regulatory agencies. We test the effect of transparency of a typical decision tradeoff in regulatory enforcement: granting forbearance or imposing a sanction. We employed a representative survey experiment (n = 1,546) in which we test the effect of transparency in general (providing information about a decision or not) and the effect of specific types of transparency (process or rationale transparency). We do this for agencies supervising financial markets, education, and health care. We find that overall decision transparency significantly increases citizen trust in only two of the three agencies. Rationale transparency has a more pronounced positive effect only for the Education Inspectorate. We conclude that the overall effect of decision transparency is positive but that the nature of the regulatory domain may weaken or strengthen this effect.

Keywords: citizen trust, decision acceptance, enforcement, openness, regulatory agencies.

1. Introduction

Given the rise of the number of regulatory agencies and their increasing powers (Majone 1997; Levi-Faur & Jordana 2005), it is imperative that they are being perceived as trustworthy by the public. So far, most research has been concerned with stakeholder trust and regulatory relations (Six & Verhoest 2016), yet also citizen trust is crucial for the effectiveness of regulatory agencies. For instance, trust in regulatory agencies is needed for the uptake of their recommendations by citizens and, as a result, regulated entities may feel more pressure to be compliant (Walls *et al.* 2004). Hence, citizen trust in regulatory agencies is crucial to sustain the effectiveness of regulatory agencies that, to a large extent, depend on voluntary compliance by regulated entities (Murphy *et al.* 2009; Murphy 2016).

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Transparency of decisionmaking – showing how and why a decision was taken – has been widely lauded as a way to sustain or even increase such trustworthiness (Hood & Heald 2006). The core idea behind this is that if governments are more open about how and why they make decisions, citizens will better understand the complexities and dilemmas, and eventually come to trust them more (Meijer 2009). However, recent empirical studies have shown that such broad assumptions about transparency are naïve and that the effect of transparency is highly context-dependent (De Fine Licht *et al.* 2014; Cucciniello *et al.* 2017). Literature on regulatory agencies, however, has paid limited attention to the effects of decision transparency. Although there have been studies focusing on effects of so-called targeted transparency on stakeholder compliance (e.g. Fung *et al.* 2007; van Erp 2011), transparency *concerning their own decisions* affecting citizen trust has been largely neglected in the literature (de Vries 2016; Six & Verhoest 2016; Grimmelikhuijsen *et al.* 2018).

The dearth of studies in this area is surprising as regulatory decisions, and especially enforcement decisions, are highly interesting to citizens. Enforcement decisions of regulatory agencies directly or indirectly affect citizens' lives. For instance, a decision to close a nursery home or school has a great direct impact on pupils, parents, elderly, and caretakers. Indirectly citizens are impacted by news media who often report on incidents and remarkable enforcement decisions, sometimes causing reactions from the public or political stir (e.g. Gilad *et al.* 2013; van Erp 2013).

Transparency of particularly enforcement decisions is interesting for another reason, as such decisions are wrought with tradeoffs. For instance, in many enforcement decisions, regulators face a tradeoff between "going by the book" or being accommodating, for instance, by taking an educational approach to violators (Braithwaite *et al.* 1987; Bardach & Kagan 2002; Lo *et al.* 2009; McAllister 2010). In light of these common tradeoffs in enforcement decisions that regulatory agencies have to make, we test whether providing people with information about such decisions affects trust.

We argue that decision transparency could affect trust mainly through two psychological mechanisms. First, exposing citizens to details of a decision is expected to decrease the psychological distance between a citizen and regulatory agency. Based on construal level theory of psychological distance (Liberman & Trope 1998; Trope & Liberman 2010), we expect that providing information about a regulatory agency decision decreases the psychological distance. This causes citizens to assess trust not just based on abstract and perhaps negative stereotypes (e.g. Marvel 2015), but on detailed and concrete perceptions about what regulatory agencies actually do, which may eventually increase trust (e.g. Benedicktus 2008; Edwards *et al.* 2009). Second, based on the theory of motivated scepticism (Taber & Lodge 2006), we expect that a specific form of transparency – rationale transparency – may be better suited to improve citizen trust compared with other forms of transparency (De Fine Licht *et al.* 2014). Motivated scepticism postulates that if people are presented with a conclusion they oppose, they inhibit a strong motivation to scrutinize information and arguments underlying that conclusion (Ditto & Lopez 1992; Taber & Lodge 2006). Providing a clear rationale therefore may help to justify a difficult decision and overcome initial scepticism of citizens.

Overall, this article explores different ways to inform citizens about regulatory, and more specifically, enforcement decisions and their effects on their trust. The research question guiding this article is: *Does decision transparency influence citizen trust in regulatory agencies?*

In this article, we employ a survey experiment in a sample representative of the Dutch population of 18 years and older (n = 1,546) to investigate this question. The experiment employs a 3×5 factorial between-subjects design. The first factor is the type of agency which consists of three agencies: the Dutch Authority for the Financial Markets (AFM), the Dutch Health Care Inspectorate, and the Dutch Inspectorate of Education. The second factor consists of five groups: a nontransparency group that received only general information about the agency (control), a basic decisionmaking transparency group that received information about a decision only, and three variations of more elaborate decisionmaking transparency, who received more information about how (process) and/or why (rationale) a decision was made.

Overall, we find that exposing citizens to decision transparency significantly increases citizen trust in the Education and Health Inspectorate, but not the Authority Financial Markets, compared to control groups that received general information about these agencies. Furthermore, we find a more pronounced positive effect of specifically rationale transparency compared to other forms of transparency only for the Education Inspectorate. Hence, the specific effect of decision transparency appears to depend on the nature of the regulatory domain. We explore possible implications and interpretations in the Discussion section.

2. Defining trust in regulatory agencies

Trust has been studied widely across all social science disciplines and this has resulted in a great variety of definitions (Rousseau *et al.* 1998; Dietz 2011). In this article, we do not aim nor claim to provide a comprehensive discussion of the literature on trust. Instead, we use the limited space available here to explain how we defined trust in the context of citizen trust of regulatory agencies. We employ a broad and much-cited definition of trust by Mayer *et al.* (1995) and then explain how this fits with our focus on citizen trust in regulatory agencies. Mayer *et al.* define trust as follows: "*the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party*" (Mayer *et al.* 1995, p. 712).

We will discuss two crucial elements of this definition in more detail: "vulnerability" and "expectations" of the trusted party. First, vulnerability is inherent to the relation between citizens and regulatory agencies (Six 2013). For instance, citizens cannot assess the quality of nursing homes, schools, or financial institutions by themselves. So, when a person needs to move to a nursing home, or puts their children in a school, this person assumes – or hopes – that the regulatory agencies have done their job sufficiently and that he or she can be assured of a certain minimum level of safety and quality of a nursing home or school. If an agency has not carried out the tasks it has been entrusted with, this person risks choosing a low quality – or even unsafe – nursing home. Hence, a relationship that entails citizen trust in a regulatory agency involves an element of vulnerability.

Second, central to trust are the expectations of the vulnerable party (i.e. the citizen). These expectations are based on the perceptions that people have of the "other." In other words: are the intentions and behaviors of the other perceived to be trustworthy? In this article, we conceptualized "trust in regulatory agencies" as the extent to which citizens consider these agencies "worthy of trust." Various literature reviews have shown that we best conceptualize perceived trustworthiness in multiple dimensions. Three dimensions are central: perceived competence, benevolence, and integrity (Mayer *et al.* 1995; McKnight *et al.* 2002; McEvily & Tortoriello 2011; Six & Verhoest 2016; Grimmelikhuijsen & Knies 2017). Perceived competence is the extent to which a citizen perceives the regulatory agency to be capable, effective, skillful, and professional; perceived benevolence refers to the extent to which a citizen perceives the regulatory agency to care about the welfare of the public and to be motivated to act in the public interest; perceived integrity is whether citizen perceives the regulatory agency to be sincere, truthful, and to fulfill its promises.

The role of trust between stakeholders and regulatory agencies has been researched widely (e.g. Braithwaite & Makkai 1994; van Erp 2010; Six 2013), however, a recent literature review on regulatory trust found that published empirical studies on citizen trust in regulatory agencies are relatively scarce and deserves more attention (Six & Verhoest 2016). Nevertheless, some studies provide important insights. For instance, Walls *et al.* (2004) employ focus groups and find that citizens are relatively unknowing of what regulatory agencies do exactly, but that they are able to take a "reasoned view" on what they think an agency should do to promote the public interest. Providing decision transparency may help citizens to develop such a reasoned view of regulatory agencies.

Other empirical studies have focused on the relation between communication of regulatory agencies and citizen trust. For instance, some have looked at citizen trust in regulatory agencies and focus on risk communication after impactful incidents (e.g. Chou & Liou 2010), or communication on the risk of using new technologies, such as nanotechnology (e.g. Sylvester *et al.* 2009). Despite their limited number, these studies show that regulators are poised to look for ways to responsibly communicate with the public about risks in the domain that they regulate. More recently, however, transparency of the regulatory agencies *themselves* has come to the limelight, which we will discuss in more detail in the next section.

3. Regulatory transparency and decisionmaking

The problem with using a popular term such as transparency is that it also obscures a lot of things: it can mean many things to many people. Therefore, it is crucial to be precise in defining and describing transparency. A systematic literature review of 187 studies on transparency by Cucciniello *et al.* (2017) reveals that most definitions address the availability of information of decisionmaking processes, budgets, operations, or performance of governmental bodies. Releasing such information should enable inward observability, to allow external stakeholders to monitor the internal operations of an organization.[1]

This leaves open whether the disclosed information concerns the organization itself or a different body (organization A discloses information about organization B). This is particularly relevant to regulatory agencies as they increasingly tend to disclose information about other entities. In other words, regulators often use so-called "targeted transparency" as a tool to enforce compliance among the organizations they regulate (Fung *et al*. 2007; van Erp 2011). The Health Care Inspectorate in the Netherlands, for instance, publishes inspection reports about quality and safety of health care and the Dutch Inspectorate of Education does the same concerning educational quality of schools (e.g. Meijer 2007). The effectiveness of publishing such reports on compliance and performance has been subject to much debate (Etzioni 2010). For instance, the effectiveness of "naming and shaming" of non-compliant regulatees has been contested, and depends on a number of different aspects, such as the responsiveness and type of supervised entity and the nature of the violated norm (van Erp 2010, 2011).

The disclosure practices of regulatory agencies targeting other organizations have also brought another aspect of transparency to the fore: namely, the transparency of regulatory agencies about *themselves*. Like other (semi)governmental bodies, regulatory agencies have come under some pressure to disclose information about their methods, procedures, and decisions with the idea of fostering accountability and trust (e.g. Porumbescu 2015; de Vries 2016; de Boer *et al*. 2018). The basic premise is that transparency fosters knowledge and understanding about what government does and that this knowledge and understanding eventually brings greater trust (Hood & Heald 2006).

More recent notions and studies of transparency have shown such broad assertions about transparency are naïve. Various experimental studies on the effects of transparency have yielded mixed results at best (Grimmelikhuijsen *et al*. 2017). For instance, two experimental studies, which looked at the relationship between transparency and legitimacy, found a negative relationship between transparency and legitimacy, especially when the topic that is being made transparent is a contested one (De Fine Licht 2011, 2014; De Fine Licht *et al*. 2014). Only a few experimental studies find a positive effect of transparency on citizen trust (e.g. Porumbescu & Grimmelikhuijsen 2018). Overall, the conclusion of this emerging body of empirical research is that the effects of transparency are highly context-bound and that more investigation is needed to uncover how the relation between transparency and trust holds in various contexts.

But what specifically does decisionmaking transparency of regulatory agencies look like? Our definition of transparency regards releasing information about organizational matters to allow external stakeholders to monitor that organization. Decision transparency, then, is releasing information about *why* and *how* a decision was made by an agency. A commonly used way to further conceptualize decision transparency is in decision *rationale* (why) and in decision *process* (how). This distinction has been first applied to transparency by De Fine Licht *et al*. (2014), who based this distinction on work by Mansbridge (2009). Transparency in rationale concerns the information on the substance of the decision, such as the facts and reasons on which it was based. This is typically information that is targeted toward an audience that has not been involved in a decisionmaking procedure directly. For example, a decision to grant forbearance to a lender that was not compliant with current regulations. Transparency of a decision rationale, then, would provide clear reasons to the public for why the financial regulator decided the way it did, and on which facts these reasons were grounded.

In contrast, process transparency refers to things that happened during the decisionmaking process, such as deliberations, negotiations, and procedures. This information can be disclosed ex-ante, real-time, or in retrospect. Ex-ante transparency can be fostered by providing information about how regulatory agencies will come to a sanctioning decision by outlining the steps, regulations and procedures that are going to be used. So far, real-time transparency initiatives in the context of regulatory agencies are still limited in number, although the Food Safety Agency (UK) does publish live videos of their committee meetings.[2] An example of process transparency in retrospect is the publishing of minutes of such a committee meeting, or by explaining the negotiations and procedures that have been applied when coming to a decision.

The distinction between rationale and process transparency is important for trust-related outcomes as well. We know from various experiments that appealing to procedural elements in decisionmaking affects trust. Porumbescu and Grimmelikhuijsen (2018) show that exposing people to information about a decisionmaking procedure (process transparency) increases their trust in local government. On the other hand, De Fine Licht *et al*. (2014) found opposite effects of exposing citizens to a decisionmaking procedure. They manipulated rationale and process transparency in a vignette experiment in a school setting. Participants were presented with a vignette in which new rules of conduct would be adopted by the school. In the rationale transparency condition, the reasons for the new rules were explained, while in the process transparency condition participants gained insights into deliberations during the decisionmaking process. De Fine Licht *et al.* conclude that rationale transparency – i.e. justifying the choices behind a decision – increases decision acceptance, whereas process transparency does not. Overall, these findings seem to suggest that especially getting a direct insight into the reasons (rationale) behind a decision helps to increase trust, yet it does not provide a theoretical explanation for the mechanisms at the level of the individual citizen exposed to such information. In the next section, we will elaborate on two psychological mechanisms that connect transparency and trust at this microlevel.

4. Connecting transparency and trust: Two psychological mechanisms

First, we expect decisionmaking transparency to change the criteria by which citizens judge regulatory agencies. Based on construal level theory of the psychological distance, we expect that providing information about a regulatory decision decreases the psychological distance between the participant and the object that is evaluated, which leads to evaluations that are focused on more detailed as opposed to global aspects of the evaluated object (Liberman & Trope 1998; Trope & Liberman 2010). Four key dimensions have been found to affect psychological distance: geographical distance; temporal distance; distance between the perceiver and a social target, that is, another individual or group; and uncertainty (how certain it is that an event will happen) (Trope *et al.* 2007). Most central to this study is the dimension of social distance.

Social distance is increased by dissimilarities with the other object, but also by higher perceived power by the other (Smith & Trope 2006). Increased social distance has profound effects on the way an object is evaluated. For instance, when social distance to another person increases from an in-group member (close social distance) to an out-group member (far social distance), people will mentally construe the other person using abstract concepts such as stereotypes (Kim *et al.* 2008). One's overall evaluation of this person will become more strongly affected by these stereotypes (Idson & Mischel 2001).

The degree of social distance has been found to affect judgements of organizations, too. Research in consumer behavior has shown that there is a link between higher distance and lower trust in (commercial) organizations, too (Benedicktus 2008; Edwards *et al.* 2009). In line with this, we argue that providing transparency about a regulatory agency decreases the social distance between a citizen and the agency. Without decision transparency, a citizen relies on broad categorizations and stereotypes of the agency. Such stereotypes might relate to government and the public sector in general and these bring out negative images of government waste and inefficiency (Marvel 2015). When some level of decision transparency is provided, we expect citizens to move from a high level of abstraction to a low level of abstraction. This means that, when evaluating a regulatory agency, a citizen is more likely to focus on specific aspects of how it makes decisions instead of relying on broad stereotypes.

Therefore, we postulate the Transparency Hypothesis, which states that providing decision transparency – in general – decreases the distance between citizens and regulatory agencies, which positively relates to trust in them:

> ***Transparency Hypothesis:*** *Providing decision information will lead to more citizen trust in a regulatory agency, compared to a control group with only general information about the agency.*

Second, based on an experiment by De Fine Licht *et al.* (2014), we expect rationale transparency to have a more positive effect than other types of transparency. We assume that an additional psychological mechanism might be at play when tradeoffs are being disclosed to the public. Based on the theory of motivated scepticism, we argue that if people are presented with information they are potentially sceptical about, such as a decision tradeoff, they are more strongly motivated to scrutinize information and arguments that support that conclusion (Ditto & Lopez 1992; Taber & Lodge 2006).

Providing information that explicitly justifies a decision, such as a decision rationale, may meet this higher level of information scrutiny. Therefore, we expect rationale transparency to have a more profoundly positive effect on trust than process transparency. Transparency of a decision-process – i.e. gleaning insight into how the decision was made – might not necessarily provide a justification for the decision and thus have a less pronounced effect on trust (e.g. De Fine Licht 2014; De Fine Licht *et al.* 2014). We propose the following:

Rationale Transparency Hypothesis: *Providing decision information explaining the rationale behind a decision will lead to more citizen trust in a regulatory agency, compared to providing other types of decision transparency.*

We test each hypothesis in three regulatory domains: finance, education, and health care. The main reason for taking three different regulatory domains into consideration is to assess if the effects of transparency and rationale transparency are robust and generalizable across domains. Specifically, these three domains are chosen because of their relatively high visibility to the public. At the same time, we acknowledge that there are large differences in the characteristics of these regulatory regimes in terms of their organizational structure, governance, procedures, functioning, regulatory duties, and accountability arrangements (May 2007). Although there undoubtedly are differences in the overall level of transparency and trust in regulatory agencies in these domains, we have found no theory to support *a priori* expectations about whether citizens actually *respond* differently to decision transparency provided across these domains. Nonetheless, we will carry out additional analyses to investigate if any differences between the domains exist.

5. Research design

5.1. Design, materials, and data

We designed a 3 (domain) × 5 (transparency type) factorial between-subjects vignette experiment to test the robustness of our claims across three regulatory agencies: the Authority for the Financial Markets (AFM), the Inspectorate of Education, and the Health Care Inspectorate. In this section, we explain the overall features of these experiments. Figure 1 provides a graphical overview.

The data were collected by Blauw, one of the larger market research companies in the Netherlands. Respondents were recruited by Blauw from a blend of large panels (N > 250,000) managed by Survey Sampling International (SSI, now called Dynata). Although this was not a probability sample taken from the population, self-selection effects are countered by the following measures. First, SSI randomly draws participants from a variety of panels

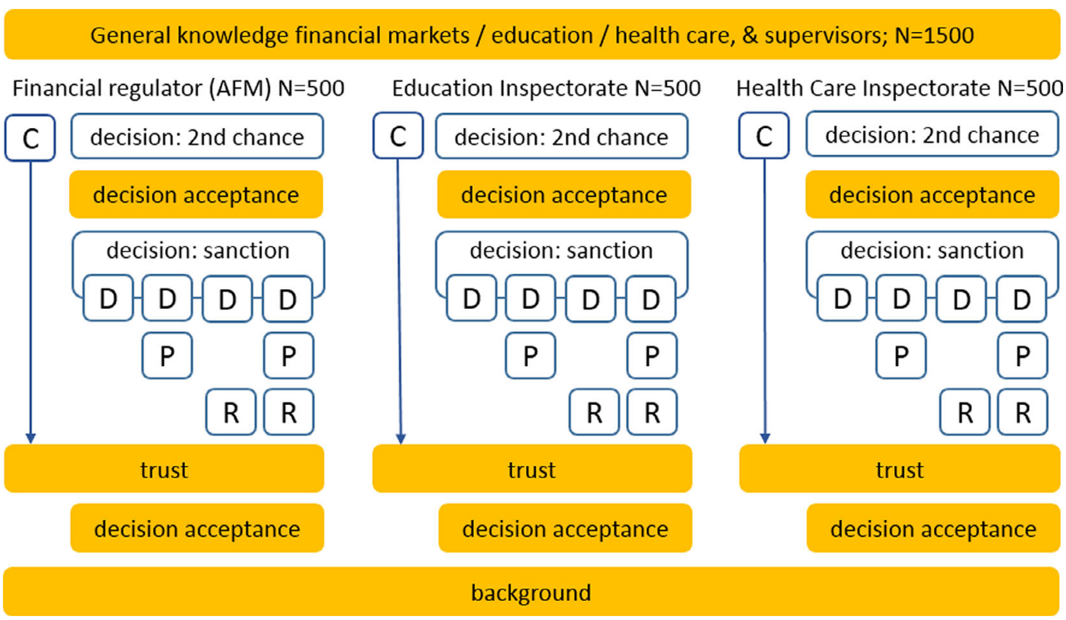

Figure 1 Experimental setup for the experiment. Shaded boxes refer to questions in the survey. Open boxes refer to texts that were provided to read to all groups except the control groups (C). Text in the first round (decision: 2nd chance) was similar for all experimental groups. In the second round (decision: sanction), four groups were randomly made: D: only decision (D), DP: decision (D) with process transparency (P), DR: decision (D) with rationale transparency (R), and DPR: decision (D) with both process transparency (P) and rationale transparency (R).

including more traditional research panels where respondents regularly participate in research, but also panels with participants that have indicated to be willing to participate in research on a one-time basis. Second, self-selection was countered by having invitations that contained no cues about the topic or duration of the survey. Instead, participants clicked on a link to an online platform from SSI where they were randomly assigned to a survey.

A stratified sampling strategy was designed to select respondents in such a way that the sample is representative of the Dutch population based on gender, educational level, and age. A check afterward confirmed this objective was achieved; our samples aligned fairly well with the overall gender, age, and education distribution for the total adult Dutch population (see section "Sample" for details).

The total sample consisted of 1,546 respondents. The whole sample first answered background questions and also questions on trust in, and knowledge of, all three studied regulators. The items that measure pre-existing knowledge, as well as the other items we mention here, will be discussed in the operationalization section. We have included these measurements to assess on the one hand, to what degree the regulatory agencies are known within our sample, and on the other hand to check if there is a relationship between being familiar with a regulatory agency and trusting a regulatory agency.

After the general questions, the three separate but comparable experiments for each regulator began, consisting of about 500 participants randomly allocated per regulator. Stratified sampling based on age, gender, and educational level was used to populate the three experiments to make sure that the experimental cells were representative for the population of the Netherlands.

In each experiment, all respondents –including the control groups– got to read a short description introducing the goal of the relevant regulatory agency. We included this brief text to ensure that each respondent has at least a basic understanding of the regulatory agency, regardless of their pre-existing knowledge.

Within each experiment, respondents were randomly assigned to one of five groups. One group was a control group (C), receiving only general information about the agency. The four groups that did receive information, all received the same information in the first round. In each case, the regulatory agency encounters a regulatee, which does not adhere to regulations. A tradeoff was then described: the regulatory agency's has the choice between imposing a sanction or giving the regulatee a chance to conform to the law within a certain period (forbearance). In the first round, the decision was to offer a second chance after an offense, the opportunity to correct. The template for the information on the first decision[3]:

> *Title: Regulatory agency gives [Regulatee X] a second chance*
> *Lead: [Regulatee X] has been in sight of [regulatory agency] for a while because of [violation], however the regulatory agency has decided to give [Regulatee X] a second chance – and not to impose a sanction yet. This prevents both employees and clients of [Regulatee X] from suffering negative effects of a potential default of [Regulatee X].*
> *Body: [explanation of the violation – focus on negative impacts for clients]*
> *Ending: However, the [regulatory agency] has decided to give [Regulatee X] a chance to improve. This prevents the regulatee from having to deal with financial problems, which could lead to [negative effects for clients and employees].*
> *After a period of one year, the [regulatory agency] will assess if the regulatee has sufficiently improved.*

Subsequently, respondents were asked about their acceptance of this decision by the regulator to offer the offending party a second chance.

In the second round of information, participants were randomly assigned to one of the following conditions:

- Decision only (D): A decision information group, receiving only a final decision (D), without additional explanation;
- Decision and Process (DP): A process transparency group, receiving an explanation of the process leading up to the decision. This included elements of how the decision was made such as hearings;
- Decision and Rationale (DR): A rationale transparency group, receiving information concerning the rationale behind the decision. This included a statement of the main reason behind issuing a hefty sanction, which is the case of the inspection protecting vulnerable customer, clients, or pupils;
- Decision, Process and Rationale (DPR): A rationale and process group, receiving both a rationale and process explanation.

The vignettes were designed to be as comparable as possible across the three domains (finance, education, and health care). To enhance experimental realism, we asked senior inspectors from the Dutch AFM, the Health Care Inspectorate, and the Dutch Inspectorate of Education to read and correct our vignettes to make them as realistic as possible.

After reading the texts of the second round, all groups completed a measure of their trust in the relevant regulatory agency by answering an adapted version of the Citizen Trust in Government Organizations (CTGO) scale developed by Grimmelikhuijsen and Knies (2017), which is discussed in the "Measures" section.

Next in the survey, relevant groups could again provide their decision agreement, this time the decision to sanction. To conclude the questionnaire, we asked additional background questions, for instance if respondents worked in either education, health care or the financial sector.

5.2. Measures

We used and adapted the CTGO scale originally developed by Grimmelikhuijsen and Knies (2017). In contrast to the original scale, a Principal Component Analysis revealed that there was only one underlying factor for our nine trust items, with one component with an Eigenvalue of 6.27 and the second component of just 0.47. Looking at the one factor solution, we find that all items have high factor loadings (≥0.797) and together have a Cronbach's Alpha of 0.96, which indicates that they form a reliable construct. Therefore, we conduct our analysis using the trust scale without distinguishing separate dimensions.

We also measured decision agreement at two points in the experiment: first after the vignette describing the decision to grant forbearance and secondly after the decision to penalize the supervised organization. We gauged decision agreement with the follow question: *I agree with the decision of the regulatory agency* (1-Strongly disagree–5-Strongly agree).

5.3. Sample

Tables below show a comparison between our sample data and actual descriptive statistics of the Dutch population in the year 2016, as generated by the Central Bureau of Statistics (CBS).

The first row in Table 1 shows a match between the percentage of female participants in our sample and the percentage in the overall population. In the educational level, we see a difference of about 7 percentage points between the sample and population.

The second Table shows a 2-year deviation from our sample relative to the population. These discrepancies are most likely caused by the fact that CBS uses a different minimum age: the educational level statistics (which we used here) start being measured at 15 years old, whereas the minimum age for our sample is 18. This leads to more people having finished their high school, leading to a higher average education and a higher average age. In addition, lower educated participants are known to be less likely to participate in research. That being said, our overall sample composition is a reasonable match with the population of the Netherlands.

5.4. Analysis

We carried out a two-way ANOVA analysis using R version 3.5.1 (R Core Team 2018) to investigate the main effect of transparency and the regulatory domain. We first determined the overall effects of transparency, regulatory domain and their interaction. Next, we estimated marginal means and plots using the "emmeans" package (Lenth 2018) and we used "ggplot" to graph changes in decision agreement (Wickham 2016).

Table 1 Sample descriptive versus actual population descriptive

	Sample	Population (Netherlands)
% Female	50.5	50.5
Education		
Low	25.0	31.8
Middle	47.2	39.3
High	27.7	29.9
Age	43.2	41.5

To specifically test both our hypotheses, we use planned comparisons. These comparisons provide more information as to where specific group differences can be found. To test the Transparency Hypothesis, we created a contrast between the control group and all other treatment groups, since this hypothesis predicts that there will be a difference when transparency – of any kind – is provided. For the Rationale Transparency Hypothesis we created a contrast that compared the rationale transparency group with the other transparency groups (hence excluding the control group, which is tested in the first contrast). We did this because this hypothesis predicted rationale transparency to have a stronger positive effect on trust compared with other forms of transparency.

6. Results

6.1. Descriptive results

Before the experiment began, we asked the respondents a few questions about their familiarity with the regulatory agencies and we also assessed the extent of their general trust in these agencies prior to the experiment. Overall, most participants had at least heard of the names of the regulators: 95.6 percent of respondents were familiar with the Dutch Inspectorate of Education and 94.1 percent knew about the Dutch Health Care Inspectorate. The Authority for the Financial Markets (AFM) was the least known of the regulators (65.7 percent). However, familiarity with a name does not necessarily mean that people know what a regulatory agency does. Overall, 27.8 percent of respondents said they had a (reasonably) good idea of what the AFM does, 58.9 percent know (reasonably) well what the Inspectorate of Education does and 54.0 percent know what the Health Care Inspectorate does. Overall, the Inspectorate of Education and Health Care Inspectorate are somewhat more familiar than the AFM.

Second, we also asked about general levels of trust and perceived importance prior to the experimental treatments. In general, a large majority, 81.2 percent of respondents, (fully) agrees that oversight in financial markets is important; 62.8 percent (fully) agrees with the statement "I trust that the AFM carries out its task well." Comparatively, 84.7 percent think oversight in education is important, with 69.6 having trust in it. For the Health Care Inspectorate the percentages are 86.4 and 68.8 percent. Overall, the percentages across agencies are fairly similar and reveal the pattern that most of the respondents agree that oversight is important and that a fairly large majority tends to entrust the regulators with this task.

6.2. Decision agreement

Although our main interest is in the effect of transparency on trust, we also assessed how decision agreement changed for each individual. In other words, we assessed the decision at T1 (when the agency decides to postpone the sanction) and the final decision at T2 (imposing a sanction after forbearance of a year). We carried out a repeated measures ANOVA and found that decision agreement significantly increased from T1 to T2 ($F(1, 1{,}233) = 139.67$, $p < 0.001$, partial $\eta^2 = 0.102$). Figure 2 shows the differences for each regulatory agency. Interestingly, although there was an overall change in decision agreement, this change was not significant for the Education Inspectorate.

In general, there is more acceptance of the decision to issue sanctions than to offer forbearance. The exception to the case is the Inspectorate of Education in which there was already a high acceptance to postpone the sanction in the first instance, and we do not find a difference between the two decisions. A possible explanation for this may be that the sanction in this part of the case study was a high fine for school, decreasing their budget and hurting the quality of education for pupils. The financial regulator supervises commercial parties and these supposedly receive less mercy from the public. Forbearance, or postponing a sanction may therefore be less accepted as well. The Health Care Inspectorate falls somewhere in between these two. Overall, this supports the idea that – in general – the public approves more of giving sanctions than offering a second chance.

6.3. Effect of transparency on trust

Table 2 shows indeed that there is an overall significant effect of the transparency treatment in our data ($F(4,1{,}531) = 7.91$, $p < 0.001$, partial eta-squared = 0.020). There is no significant effect of the type of agency trust, although there is an interaction effect present ($F(8,1{,}531) = 1.97$, $p = 0.046$). This indicates that the effect of transparency is different between agencies, and therefore, we will carry out subsequent analysis to look at the effects of

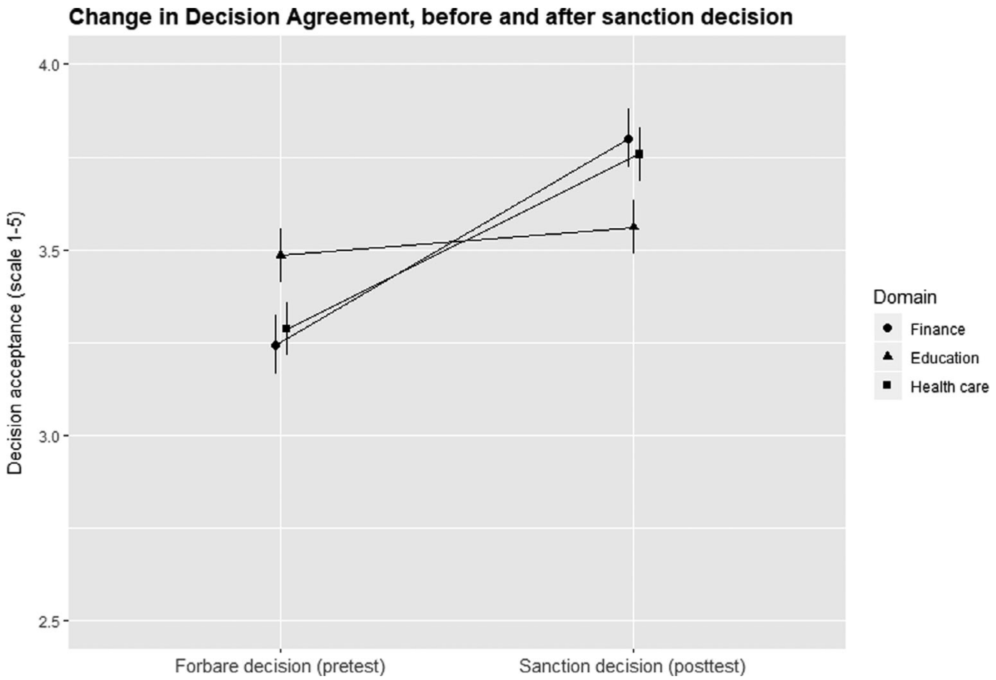

Figure 2 Change of decision acceptance in pretest (agency decides to postpone sanction) and post-test (agency decides to execute sanction). Estimated marginal means and confidence intervals (95%) are depicted.

transparency for each regulatory agency separately. First, since we did not formulate any specific predictions for the type of agency, we depict the estimated marginal means for the full sample.

Figure 3 indicates positive significant effects of the transparency treatments, compared to the control group. Furthermore, all transparency treatments have similar effects on trust. Subsequent planned contrasts – see "Analysis" Section for an explanation – show that there is a significant difference between the control group and the transparency treatment groups ($F(1,1,541) = 30.39$, $p < 0.001$), but none for the second (rationale) contrast which compared the rationale treatment group against the other treatment groups ($F(1,1,541) = 0.363$, $p = 0.547$). This confirms what Figure 3 visualized: a clear difference between transparency and control, yet none between the specific transparency treatments.

Since the ANOVA analysis showed an interaction effect between treatment and type of agency, we also calculated the estimated marginal means within each type of agency.

Figure 4 depicts the marginal means of the transparency treatments within the type of agency domain, and shows some interesting diverging patterns across each agency. First, there are no significant effects of the transparency treatments for the Authority Financial Markets (Finance), although the estimates are all in the expected, positive direction ($F(4,507) = 1.70$, $p = 143$). The overall significant effect of the transparency treatment seems to be mostly driven by the Education Inspectorate ($F(4,507) = 6.02$, $p < 0.001$) and Health Care Inspectorate ($F(4,517) = 4.19$, $p = 0.002$). Transparency in the health care domain brings out similar effects as found in the general analysis: an overall effect of transparency, yet little differentiation between various transparency types. However, in the domain of education, there does seem to be more differentiation between the various transparency treatments. When we use the planned contrast for rationale transparency – thus comparing the rationale

Table 2 ANOVA results of transparency and domain on trust in agency

	df	F	p	partial η^2
Transparency	4	7.91	<0.001	0.020
Type of agency	2	2.43	0.088	0.003
Transparency × type of agency	8	1.97	0.046	0.010
Residuals	1,531			

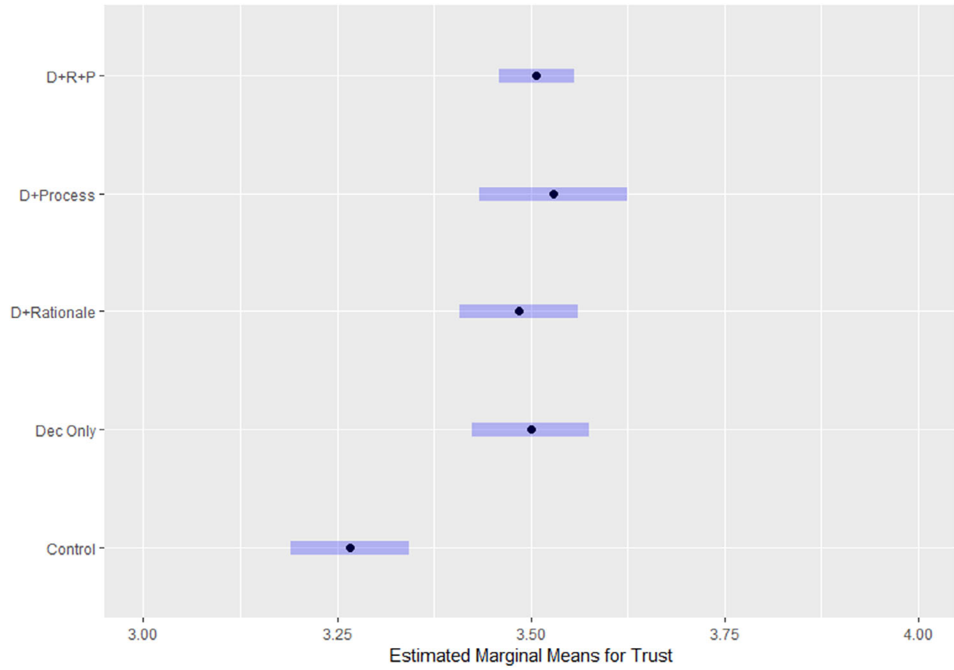

Figure 3 Estimated Marginal Means for full sample. X-axis displays estimated marginal means for trust in a regulatory agency. Confidence intervals estimated at 95%.

group with the other transparency treatments – we indeed find that rationale transparency results in significantly higher levels of trust than the other transparency groups ($F(1,507) = 5.89$, $p = 0.016$).

Overall, for all three regulators combined, the Transparency Hypothesis is supported by the data: decision information will lead to more citizen trust in a regulatory agency. Interestingly, we found no effect for one of the three regulatory agencies, namely the AFM. Furthermore, in the general analysis, we found no substantive differences between the transparency treatments, which refutes the Rationale Transparency Hypothesis. However, in

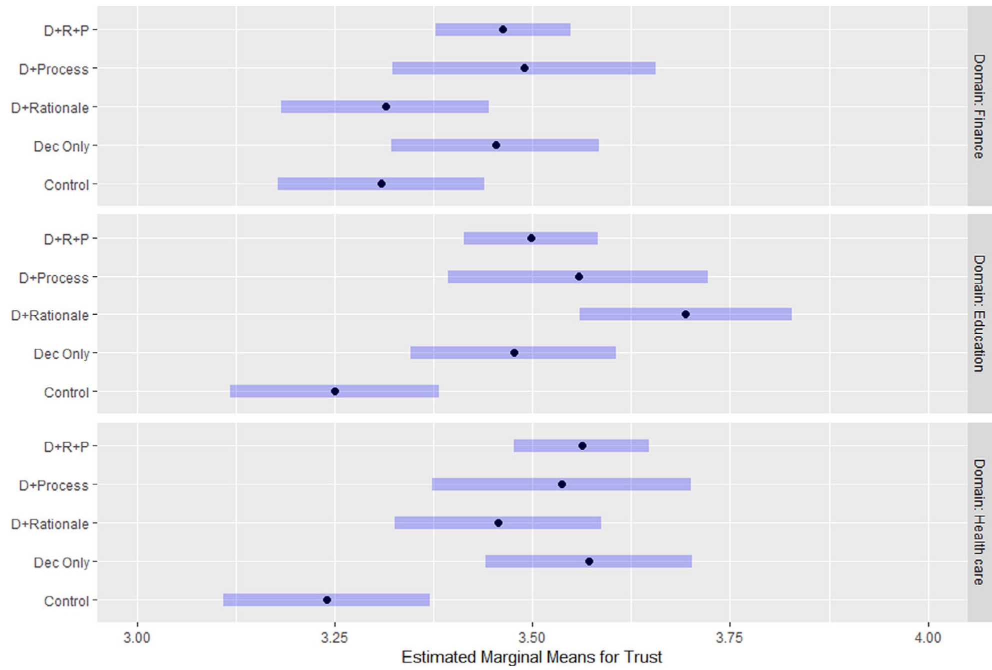

Figure 4 Estimated Marginal Means split by domain. X-axis displays estimated marginal means for trust in a regulatory agency. Confidence intervals estimated at 95%.

the domain of education, we do find evidence for a distinctly stronger effect of rationale transparency. Interestingly, the final decision (the sanction) of the agency in this domain received significantly less agreement among participants (see Fig. 1). Also, participants perceived the decision of the Education Inspectorate to be significantly more difficult than the decision of the Finance and Health Inspectorates ($F(2,1,233) = 6.85$, $p = 0.001$, $M_{\text{finance}} = 3.42$, $M_{\text{healthcare}} = 3.46$, and $M_{\text{education}} = 3.64$).[4] We explore this finding further in the "Discussion" section.

7. Discussion

To the best of our knowledge, this study represents the first empirical research into the consequences of decision transparency on *citizen* trust in regulatory agencies. Overall, our findings suggest that transparency about regulatory decisions can increase citizen trust in a regulatory agency, but that magnitude of the effect is moderated by characteristics that are specific to the regulatory domain.

First, our study indicates that transparency of regulatory enforcement decisions positively influences public trust in a regulator, supporting the Transparency Hypothesis. The support for the Transparency Hypothesis suggests that the psychological distance may be an important psychological mechanism behind the effect of transparency. We expected that providing decision transparency – of any kind – to trigger different evaluation criteria: concrete considerations about how a regulatory agency makes decisions instead of abstract considerations invoking broad stereotypes about what a regulatory agency does (cf. Idson & Mischel 2001; Smith & Trope 2006; Trope & Liberman 2010). At the same time, we discovered a limit to this effect, as we did not find a significant effect of transparency for the financial regulator. Perhaps, it is harder to decrease the psychological distance for regulatory agencies in a more abstract and technical domain such as finance. Therefore, we recommend to more specifically test this promising theory to explain trust in regulatory agencies and public organizations more broadly.

Second, we found limited support for the Rationale Transparency Hypothesis. We will elaborate on this by discussing a potential shortcoming of our experimental design and next by offering a substantive reflection of this finding. We found that rationale transparency did have a distinct effect on trust in the Education Inspectorate, yet such an effect was absent for the other agencies. One explanation for the lack of findings is that the experimental vignettes in the finance and health care domain did not trigger motivated scepticism among participants. This lack of scepticism might have led them to not care too much about the explanation of a decision (cf. Ditto & Lopez 1992). Indeed, most people already agreed with sanctioning an offender in the financial or health care domain. Hence, the decisions in these vignettes may not have been pronounced or controversial enough to motivate respondents to scrutinize the decision explanations more precisely. On the other hand, the decision to impose a high fine to a school was perceived as less acceptable and thus motivated more participants to more closely scrutinize the vignette. Eventually, this led to higher trust ratings when a decision's rationale was explained. Although this may be seen as a shortcoming in the design of the experiment – we should have designed vignettes with more controversial decisions in the financial and health care domain – this, too, yields substantive implications.

Indeed, as the vignettes were very similar across domains in terms of wording, structure and type of enforcement decision, our results indicate that something in the nature of a regulatory domain may affect the overall influence of decision transparency on citizen trust. For instance, citizens may be less patient with agencies that supervise private markets, such as financial services, than agencies that supervise a public domain, such as public schools. The nature of a decision when intervening in a private market is perhaps perceived to be less of a tradeoff and therefore people expect a tougher stance with heavy sanctions, instead of patience and forbearance. In contrast, education – in the Netherlands, at least – is typically a public domain; schools service a public interest and decisions in such public domain are more likely to touch upon politicized issues about equity and (in)justice. For instance, in our vignette the decision of the Education Inspectorate concerned pupil equality in education. Indeed, our data support this assertion as participants agreed much less with imposing a sanction to a school than to a nursery home or lender. Even more telling is that respondents perceived the decision of the Education Inspectorate as significantly more difficult compared with the decision of the Authority Financial Markets and the Health Care Inspectorate.

Another way of thinking about the difference we found between the financial regulator and the two inspectorates is their relative distance to ordinary citizens. The nature of the financial regulator's decisions is less related to the day-to-day problems of ordinary citizens than, for instance, the health and education inspectorate. These inspectorates are more in touch with citizen subjects, such as parents and patients, whereas regulatory agencies like the financial regulator are more in contact with professional stakeholders instead of ordinary citizens. Hence, being more aware of the financial regulator's decision might be less relevant for citizens.

Our findings provide fresh insights to the broader debate on regulatory enforcement styles and citizens perceptions of these styles. Although literature indicates that low public trust can lead to strict "by the book" enforcement (Vogel 1986; Bardach & Kagan 2002), the reverse effect of enforcement style on public trust, has hardly been considered in the literature. We find that more lenient styles are tolerated to a greater extent when it truly concerns a devilish dilemma about two equally important stakes, such as in the case of public schools violating norms about pupil equity. Being transparent about why a certain – lenient – approach was taken may be help to foster trust in how a regulatory agency handles difficult tradeoffs and why it sometimes decides to postpone sanctioning (Ayres & Braithwaite 1992).

Our finding that the nature of a regulatory domain may moderate the effect of specific transparency types is also important for the transparency literature. One central issue in this literature is uncovering the contextual conditions that moderate the effects of transparency on trust (Cucciniello *et al.* 2017). We empirically show that the regulatory context indeed affects the effect of regulatory transparency on public trust. This partly resonates with experimental findings by the Grimmelikhuijsen and Meijer (2014); see also De Fine Licht *et al.* 2014) who found that transparency in more contested policy areas has more pronounced negative effects on decision support and that rationale transparency works better than process-based transparency. In contrast, our findings show that especially a more contested decision tradeoff (i.e. education) rationale transparency has the most pronounced *positive* effect.

More broadly, an important implication of this finding is that transparency may be more effective as a trust-generating mechanism for organizations that are placed at arm's length from direct government and political control, such as regulatory agencies. Generally, it is though that people do not like political decisionmaking and being exposed to politicized decisionmaking and bargaining decreases trust (Hibbing & Theiss-Morse 2001; Porumbescu *et al.* 2017). Conversely, transparency in less-politicized organizations could have a relatively positive effect on trust and could even generate trust for some controversial decisions.

8. Conclusion

Overall, the most important contribution of this article is that we found evidence that decision transparency in general has a positive effect on citizen trust in regulatory agencies. That being said, the effect of transparency is not unambiguously positive as our results indicate that the nature of the regulatory domain attenuates or strengthens the effect of decision transparency. Still the positive effects we found in the regulatory domain are in contrast with some of the more negative findings from other, more inherently political domains (e.g. De Fine Licht 2011; Porumbescu 2015; Grimmelikhuijsen *et al.* 2017). We may need to rethink these more critical lines and more systematically test contextual elements where decision transparency increases trust, and where it does not.

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Endnotes

1 This is similar to the concept of accountability when it is understood as a relational concept in which an agency "renders account" of its decisions to an external forum. Rendering account, then, can be understood as informing, explaining and justifying one's actions (Bovens 2007), which can be used by regulatory agencies to construct and sustain their legitimacy (Black 2008). The difference between transparency and accountability is debated and not always straightforward, yet most commonly they might be conceptualized as "matching parts" (see, for instance, Hood 2010). For instance, transparency

does not necessarily require a clearly defined account or, but releasing information that justifies regulatory decisions does play an important role in an accountability relation between an actor and a forum (Bovens 2007; Black 2008).

2 We thank one of the reviewers for pointing out this interesting example.

3 The complete experimental materials and questionnaire can be found in the Appendix S1.

4 We asked participants to what extent they agreed with the following item: "the regulatory agency had to consider a difficult trade-off between the interests of the organization on the one hand and the interests of citizens on the other hand."

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Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1. Experimental materials (translated to English)