

**PUBLIC SERVICE MOTIVATION AND PROSOCIAL RULE-
BREAKING**

**An international vignettes study in Belgium, Germany, and the
Netherlands**

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BIOGRAPHIC STATEMENTS

Kristina S. Weißmüller (corresponding author) is Postdoc Researcher and Lecturer at KPM, Universität Bern, specialized in experimental research methods. Her research focuses on public sector corruption, PSM, and the psychological effects of ‘publicness’ on behavior – e.g., regarding risk behavior, leadership, and negotiation in PPPs.

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ABSTRACT

We theorize that people with high Public Service Motivation (PSM) are especially prone to engage in prosocial rule-breaking (PSRB) behavior, which ultimately leads to discriminatory practices, particularly for clients associated with positive affect. We conduct an original vignette study in three countries (Belgium, Germany, and the Netherlands) with 928 observations in total. Our findings provide tentative behavioral evidence on a linear relationship between PSM and the likelihood of PSRB and a strong positive association with client likeability, which is an asymmetric relationship: Negative affect cues have a larger negative effect than positive affect cues have a positive effect on PSRB. Although our results vary across the three country studies regarding the effects of PSM, overall, the results imply that high-PSM individuals have a tendency to being more likely to engage in PSRB and that clients who are perceived as more favorable will receive a less strict application of bureaucratic rules compared to less favorable clients.

Keywords: Prosocial Rule-Breaking, Public Service Motivation, Risk behavior, Multi-site design, Administrative behavior

INTRODUCTION

Public Service Motivation (PSM) is a widely studied concept in public administration, with the central claim that high-PSM people tend to behave differently vis-à-vis their low-PSM counterparts. For instance, Esteve, Urbig, van Witteloostuijn, and Boyne (2016) reveal in an unconditional public goods game experiment that high-PSM participants contribute more to a public investment than their low-PSM colleagues. While PSM has many positive effects, scholars have begun to explore the potential dark side of PSM (Van Loon, Vandenabeele, and Leisink, 2015; Bellé and Cantarelli, 2017; Jensen, Andersen, and Holten, 2017; Schott and Ritz, 2018). In this article, we contribute to this growing area of study by arguing that people with higher levels of PSM are more likely to engage in discriminatory prosocial rule-breaking behavior (PSRB) than their low-PSM counterparts. High-PSM individuals are assumed to be driven by the intrinsic motivation to help other people (van Witteloostuijn, Esteve, and Boyne, 2017). But that desire to help could be misapplied in a way that challenges public values; we argue that high-PSM individuals reveal a higher tendency than their low-PSM counterparts to break the rules in favor of citizens they believe need and deserve help and support.

We report evidence from a multi-site, three-country, between-subject randomized vignette-based quasi-experiment. The quasi-experiment was conducted at universities in Belgium ($n = 220$), Germany ($n = 211$), and the Netherlands ($n = 193$), adding a complementary questionnaire to measure PSM. Our design is a quasi-experiment, because PSM (our central independent variable) is very difficult – if at all – to manipulate experimentally, and thus cannot be designed as a randomized treatment. The three treatments involve vignettes that differ in the information affect cues about the client in the form of either neutral, adverse, or compassionate stimuli. This article presents findings from three studies, replicating a novel quasi-experiment in three countries, examining the information-conditional impact of PSM on the likelihood to engage in PSRB.

This research design comes with a few crucial methodological advantages. First, we employ an experimental design, following pleas by van Witteloostuijn (2015) and Walker, James, and Brewer (2017), to identify treatment-related causal relationships (of affect). Moreover, as argued by van Witteloostuijn (2015), we add a survey-based measure in the context of a quasi-experimental design for the purpose of a correlational analysis of the impact of a key respondent characteristic (i.e., PSM). Second, in line with Landman (2008) and Walker et al. (2017), we conduct a comparative multi-country study to analyze differences and similarities across culture-specific settings. Third, by running the quasi-experiment in three countries, this research responds to the recent pleas of van Witteloostuijn (2016), Walker et al. (2017), Walker, Brewer, Lee, Petrovsky, and van Witteloostuijn (2018), and Vandenabeele, Ritz, and Neumann (2018) to conduct replication studies, reflecting on generalizability and boundary conditions.

THEORY

Public Service Motivation and Prosocial Rule-breaking

The principle of non-discrimination among citizens and clients is a core foundation of the public sector. However, reality in public organizations often looks different. Tummers, Bekkers, Vink, and Musheno (2015) argue prioritizing clients is a widely-used strategy among street-level bureaucrats to cope with increasing job demands in modern bureaucracies. By “giving certain clients more time, resources, or energy” (Tummers et al. 2015, p. 1108), bureaucrats make use of their *de facto* discretion to deal with the challenges of public service delivery. The consequence is that some clients are prioritized to the disadvantage of others, who will not be given this extra time possibly because bureaucrats might feel more emotionally detached from these individuals. Facing such trade-offs, Tummers et al. (2015) argue that bureaucrats follow two different coping strategies.

On the one hand, they can decide to move *toward* the client. This triggers positive, proactive, and client-centered behavior, linking neatly with selfless social behavior. This includes rule-bending and rule-breaking to meet the client's demand, as well as discretion in prioritizing. On the other hand, bureaucrats might move *against* the client by "sticking to rules in an inflexible way that may go against the client's demands" in a way that borders on hostility (Tummers et al. 2015, p. 1108). Moving either toward or against the client is associated with risk since both strategies are discriminatory, threatening the fundamental bureaucratic principle of equity (Stone, 2002). This article's central claim is that Public Service Motivation (PSM) plays a key role in co-determining rule-breaking or rule-obeying behavior.

PSM is defined as "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations" (Perry and Wise, 1990, p. 368). The central idea of PSM scholarship is that high-PSM people feel attracted to the public sector because employment as a civil servant provides the opportunity to do meaningful work for the sake of (selfless) societal benefit (Perry, Hondeghem, and Wise, 2010). Research by Oberfield (2012) and Vogel and Kroll (2016) finds that an individual's PSM is relatively stable over time, making this a very important concept indeed to understand individuals' motivation in working for public sector organizations. PSM research largely argues that high-PSM people are more likely to be attracted to working in the public sector (Wright and Christensen, 2010).

When examining PSM's underlying dimensions, PSM actually incorporates very distinct conceptual ideas. PSM comprises at least four sub-dimensions – compassion (COM), self-sacrifice (SS), commitment to the public interest (CPI), and attraction to policy-making (APM) – two of which directly relate to acting selflessly in the interest of other people (Kim, 2008; Vandenabeele, 2008). PSM is also positively related with individual and organizational performance (Alonso and Lewis, 2001; Bellé and Cantarelli, 2012; Ritz, Brewer, and Neumann, 2016). Yet, Perry and Wise (1990) already noted that high PSM might potentially have

negative effects for bureaucratic organizations. Research about these dark sides of PSM is fairly limited (e.g., Schott and Ritz, 2018), and empirical evidence is even scarcer, despite some explicit calls (Steen and Rutgers, 2011). For instance, PSM is reported to positively correlate with burnout and job dissatisfaction (Van Loon, Vandenabeele, and Leisink, 2015), absenteeism (Koumenta, 2015), and over-attachment leading to adverse presentism (Jensen, Andersen, and Holten, 2017).

Another potential downside of PSM is a higher likelihood of prosocial rule-breaking. Rule-breaking can be characterized as ‘institutional deviation:’ individuals deviate from the behavior stipulated by implicit and/or explicit institutional rules (Elert and Henrekson, 2017). Often, the argument is that employees violate such rules in order to serve their own monetary or hedonic self-interest at the expense of others and/or their organizations. This rule-breaking behavior is primarily considered as unethical and self-oriented because its goal is to serve one’s own self-interest at the expense of public interest (Arend, 2016; Griffin and Lopez, 2005; Hodson, Martin, Lopez, and Roscigno, 2012; Robinson and Bennett, 1995). The literature defines these forms of rule-breaking as *pro-self* or *anti-social* (Nogami and Takai, 2008).

Most studies stress the negative consequences of rule-breaking. However, rule-breaking can also function as a remedy if the rules are dysfunctional (Vadera, Pratt, and Mishra, 2013), and rule-breaking can also be *prosocial* instead of *pro-self* when the primary intention is to help others (Morrison, 2006). Prosocial rule-breaking (PSRB) is defined as “any instance where an employee intentionally violates a formal organizational policy, regulation or prohibition with the primary intention of promoting the welfare of the organization or one of its stakeholders” (Morrison, 2006, p. 6). Conceptually, the likelihood of PSRB is related to both the organizational circumstances and to the motives of the individual holding the discretion to potentially break the rules, as well as the characteristics of the client who would potentially benefit should the individual decide to break the rules. Morrison (2006) identifies

three central motives of PSRB: rule-breaking to (a) facilitate work performance, (b) help another member of the organization, and (c) provide good customer service. Her vignette study shows that participants are more likely to engage in PSRB if the job is characterized by high autonomy (i.e., if discretion exists) and if other employees have engaged in PSRB in the past. Recent empirical research on prosocial rule-bending by Borry (2017) using a large sample of US civil servants supports Morrison's (2006) concept that prosocial non-adherence to bureaucratic rules is strongly related to individuals' perception that rule-breaking is in the organization's and their team's best interest. A recent study by Fleming (2019) finds empirical support for these motives and work environment-related antecedents of PSRB, with the motive of better assisting the client being the most influential factor for engaging in PSRB.

Work characteristics such as autonomy, team and leaders' behavior (Fleming, 2019), and an organization's ethical climate (Borry and Henderson, 2019), but also personal character traits such as nonconformity (DeHart-Davis, 2007) and risk propensity (Borry and Henderson, 2019; DeHart-Davis, 2007; Morrison, 2006), impact PSRB in the sense that risk-loving individuals are more likely to engage in PSRB, and working with a team in which rule-breaking is a socially acceptable and recurring phenomenon promotes PSRB (Fleming, 2019; Parks, Ma, and Gallagher, 2010). Ethical motivations related to considerations regarding the characteristics and needs of a particular client as well as organizational ethical norms play a major role in explaining rule-bending and rule-breaking for prosocial reasons (Borry, 2017; Vardaman, Gondo, and Allen, 2014). Ambrose, Taylor, and Hess (2015) as well as Borry (2017) further conceptualize PSRB antecedents, viewing PSRB as a deontic reaction to an organizations' unfair policies toward customers. They propose that the likelihood of PSRB increases with organic workgroup structures and supervisor support for PSRB – i.e., an ethical climate that supports breaking the rules for the benefit of the greater goal of the service performed.

In modern public bureaucracies, examples of PSRB are shortcutting lengthy bureaucratic procedures to the benefit of a client, with no direct and functional benefit for the civil servant taking the shortcut (Dahling, Chau, Mayer, and Gregory, 2010; Morrison, 2006). Seemingly benevolent, PSRB can be a fundamental problem for public bureaucracies as the core equity principle is violated, and because the hierarchical logic of top-down rules in combination with policies set by law and formal regulation is undermined (Zhou, 1993). This violation is deliberate, the primary motive being the intent to help the organization, clients and/or the stakeholders in an honorable fashion (Dahling et al., 2010; Morrison, 2006). However, such deliberate PSRB actively undermines the core principles of public bureaucracies (Mills and Gerth, 1970; Udy, 1959).

How may PSM be related to PSRB? We argue that high-PSM people are more likely to break the rules for noble causes, *ceteris paribus*. The discriminatory effect of high PSM is supported by Andersen and Serritzlew (2012), revealing that high-PSM public service providers are more likely to deviate from profit-maximizing strategies in order to help clients they regard as needy. They report that professionalism in the sense of rule-abiding behavior on the job is negatively correlated with user orientation and compassion with the client, particularly for individuals with high PSM. Consequently, we have:

H1: The relationship between PSM and the likelihood of PSRB is positive.

However, this main PSM effect might well be associated with directional ambiguity as the likelihood of engaging in PSRB to the benefit of a client is likely to be influenced by this client's individual attributes. The following two sections explore this theory further.

Client information cues

PSRB is a risky endeavor because there is a real threat that breaking the rules will be noticed and punished higher up in the hierarchy. PSRB is also associated with uncertainty

because the likelihood and magnitude of potential adverse consequences for both the rule-breaker and the organization are unknown and incalculable. If odds cannot be calculated, people (subconsciously) rely on heuristics to cope with the motivational conflict between the wish to help a client and the potential of experiencing adverse consequences from doing so. Heuristics are cognitive rules of thumb activated by internal and external cues, and that help making “good” decisions under uncertainty by reducing complexity (Gigerenzer and Goldstein, 1996). External cues could be, for instance, the perception of organizational mistreatment of customers (Ambrose et al., 2015) or specific client characteristics triggering sympathy toward this client, increasing the will to help them (Keiser, 2010). Experimental research on decision-making shows that such feelings play an essential role in priming behavior by substantially influencing attitudes and preferences (Kahneman, 2003; Thaler and Sunstein, 2008).

Public servants facing clients with problems are challenged with the daunting task of trying to match rules with the dire needs of clients. Street-level bureaucrats will oftentimes be emotionally affected by their clients’ fate. Buurman, Delfgaauw, Dur, and Bossche (2012) found that caseworkers who were weakly altruistic toward clients preferred to not allocate help to needy but unwilling clients, rather than sanctioning them. These findings resonate with Jilke and Tummers (2018), who found teachers to be more willing to help students who worked hard, rather than those who were merely successful according to the bureaucratic success criteria.

Scott (1997) shows that bureaucrats’ use of their discretion is strongly influenced by the attitudes they form on the basis of client characteristics. He argues client characteristics function as behavioral cues that are much stronger than the individual decision-maker’s attitudes or traits, revealing that the level of (monetary) assistance provided to a client of social services is directly related to the level of compassion held by the bureaucrat toward that client. This echoes earlier findings by Goodsell (1980, 1981), who provides evidence that clients who gave cause for compassion because they exhibited greater need receive proportionally greater

benefits. An experimental study by Weimann (1982) indicates that bureaucrats can be easily swayed by clients who use ‘altruistic’ appeals that result in positive affect toward the client.

Affect can be positive in the form of having sympathy for another person, or negative in the form of disliking another person (Eisenberg, 2000), with affect moderating behavior (Fazio, 2001; Oikawa, Aarts, and Oikawa, 2011). We assume that positive affect is directly linked with a higher likelihood of PSRB. Conducting a series of laboratory experiments, Calvet Christian and Alm (2014) report that people who are very socially motivated (i.e., being more than averagely concerned with other peoples’ wellbeing) as expressed by these other peoples’ emotional state, are more likely to be tax compliant. Gino and Pierce (2009, 2010) show that clerks are more likely to give discounts to customers if they feel sympathy toward these customers. This suggests:

H2a: The likelihood of PSRB increases with positive affect toward a client.

Client discrimination can also lead to adverse consequences for clients who are perceived as less likeable or needy (Goodsell, 1980, 1981; Scott, 1997; Weimann, 1982). However, recent empirical research by Borry and Henderson (2019) shows that decision-makers’ general level of empathy is not unconditionally related with a higher likelihood of engaging in PSRB, but rather that PSRB occurs if breaking the rules for a client is considered to be in line with the overall goal of the organization (Borry, 2017) – i.e., to provide ‘good’ civil service to ‘good’ citizens in the case of public street-level bureaucracies, which might lead to a lower likelihood of PSRB for clients who are perceived as less likable, needy, or collaborative (Križ and Skivenes, 2014; van Oorschot, 2000; Tummers, 2017).

This phenomenon is especially evident when street-level bureaucrats have to make decisions without face-to-face contact with clients. For instance, Keiser (2010) shows that street-level bureaucrats make eligibility decisions in social welfare programs based on abstract

(and factually irrelevant) informational cues about the client (whom they have never met) to form heuristic attitudes about perceived deservingness. Using a dataset on a social security disability program from the US, Keiser (2010) reveals that such abstract negative cues cause bureaucrats to arbitrarily make an assumption about the honesty of the client, which decreases the likelihood of generously applying the eligibility rules. These findings are supported by recent research by Jilke and Tummers (2018). Having a negative attitude toward or impression of the client also decreases the priority given to these client cases. This gives:

H2b: The likelihood of PSRB decreases with negative affect toward a client.

High PSM and positive affect toward a client

Having discussed the direct role of PSM and of client information cues on the likelihood of engaging in PSRB, we return to the idea that the main PSM effect might well be associated with directional ambiguity depending on the client information cues. How may PSM influence the relation of affect toward a client and PSRB besides its direct effect on PSRB? The literature suggests high-PSM individuals' "commitment to public service may influence rule bending by inspiring employees to go above and beyond the call of duty – including bending rules – in order to further the public interest" DeHart-Davis (2007: 895). Furthermore, the strong element of compassion present in high-PSM people suggests that they are more likely to break the rules for noble causes than individuals with lower levels of PSM, *ceteris paribus*. In the context of client deservingness, the PSM-dimension of compassion may lead to conflicts with the principle of neutrality if high-PSM individuals find themselves asked to conduct strict bureaucratic rules and procedures that appear to work against their clients' best interest (Maesschalck, Wal, & Huberts, 2008), because this demand violates high-PSM individuals' pro-social normative core motive to help others. This psychological conflict is particularly strong in higher-PSM vis-à-vis lower-PSM individuals, and the comparatively

higher salience of clients' needs eventually provokes a higher likelihood of PSRB for high-PSM individuals (Higgins, 1989).

This amplifying effect of high PSM on the relationship between client information cues and the likelihood of engaging in PSRB is supported by prior empirical research by Andersen and Serritzlew (2012), as well as by recent findings by Borry (2017), Jilke and Tummers (2018), and Borry and Henderson (2019) showing that public service providers with high PSM are particularly likely to break rules in order to help clients in need out of a compassionate spirit. This provides:

H3: The relationship between positive affect toward a client and the likelihood of PSRB is stronger for individuals with higher PSM.

METHODS

Multi-national vignette study

This study was conducted between April and August 2017 with three convenience samples in Belgium, Germany, and the Netherlands. Potential participants were invited through an e-mail distributed among undergraduate (Bachelor) and graduate (Master) students in public and for-profit management degree programs, as well as other social sciences at four large universities. Participation was voluntary and incentivized by the chance of winning one of four substantial gift certificates (1 x €250, 1 x €150, and 2 x €50) from a well-known online retailer. Table 1 presents the socio-demographic characteristics of respondents.

[Insert Table 1 about here]

Survey and vignette stimuli were carefully designed by an international Belgian-Dutch-German research team to make sure that the treatment was equally reliable and logical in the specific context of civil services for all three countries. Scales validated in prior research were

translated with due diligence from English into German and Dutch in a triple-blind procedure. Adequate and rigorous pre-tests were conducted prior to launching the vignettes (Finch, 1987; Wilson and While, 1998). In the prospect of small to medium-sized effects (Cohen's $d \leq 0.3$; power = 0.8; $\alpha = 0.05$), samples per country should at least comprise $n = 176$ respondents (Ellis, 2010). The final datasets only include complete responses since raw data were strictly pre-stratified for missing values and repetitive response patterns.

Quasi-experimental design and vignette treatments

Vignettes are narrative scenarios that invite participants to imagine a specific scenario. Participants are asked to express how they would behave if they were in the said scenario. Vignettes use textual descriptions that are more elaborate than most written stimuli used in other experimental setups to create scenarios that are highly relevant and realistic, increasing the ecological reliability and validity of measured responses (Hughes and Huby, 2004). Vignettes are argued to be very powerful instruments in triggering context-dependent behavior with high internal and external validity under highly controlled experimental conditions, allowing for systematic variation of treatments in a very economical manner (Aguines and Bradley, 2014).

Our study comprises four parts (Appendix A.1). First, participants were introduced to the study. Second, we administered a short socio-demographic questionnaire to measure control variables regarding age, gender, nationality, and field of study. Third, we measured our key independent variable (PSM) and respondents' risk preference as a potential covariate using standardized measures developed in prior work: Kim's (2011) PSM scale and Madden, Petry, and Johnson's (2009) Probability Discounting Questionnaire (PDQ). Kim's (2011) scale consists of 12 Likert-type statement items, with the standard quadruple of underlying dimensions (COM, SS, APM, and CPI), and answer values from 1 (= 'absolutely disagree') to

7 (= ‘absolutely agree’). We create the compound variable PSM by calculating the geometric mean of all 12 items.

Madden et al.’s (2009) PDQ is based on 30 dyadic trade-off tasks between one relatively smaller but fixed pay-out (e.g., €20 for sure) and one higher but risky pay-out (e.g., 67% chance to win €80 and 33% chance to win €0). We use Weißmüller’s (2016) algorithm to estimate a risk discounting parameter (h) from respondents’ pattern of choice and preference reversals across this set of 30 items. Pay-outs are hypothetical, but Madden et al.’s (2009) measure is very reliable in predicting preferences and real choice under risk (Green and Myerson, 2004), whilst being very robust against conscious manipulation. The parameter is exponential and is centralized by taking its logarithm. Since higher discounting parameter values indicate that respondents devalue risky options more strongly, individuals with $\ln(h) > 0$ are risk-averse.

Fourth, respondents were randomly assigned to two out of three vignette treatments to inhibit order effects, with randomization offering the opportunity for associative inference (Meyer, van Witteloostuijn, and Beugelsdijk, 2017). These vignettes are designed to represent a typical scenario for street-level bureaucrats. Respondents are put into the active role of a civil servant handling applications for social housing. In a face-to-face meeting, clients ask to speed up this process by prioritizing their case, which is not in accordance with the organization’s prescribed rules. The manipulation is through the (lack of) specific information given about the client’s background.

The first vignette describes a male client with a very negative criminal track-record, who is reluctant to collaborate (‘negative’ treatment). The second vignette serves as a control scenario, providing no specific information about the client except that he is male (‘neutral’ treatment). The third vignette presents a male disabled single-parent in need beyond his own

fault ('positive' treatment). In each of the scenarios, respondents are reminded that speeding up individual applications would clearly conflict with the organization's internal codes of conduct. The vignettes make very clear that the civil servant will not benefit personally in any way from prioritizing the client's case. The cases are based on real application procedures in actual institutions of public welfare services in Belgium, Germany, and the Netherlands. The ecological validity and perceived realism of these treatments was corroborated by both an expert panel, as suggested by Gould (1996), and by pre-testing. Between and within-group *t*-testing indicate that treatment balance was achieved for all three country samples.

PSM is a feature of an individual that we measured through a survey scale. We enter this measure into regressions for what are essentially correlational analyses, as PSM is not randomly attributed in a pure "treatment fashion" across our study participants. Our other central variable is affect toward the client, which we could randomly vary across study participants through the experimental vignette design. This implies that we are able to engage with causal inference regarding this second variable. Together, this implies that we have a quasi-experimental design (van Witteloostuijn, 2015), with a non-malleable correlational leg (PSM) and a treatable causal leg (affect).

Prosocial rule-breaking

We developed a three-item scale that serves as a measure of our main dependent variable – prosocial rule-breaking intent (*PSRB Intent*). Respondents were asked to indicate how likely they were to break the rules for the client (*likelihood*), how justified breaking the rules was (*justification*), and how comfortable they would feel in doing so (*affect*). All items are Likert-type questions, with score options from 1 (= 'absolutely disagree') to 5 (= 'absolutely agree'). The three items were standardized and mean sum-scored.

In order to assess the reliability of our dependent variable *PSRB Intent* as a three-item construct, a confirmatory factor analysis based on structural equation modeling with maximum likelihood estimation was conducted using the pooled data split by study sample. All three items (*likelihood*, *justification*, and *affect*) were loaded onto their intended construct. Taking Hu and Bentler's (1999) guidelines, the results for each study sample show a good fit with the data. The mean Chi-square to degrees of freedom ratio was 385.49 (Belgium: $X^2(df) = 270.93$ (3); Germany: $X^2(df) = 414.80$ (3); the Netherlands: $X^2(df) = 412.18$ (3)), indicating a very good fit with the data (Schermelleh-Engel, Moosbrugger, Müller, and others, 2003). The root-mean error of approximation (RMSEA) was 0.000 for all country samples, the comparative fit and the Tucker Lewis indices (CFI = 0.999; TLI = 0.999) were both even above the strict benchmark of 0.95, as suggested by Hu and Bentler (1999). The standardized root mean squared residual was below 0.001, which is well below the 0.08 cut-off level.

We estimate a structural equation model in which *likelihood*, *justification*, and *affect* load onto a single underlying factor: i.e., PSRB. This resulted in a well-fitting, robust, and reliable model ($X^2(3) = 1,156.46$, RMSEA = 0.000, CFI = 1.000, TLI = 1.000, SRMR = 0.000). In order to test the robustness of this model, alternative models were tested, all resulting in significantly worse model fit. Finally, all factor loadings ranged between 0.67 to 0.86 in each treatment scenario, which is above the commonly used threshold of 0.60 (MacCallum, Widaman, Zhang, and Hong, 1999). Next, average variance extracted (AVE) values were calculated for the latent factor. In each country sample, all were above the 0.50 threshold, ranging between 0.57 and 0.68 (pooled data: AVE = 0.641). This provides evidence of very good convergent validity (Fornell and Larcker, 1981).

As an additional reliability and internal consistency check, we also conducted exploratory factor analyses (varimax rotated), the results of which are reported in Appendix A.3. Since five-point Likert scales are not continuous, the data were first transformed into a

polychoric matrix, upon which factor analyses by country sample and treatment were performed. These analyses, too, confirm high internal validity and robustness against country effects.

Shapiro-Wilk testing shows that *PSRB Intent* is normally distributed across all treatment groups (Vignette 1: $W(311) = 0.965, p = 0.000$; Vignette 2: $W(307) = 0.985, p = 0.003$; Vignette 3: $W(310) = 0.989, p = 0.016$). As a reliability check, we added a fourth item (realism), which is a four-point scale asking participants to assess each vignette from being ‘very unrealistic’ (1) to ‘very realistic’ (4), as we can expect that a respondent will take the treatment particularly seriously if perceived as realistic.

Model estimation

All participants responded to two vignettes that were randomly assigned and drawn randomly from the set of three different vignettes. Appendix A.4 provides extensive post-hoc analyses to control for order and spill-over effects, to the extent that our data allow us to do so, showing that procedure-based order and spill-over effects are unlikely to be an important issue. We run linear regression analyses with heteroscedasticity-robust standard errors clustered at the individual respondent. Model I only contains the control variables. We specify our direct effects model (Model II) as

$$PSRB\ Intent = \beta_1 PSM + \beta_{2,3} Treatment + \beta_4 Risk\ Aversion + \beta_5 Age + \beta_6 Female + \beta_{7,8} Country + \varepsilon_i$$

Adding interaction effects to test H3, Model III is specified as

$$PSRB\ Intent = \beta_1 PSM + \beta_{2,3} Treatment + \beta_4 PSM \times negative\ Treatment + \beta_5 PSM \times positive\ Treatment + \beta_6 Risk\ Aversion + \beta_7 Age + \beta_8 Female + \beta_{9,10} Country + \varepsilon_i.$$

We use the neutral vignette scenario as reference category. We first analyze each country study individually and then pool the data for a combined sample in which the German sample arbitrarily serves as the reference category (which we therefore take as our Study 1).

Appendix A.2 includes the correlation matrix between all dependent and control variables, as well as respective reliabilities at the five per cent level. All analyses have been exploratorily conducted with *PSM*'s underlying dimensions as well (available upon request), which decreased the explanatory power in comparison to *PSM* as the compound multi-dimensional construct, as originally conceptualized by Perry and Wise (1990). Hence, we decided to follow the many recent examples (e.g., Vandenabeele et al. (2018), Van Loon et al. (2015), and Schott and Ritz (2018)) that all argue in favor of a unidimensional conception of *PSM*.

FINDINGS

Study 1

The data were collected through a standing online panel of a large German university. We have $n = 211$ respondents who are, on average, 25.8 ($SD = 4.8$) years old. The sample is slightly dominated by female participants (54.9%), consisting of graduate (Master) students of various social sciences, predominantly of public administration (19.7%), business administration (19.2%), and other advanced economic, political and socio-economic studies (47.7%). Respondents have no prior work experience, score high on *PSM* ($M = 5.31$, $SD = 0.97$), and are rather risk averse ($M = 0.62$, $SD = 0.60$).

We find strong discriminatory behavior. Two-tailed *t*-testing shows that different client descriptions in the vignette treatments create significant variance in *PSRB Intent*. Table 2 presents the descriptive analysis of the treatment effects on *PSRB Intent*.

[Insert Table 2 about here]

Tested against the neutral treatment (Vignette 2: $M = 2.64$, $SD = 0.87$), respondents are less willing to break the rules when confronted with a less amiable client ($M = 1.79$, $SD = 0.77$; $t = -6.98$, $p = 0.000$), but much more willing to do so for an amiable client ($M = 3.17$, $SD = 0.89$; $t = 4.19$, $p = 0.000$). The direction of this treatment effect is strictly transitive, indicating a causal relation between affect toward client and likelihood of rule-breaking. This effect is subject to a negativity bias since effect sizes (Cohen's d) indicate that the negative treatment ($d = -1.026$) has a stronger effect on inhibiting *PSRB Intent* than the positive treatment ($d = 0.611$) has on increasing *PSRB Intent* (Figure 1).

[Insert Figure 1 about here]

With linear regression (Table 3), we find that the main association of *PSM* with *PSRB Intent* is not statistically significant ($\beta = -0.05$, $p = 0.330$), providing no support for *H1* within Study 1's sample. However, we find a strong and significant linear treatment effect of client cues on *PSRB Intent* (negative treatment: $\beta = -0.67$, $p = 0.000$; positive treatment: $\beta = 0.42$, $p = 0.000$), supporting *H2a* and *H2b*. The model is well specified [$F(6, 192) = 16.86$, $p = 0.000$] and explains a large share of variance ($adj. R^2 = 0.216$).

[Insert Table 3 about here]

Figure 2 facilitates the comparison of the regression coefficient estimates across all three studies as well as the pooled data.

[Insert Figure 2 about here]

We do not find a significant gender estimate ($\beta = 0.13$, $p = 0.225$), and only a small but significant age effect ($\beta = 0.04$, $p = 0.000$). As expected, risk aversion is strongly negatively and significantly related with *PSRB Intent* ($\beta = -0.44$, $p = 0.000$).

Investigating the interaction effect of *PSM* and client characteristics on *PSRB Intent* (*H3*) by means of moderation analysis (Study 1's third column in Table 3) reveals a robust interaction effect between *PSM* and the negative treatment ($\beta = -0.13, p = 0.000$), as well as a smaller significant interaction effect between *PSM* and the positive treatment ($\beta = 0.10, p = 0.000$). Plotting the quadratic fixed effects of *PSRB Intent* by *PSM* and treatment (see Figure 3) shows that the interaction effect is only significant within a narrow range. Hence, the significant interaction effect in the regression models can only serve as tentative and conditional support for *H3*, at best.

[Insert Figure 3 about here]

Study 2

Data were collected at a Flemish university in Belgium, including $n = 220$ participants who predominantly study business administration (46.8%), industrial engineering and management (24.1%), and socioeconomics and economic policy (10.0%) on the undergraduate (Bachelor's) level. The sample is slightly dominated by female participants (52.1%). Respondents are younger ($M = 20.8$ years, $SD = 2.4$) than Study 1's, also have no prior work experience, score highly on *PSM* ($M = 5.50, SD = 0.86$) and are predominantly risk-averse ($M = 1.59, SD = 0.61$).

We find a linear, transitive and asymmetric treatment effect (positive treatment: $M = 2.83, SD = 0.80; t = 3.96, p = 0.000, d = 0.573$; vis-à-vis negative treatment: $M = 1.81, SD = 0.67; t = -5.55, p = 0.000, d = -0.804$) compared to the neutral treatment (Table 2 and Figure 1). Linear regression (Table 3 and Figure 2) gives a well-specified model [$F(6, 191) = 4.71, p = 0.000$], explaining a relatively smaller share of the variance ($adj. R^2 = 0.110$) compared with the data used in Study 1. In contrast to Study 1, we have a small positive and statistically significant relation between *PSM* and *PSRB Intent* ($\beta = 0.13, p = 0.027$), providing support for

H1. The regression estimates further support *H2a*, but not *H2b* (negative treatment: $\beta = -0.37$, $p = 0.000$; positive treatment: $\beta = 0.322$, $p = 0.002$). We do not find a significant association of individual risk preferences, age, or gender with *PSRB Intent*.

Similar to Study 1, Model III (Table 3) reveals a small but statistically significant interaction effect between *PSM* and the negative treatment ($\beta = -0.10$, $p = 0.000$), as well as a smaller significant interaction effect between *PSM* and the positive treatment ($\beta = 0.07$, $p = 0.000$). However, plotting the quadratic fixed effects of *PSM* on *PSRB Intent* by treatment (see lower panel of Figure 3) shows that this apparent moderation effect does not hold for Study 2's data, and is mostly driven by the strong treatment effect. Hence, *H3* is not supported.

Study 3

Data were collected at two universities in the Netherlands with $n = 193$ respondents who are, on average, 22.5 ($SD = 3.74$) years old, featuring an only slight overrepresentation of female respondents (50.7%). Participants are graduate (Master) students of a number of social sciences degree programs with no prior work experience, with the majority in business administration (36.1%) and economic policy (31.3%). They report, on average, high *PSM* ($M = 5.36$, $SD = 0.95$) and are rather risk averse ($M = 1.05$, $SD = 0.68$).

In line with Study 2, *PSM* is positively and significantly associated with *PSRB Intent* ($\beta = 0.10$, $p = 0.037$), providing support for *H1*. Regarding the effect of client-based information cues, the findings correspond with Studies 1 and 2. We observe linear and transitive, but asymmetric positive ($M = 2.73$, $SD = 0.87$; $t = 2.99$, $p = 0.003$, $d = 0.422$) and negative treatment effects ($M = 1.68$, $SD = 0.65$; $t = -6.93$, $p = 0.000$, $d = -0.966$) compared to the neutral treatment (Table 2 and Figure 1). Linear regression further substantiates this asymmetric treatment effect (Table 3 and Figure 2; $F(6, 198) = 8.82$, $p = 0.000$, $adj. R^2 = 0.150$), with a negative and significant relation between the negative treatment and *PSRB Intent*

($\beta = -0.41, p = 0.000$), and a significantly larger and positive relation between the positive treatment and *PSRB Intent* ($\beta = 0.47, p = 0.000$), providing support for *H2a* and *H2b*. Significant coefficients for gender, age, or risk preferences cannot be observed.

Regarding *H3*, Study 3 reveals a small but statistically significant interaction effect between *PSM* and the negative treatment ($\beta = -0.13, p = 0.000$), but no interaction between *PSM* and the positive treatment ($\beta = 0.03, p = 0.225$). The quadratic fixed effects plot (lower panel of Figure 3) reveals that the statistical significance of the *PSM* \times *negative* interaction is in fact driven by the strong direct negative treatment effect, and does not hold in graphical analysis. Hence, *H3* finds no support.

Pooled data

Clustered regression (Table 3 and Figure 2) with the pooled data with 928 observations substantiates the evidence regarding the treatment effect: Positive information cues have a strong direct positive effect on *PSRB Intent* ($\beta = 0.40, p = 0.000$), and negative treatment results in a complementary but asymmetrically smaller negative effect on *PSRB Intent* ($\beta = -0.47, p = 0.000$), providing further support for *H2a* and *H2b*. The model is well specified [$F(8, 619) = 20.28, p = 0.000$] and explains a substantial share of the variance (*adj. R*² = 0.157). However, a direct association between *PSM* and *PSRB Intent* ($\beta = 0.06, p = 0.080$) is not statistically reliable, thus not supporting *H1*.

Although regression analysis reveals a small but statistically significant interaction effect between *PSM* and the negative treatment ($\beta = -0.12, p = 0.000$), as well as a smaller equally significant interaction effect between *PSM* and the positive treatment ($\beta = 0.07, p = 0.000$), the quadratic fixed effects plot (see Figure 3, upper panel) reveals that the statistical significance and the numerical effect size is substantially driven by the data of Study 1 and

Study 2 plus all three studies' strong treatment effects. Consequently, the basically parallel slopes in Figure 3 (upper panel) show that *H3* is not supported.

DISCUSSION

We set out to investigate the relation between PSM and PSRB, taking into account the effect of affect toward the potential benefiter of PSRB in a civil service context. Based on theoretical arguments and existing empirical studies, we hypothesized that higher PSM will lead to a higher intent to break bureaucratic rules for prosocial reasons. We assumed that PSRB intent would be higher for clients who are perceived as more favorable (i.e., more needy and deserving) and that PSRB intent would be lower for clients presented with unfavorable characteristics. Both of these assumptions are confirmed. In contrast and although prior research related to PSM's dimensions of commitment and compassion suggested that high-PSM individuals might react more strongly to favorable client cues, the effect of PSM on PSRB is not consistent across our three studies.

The relation of PSM and the intention to engage in PSRB varies across our three country samples. In the German sample (Study 1), we find no significant effect of PSM on the intention to engage in PSRB, while the relation between PSM and PSRB intent is a statistically reliable positive direct effect in Study 2 (Belgium) and Study 3 (the Netherlands), meaning that individuals with higher levels of PSM were found to hold higher PSRB intent for these two countries. This finding resonates with prior empirical research on PSRB in street-level bureaucrats by Fleming (2019) and it matches with the conceptual model of a dark side of PSM by Schott and Ritz (2018), who proposed that high PSM facilitates the process of rationalizing deviant behavior by morally justifying it with a higher social or moral cause.

We expected that affective cues that present the client who would benefit from the decision-maker engaging in PSRB as amiable would lead to a higher likelihood of PSRB. This

assumption was supported in all three country studies. Positive cues about the client do, probably due to triggering a feeling of affective sympathy and deservingness, increase the likelihood of rule-breaking, which is in line with prior studies by Goodsell (1980), Goodsell (1981), Weimann (1982), Scott (1997), Gino and Pierce (2009), Gino and Pierce (2010), Andersen and Serritzlew (2012), Calvet Christian and Alm (2014), Tummers et al. (2015), and Jilke and Tummers (2018).

We hypothesized that unfavorable client cues would result in a relatively lower intention to engage in PSRB. In all three studies, negative information cues about the client decrease the likelihood of PSRB, resonating with prior research by Goodsell (1980), Goodsell (1981), Weimann (1982), Scott (1997), Keiser (2010), Tummers et al. (2015), and Jilke and Tummers (2018). Negative information cues, which are practically irrelevant for the application of bureaucratic rules, lead the way to strong discrimination of these clients against other clients perceived as more amiable. In our study, the cross-national consistency and the large effect sizes across all three replications underline the crucial influence of client affect cues on the likelihood of PSRB. This effect is asymmetric: Despite stimuli balancing and pretesting, the negative cues have a stronger negative effect than the positive cues have a positive effect in each of the three studies. This asymmetry relates to a psychological effect referred to as the negativity bias: People tend to ascribe stronger valence to negative events than to equally strong positive events. This effect is not uncommon in public administration and management research. Earlier studies by Lau (1985), Rozin and Royzman (2001), and Olsen (2015) showed that dissatisfaction generally has a larger negative impact than satisfaction has a positive effect. Lau (1985) points out that, under certain circumstances, this perceptual asymmetry can actually be a rational heuristic because negative events are perceived as more threatening, with their overall impact often being rapid and complex to grasp, hence creating higher uncertainty.

Dark horse

Surprisingly, comparing the response behavior by PSM and treatment reveals, in Study 1, that individuals with higher levels of PSM are even more inclined to punish unfavorable client cues more strongly than their peers with lower levels of PSM (Figure 3). Taken for itself, Study 1's results could be interpreted as a direct empirical response to recent theoretical appeals to investigate the dark sides of PSM (Bellé and Cantarelli, 2017; Schott and Ritz, 2018). However, consistent with Bolino and Grant's (2016) reasoning, Schott and Ritz (2018) proposed that high-PSM people were more likely to engage in PSRB specifically because they would find it easier to derive moral justification for their acts if they perceive that their rule-breaking serves a noble cause. While we do find that individuals in general are more likely to break the rule for amiable clients who might be perceived as more deserving of help, our Study 1's data indicates that high-PSM individuals in the German sample are particularly more likely to discriminate *against* the client if they were received as less amiable and, hence, less deserving, speaking to a different form of dark side not previously addressed in Schott and Ritz's (2018) review.

However, we want to point out that this intriguing finding does provide initial evidence only, and does not qualify for arbitrary generalization because this excessive negativity bias is not present in Study 2's and Study 3's data. Consequently, we interpret Study 1's asymmetric client discrimination as related to PSM, because it is a statistically significant and solid in effect size particularly for non-amiable clients. However, it is important to stress that this relation between client discrimination via rule-breaking and PSM might be strongly conditional, as it could be related to a number of country-specific differences – for instance, cultural norms that vary between Germany, on the one hand, and Belgium and the Netherlands, on the other hand. Since we are unable to further investigate this apparent connection between PSM, PSRB, and latent variables nested, for instance, in these countries' cultures, the discrimination effect with

the German sample calls loudly for future replications of our quasi-experiment in more countries to investigate this dark horse further.

We find that risk aversion is negatively correlated with the likelihood of PSRB, but only in Study 1. This result is in line with prior research by DeHart-Davis (2007) and Borry and Henderson (2019), who investigated the likelihood of PSRB within a sample of paramedics in public clinical care in the US. The country-specific differences between the samples – with Study 1 comprising respondents who are generally much more risk-affine vis-à-vis the other two samples with larger variance in risk preferences – indicates that any statistically significant association of risk aversion with prosocial rule-breaking might be conditional and only predictive for highly risk-affine individuals.

Bureaucratic paradox

Our samples are all three composed of young adults with above-average high levels of PSM and without job experience in bureaucracies. What may our results imply for these bureaucracies? At least since Weber (1922), equity is the core principle of a bureaucracy (Udy, 1959; Warwick, Meade, and Reed, 1975). An essential strength of a bureaucracy is assumed to be the non-discriminatory implementation of policy (Mills and Gerth, 1970). A bureaucracy is an organizational form well equipped to apply rules regardless of non-relevant attributes of those being ruled. In the words of Olsen (2006, p. 2 and p. 5), an ideal-type bureaucracy is a “formalized, hierarchical, specialized [bureau] with a clear functional division of labor and demarcation of jurisdiction, standardized, rule based, and impersonal,” populated with “bureaucrats [who] are responsible for following rules with regard to their office with dedication and integrity and for avoiding arbitrary action and action based on personal likes and dislikes.” The ideal-type bureaucracy is a non-discriminatory organization with non-

discriminating bureaucrats applying standardized rules efficiently without any preferential treatment.

Bureaucracies are the habitat of bureaucrats. But bureaucrats come in many different forms and shapes (Downs, 1957). Ever since Perry's (Perry and Wise, 1990; Perry, 1996) introduction of the PSM construct, scholarship in public administration and management argues that high-PSM people are attracted to (stay in) the public sector (Bozeman and Su, 2015; Perry, 1996; Vandenabeele and Skelcher, 2015). This follows from the attraction-selection-attrition (ASA) model (Wright and Grant, 2010) and the homophily logic (McPherson, Smith-Lovin, and Cook, 2001), arguing that groups of people reveal in-group similarities and out-group differences. Boone, Van Olfen, van Witteloostuijn, and De Brabander (2004) show that top management teams are "cloning machines," selecting in likes and selecting out dislikes, and van de Wardt, van Witteloostuijn, Chambers, and Wauters (2020) reveal homophily processes at the exit side in parliamentary parties in eight European democracies. Applying ASA argumentation, Wright and Grant (2010) indeed argue that high-PSM people are more likely to land in a public sector job. Although high-PSM graduates might not enter the labor market through a public sector job, they are more likely to end up in the public sector later in their career, compared with their low-PSM counterparts. However, the empirical evidence regarding this core assumption in PSM research is still mixed (Wright, Hassan, and Christensen, 2017).

We find tentative support for the argument that these young high-PSM people who might be more likely to end up in jobs in public bureaucracies, are likely to engage in discriminatory (prosocial) rule-breaking based on affect toward clients. While we find no hard evidence that higher PSM makes matters worse, public bureaucracies – which are in their very essence supposed to operate as non-discriminatory organizations – are faced with a latent challenge that they might actually attract individuals who do act discriminatory. This is an

intriguing paradox that suggests an important future research agenda. Future studies are needed to investigate whether young individuals' biased tendency to discriminate against clients based on affect is reduced after entry into a public bureaucracy. Can socialization processes in public bureaucracies – with their formal rules and informal codes *not* to discriminate – neutralize the negativity bias related with client information cues and, hence, reduce the risk of PSRB through their strong ethical climate, team, and leadership effects (Borry and Henderson, 2019; Borry, 2017; Fleming, 2019; Vardaman et al., 2014)? Extensive fieldwork is required to find answers to these important questions, also exploring potential contingencies (such as national culture, preventive choice architectures, or HRM practices) that may turn a public bureaucracy into either a discriminatory or a non-discriminatory organization.

Future research

Like any empirical study, ours is associated with limitations. First, our empirical evidence is based on student samples that may not be representative of the general populations of Germany, Belgium, and/or the Netherlands. Yet, by focusing on students predominantly engaging in (public) management and policy studies, the data are especially representative of precisely the population of students likely to seek employment in the public sector once they graduate. The current study provides a glimpse into the behavior of the key focus group of public sector recruitment candidates whose attitudes and behavior are not biased by prior work experience that might result in divergent effects of socialization processes and hence add noise to the data. The students of today are the civil servants of tomorrow.

Second, as a survey-based quasi-experiment largely relying on self-reported measures, this study suffers from the general problem that self-reported behavior never fully correlates with real behavior, even if intrinsic motivation is high, particularly if external control (Sheeran, 2002) and personal risk in case of behavioral deviance (i.e., rule-breaking) are low (Wulff and

Villadsen, 2020). Prior empirical research by Fleming (2019) showed that the expectation of detection and punishment significantly decreases employees' likelihood of engaging in PSRB. Conducting an anonymous survey quasi-experiment, this danger was zero in our study sample, with participants not facing any real-life consequences. Consequently, our results on PSRB intent might be artificially inflated in the case of receiving a favorable client affect cue, and might be artificially deflated in the unfavorable client affect cue scenario, hence potentially reducing the ecological reliability of our findings (Alwin, 1991). Future replication studies are encouraged to (a) investigate whether our findings hold valid also with civil servants on the job by replicating our study design with professional and experienced civil servants, and (b) complement these quantitative results with follow-up studies relying on qualitative interviews with street-level bureaucrats to investigate under which conditions PSM and client cues actually lead to PSRB *behavior* in practice over and beyond intent.

Third, we measure PSM and the control variables before administering the treatment of the quasi-experiment. While this is a common practice in (quasi-)experimental research conducted online and with an anonymous sample that is hard to follow up, the PSM items related to prosocial motives could result in an implicit response bias based on considerations of social desirability. Although unlikely with the randomized and anonymous setup of the study design (Fernandes and Randall, 1992), it is possible that this questionnaire order could possibly prime response systematically either towards being more likely to engage in PSRB – if respondents related strongly to PSM's COM dimension – or towards being less likely to engage in PSRB – if respondents reacted particularly strongly to CPI. This means that the effect sizes observed in our data might be potentially inflated, because the PSM items might have primed individuals to respond to the vignettes in a more prosocial way, as shown by Pedersen (2015) and Wulff and Villadsen (2020). Again, this calls for potential follow-up studies in which this spillover effect is nullified by design.

However, following recommendations of Nederhof (1985), we assume that this potential effect would be systematic across all study samples and, hence, would not substantially affect the empirical results. Fourth, this study only investigated the relation of PSM on *pro*-social forms of rule-breaking. PSM might also play a role regarding the likelihood of *anti*-social forms of rule-breaking, such as in cases where high-PSM bureaucrats actively block clients from accessing public services because they perceive these clients as undeserving. This and the effects of PSM and affect on prosocial rule-breaking may play out differently in different cultural and institutional contexts than those represented by our set of three affluent Western-European countries.

Given these limitations, we identify several further avenues for future research, a few of which are already identified above. First, we call for further replication in other countries in which the cultural perception of rule-breaking is more diverse than between the three European cultures included here. Replications will help to shed more light onto the effect of different bureaucratic traditions and administrative organizational cultures as the greater institutional context of the likelihood of PSRB. Second, future studies could explore the effect of PSM in contrast to value-related ethical or prosocial convictions and discriminatory PSRB behavior by systematically manipulating the client information cues and by pre-screening specific sample populations. Choice-based conjoint analyses on a diverse set of clients and also bureaucrat characteristics such as age, gender, social status, on-the-job experience, and also religious beliefs could be a very promising method to gain further insights on the motivational and psychological antecedents of PSRB. Third, future research could include implicit methods (see, e.g., Slabbinck et al., 2018; Slabbinck and van Witteloostuijn, 2020) to systematically and (quasi-)experimentally scrutinize what exactly causes asymmetric discrimination in PSRB behavior.

In general, we have to recognize the well-known weaknesses associated with experimental vignette studies, particularly those associated with (a) taking student samples and (b) using behavioral intentions to predict behavior from behavioral intent (see, for example, Wulff and Villadsen, 2019). Our study should be regarded as yet another step on our journey to deepen our understanding of the bright and dark sides of PSM – nothing more and nothing less. Future work is needed to continue this journey, not only by replicating our study applying a similar design, but also by adopting other designs, including field work with samples of non-students.

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TABLE 1: Respondents' socio-demographic characteristics

	Study 1	Study 2	Study 3
Sampling site	Germany	Belgium	The Netherlands
<i>N</i>	211	220	193
<i>Obs.</i>	282	284	305
Experimental treatment (<i>Obs.</i>) ^a			
Vignette 1	33.7% (95)	33.9% (96)	33.0% (101)
Vignette 2	32.7% (92)	33.2% (94)	33.3% (102)
Vignette 3	33.7% (95)	32.9% (93)	33.7% (103)
Perceived realism			
Vignette 1	2.14 ± .80	2.45 ± .84	2.13 ± .81
Vignette 2	2.97 ± .84	3.06 ± .61	3.04 ± .66
Vignette 3	3.19 ± .70	3.10 ± .71	2.97 ± .56
Gender, male (<i>n</i>) ^a	45.1% (86)	47.9% (92)	49.3% (98)
Age in years ^a	25.74 ± 4.81	20.76 ± 2.44	22.46 ± 3.74
Field of study (<i>n</i>)			
Public administration	19.7%	.	1.4%
Business administration	19.2%	46.8%	36.1%
Socioeconomics and economic policy	9.9%	10.0%	31.3%
Political sciences	3.6%	7.3%	5.7%
Industrial engineering and management	.	24.1%	4.3%
Other applied social sciences	47.7%	11.8%	21.3%
Public service motivation	5.31 ± .97	5.50 ± .86	5.36 ± .95
Risk preference ^b	.62 ± .60	1.59 ± .61	1.05 ± .68

Notes: Items are reported with geometric means and standard deviations ($M \pm SD$) or proportions (%) and frequencies (*n*); frequencies in relation to total number of observations per study sample. ^a Tested for treatment balance; all two-tailed *t*-tests within and between studies non-significant. ^b Centralized logarithmic discounting parameter.

TABLE 2: Descriptive analyses of *PSRB Intent* by study

PSRB Intent	M	SD	Treatment effect ^a		
			<i>t</i>	<i>p</i>	<i>d</i>
Study 1 (GER)					
Negative treatment	1.79	.77	-6.98	.000	-1.026
Neutral treatment	2.64	.87	– <i>reference category</i> –		
Positive treatment	3.17	.89	4.19	.000	.611
Study 2 (BEL)					
Negative treatment	1.81	.67	-5.55	.000	-.804
Neutral treatment	2.38	.76	– <i>reference category</i> –		
Positive treatment	2.83	.80	3.96	.000	.573
Study 3 (NL)					
Negative treatment	1.68	.65	-6.93	.000	-.966
Neutral treatment	2.38	.80	– <i>reference category</i> –		
Positive treatment	2.73	.87	2.99	.003	.422

Notes: Values range: 1 = ‘very low’ to 5 = ‘very high’. ^a Tested against vignette 2 (“neutral”)

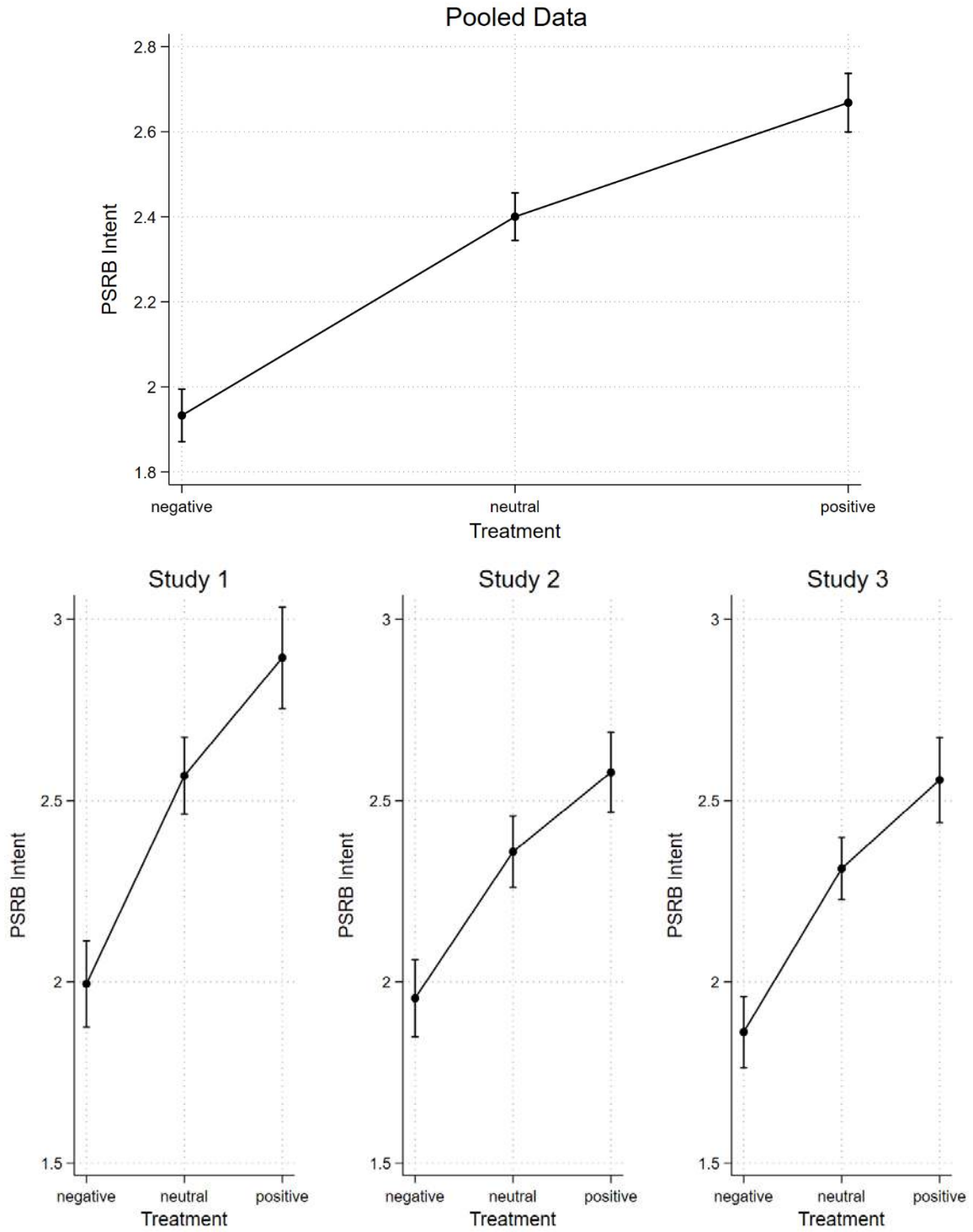
with two-tailed *t*-tests; effect sizes estimated with Cohen’s *d*-score (Welch-adjusted).

TABLE 3: Regression on *PSRB Intent*

	<i>Study 1</i>			<i>Study 2</i>			<i>Study 3</i>			<i>Pooled data</i>		
	<i>I</i>	<i>II</i>	<i>III</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>I</i>	<i>II</i>	<i>III</i>
Independent variable												
PSM		-.05 (.05)	-.03 (.06)		.13* (.06)	.13* (.06)		.10* (.05)	.16** (.05)		.06† (.03)	.09** (.03)
Treatment												
Negative		-.67*** (.11)	-.22 (.14)		-.37*** (.10)	-.02 (.12)		-.41*** (.11)	-.01 (.13)		-.47*** (.06)	-.06 (.07)
Neutral					– reference category for vignettes –							
Positive		.42*** (.11)	.03 (.12)		.32** (.10)	.04 (.11)		.47*** (.10)	.33** (.12)		.40*** (.06)	.13† (.06)
Interaction effects												
PSM × negative			-.13*** (.02)			-.10*** (.02)			-.13*** (.02)			-.12*** (.01)
PSM × positive			.10*** (.02)			.07*** (.02)			.03 (.02)			.07*** (.01)
Control variables												
Risk aversion	-.38** (.14)	-.44*** (.12)	-.41*** (.12)	-.08 (.12)	-.03 (.11)	-.02 (.11)	-.01 (.11)	-.06 (.10)	-.08 (.10)	-.16* (.07)	-.19** (.06)	-.19** (.06)
Age	.04** (.01)	.04*** (.01)	.04*** (.01)	.03 (.03)	.02 (.03)	.02 (.02)	-.00 (.01)	-.01 (.01)	-.01 (.01)	.02 (.01)	.02 (.01)	.01 (.01)
Female	.16 (.12)	.13 (.11)	.11 (.11)	-.01 (.11)	-.09 (.11)	-.07 (.11)	-.09 (.11)	-.08 (.10)	-.09 (.10)	-.04 (.07)	-.07 (.06)	-.07 (.06)
German					– reference category for county effects –							
Belgium										.00 (.09)	.04 (.09)	.00 (.09)
Dutch										-.16† (.08)	-.13† (.08)	-.15† (.08)
Intercept	1.57*** (.32)	1.85*** (.37)	1.86*** (.38)	1.88*** (.52)	1.27* (.62)	1.20* (.60)	2.32*** (.30)	1.99*** (.32)	1.74*** (.33)	2.17*** (.24)	1.92*** (.27)	1.83*** (.27)
<i>Obs.</i>	282	282	282	284	284	284	305	305	305	928	928	928
<i>F(df)</i>	5.44***	16.86***	27.00***	.44	4.71***	16.60***	.24	8.82***	14.54***	3.15**	20.28***	44.36***
<i>df</i>	3	6	8	3	6	8	3	6	8	5	8	10
<i>VIF^a</i>	1.12	1.12	1.56	1.18	1.07	1.53	1.00	1.09	1.50	1.40	1.30	1.60
<i>AIC</i>	803.96	748.41	696.54	718.11	686.60	646.85	803.71	755.02	717.89	2485.87	2345.55	2201.99
<i>BIC</i>	818.53	773.90	729.31	732.71	712.14	679.69	818.59	781.06	751.37	2514.87	2389.04	2255.15
<i>R²</i>	.045	.233	.370	.006	.129	.253	.003	.167	.272	.022	.164	.287
adj. <i>R²</i>	.035	.216	.352	-.005	.110	.231	-.007	.150	.252	.016	.157	.279

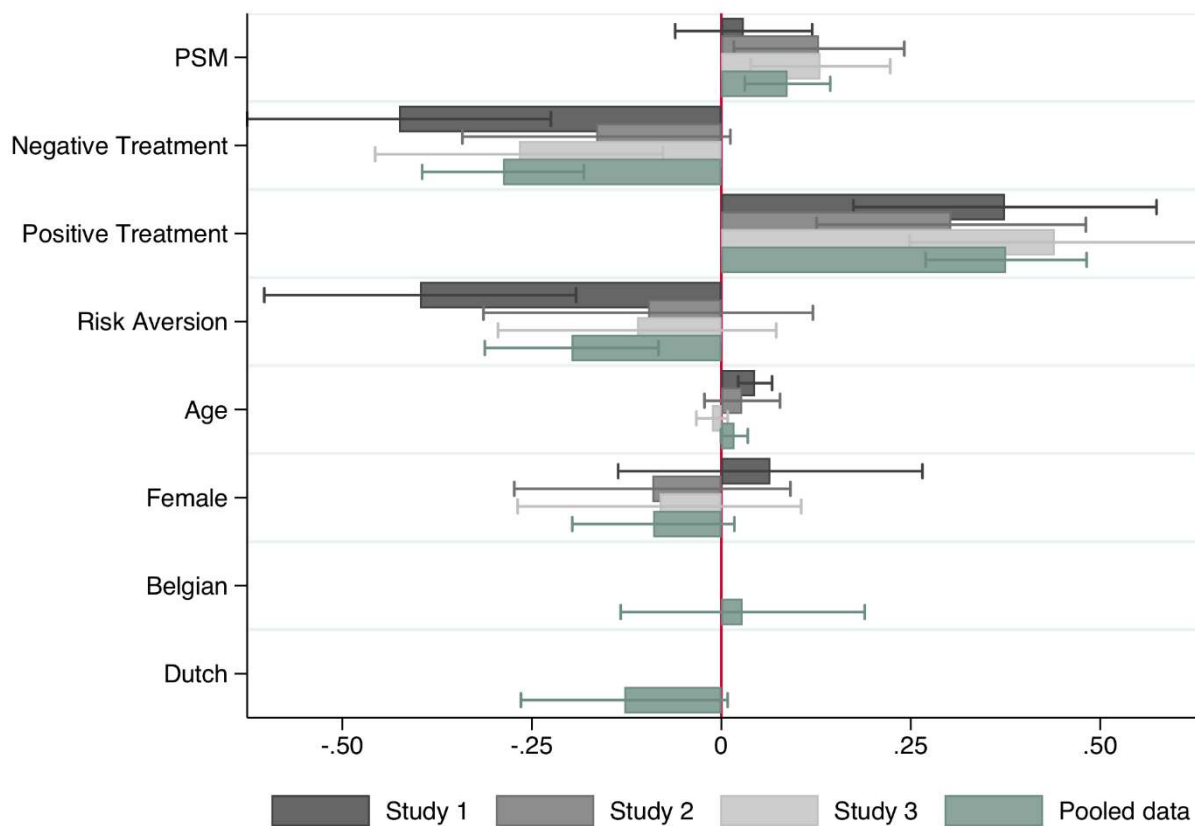
Notes: Linear regression estimates clustered at subject level for conditional contribution; heteroscedasticity-robust standard errors in parentheses; Model I: base-line model; Model II: with independent and treatment variables; Model III: adding interaction effects; Statistically significant effects marked with bold font. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; ^a mean VIF, all VIFs ≤ 2.21 .

FIGURE 1: Treatment effect



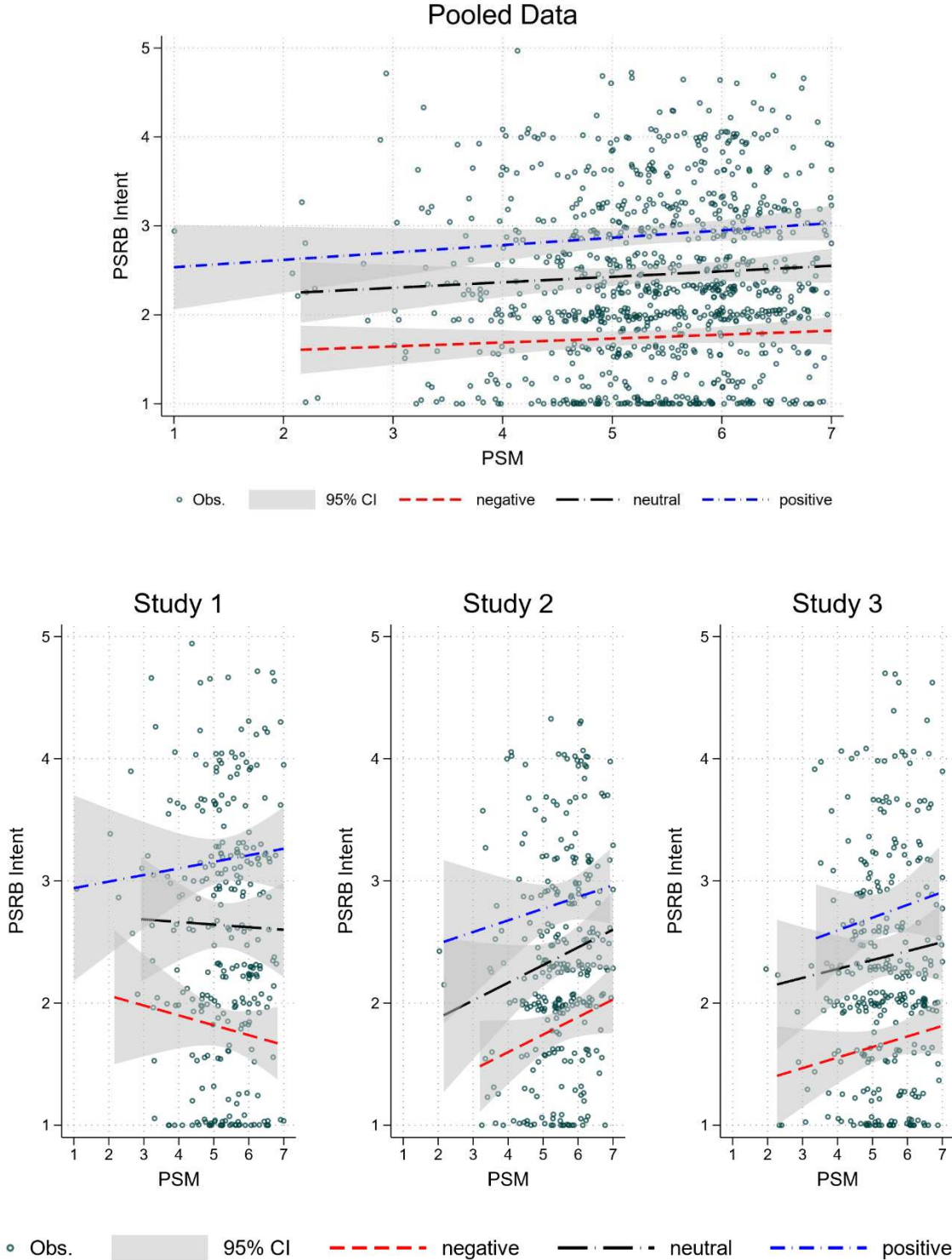
Note: Absolute treatment effects with 95%-CIs; upper panel: pooled data (*Obs.* = 928); lower panel: treatment effect split by study.

FIGURE 2: Coefficient plot of regression results



Note: Regression coefficients with 95%-CIs.

FIGURE 3: Quadratic fixed effects of PSRB Intent on PSM, by treatment



Note: Upper panel: pooled data (*Obs.* = 928); lower panel: individual studies.

[Supplementary online material]

APPENDICES

A.1 Structure of survey experiment and vignette treatments in English translation (extensive codebooks in German and Dutch are available upon request).

1	General introduction
2	Socio-demographic questionnaire <ul style="list-style-type: none"> - Year of birth - Gender - Nationality - Field of study
3	PSM-scale (Kim, 2011) <i>APM:</i> <ol style="list-style-type: none"> 1. I am interested in those public programs that are beneficial for my country or the community I belong to. 2. Sharing my views on public policies with others is attractive to me. 3. Seeing people getting benefits from a public program where I would have been deeply involved in would bring me a great deal of satisfaction. <i>CPI:</i> <ol style="list-style-type: none"> 4. I consider public service my civic duty. 5. Meaningful public service is very important to me. 6. I would prefer seeing public officials do what is best for the whole community even if it harmed my interests. <i>COM:</i> <ol style="list-style-type: none"> 7. It is difficult for me to contain my feelings when I see people in distress. 8. I am often reminded by daily events how dependent we are on one another. 9. I feel sympathetic for the plight of the unprivileged. <i>SS:</i> <ol style="list-style-type: none"> 10. Making a difference in society means more to me than personal achievements. 11. I am prepared to make enormous sacrifices for the good of the society. 12. I believe in putting duty before self.
4	Probability discounting task (Madden et al., 2009)
5	Introduction to prosocial rule-breaking scenarios [all study participants]: ‘Please imagine that you are employed as a public servant at a social housing institution that assists individuals with physical disabilities or low income in finding an appropriate and affordable residence. You are employed at the organization for three years so that you are well-informed about its internal operations. One of the important activities of your job responsibilities includes settling application forms in an efficient manner. One client, John, asks you to prioritize his application form. You know that strict procedures are applicable when application forms become prioritized. The most important rules stipulate that you get permission from your manager

	<p>when prioritizing an application form. However, the problem is that your manager today has to attend meetings during the entire day so that it is impossible to prioritize this application form. As a result, the dossier is likely to receive final approval within a month when it is not approved today. You doubt to approve this application without permission from your manager, which might entail potential consequences. Although you will not have any personal gain when prioritizing this application, you know that it would be the best for John and that it aligns with the mission of the organization that stipulates that every client needs to be helped as soon as possible.</p> <p>What would you do in the following two situations?’</p>
6	<p>Vignettes: Study participants randomly received two out of three vignette treatments, the order of which was randomized; each treatment was followed by seven Likert-type scale items: ‘The following statements relate to the preceding scenario. Please indicate to what extent you agree with the following statements:</p> <ol style="list-style-type: none"> 1. This scenario appears realistic. [1 = ‘totally disagree’; 4 = ‘totally agree’] 2. How likely do you think you will break the rules in order to prioritize the dossier without permission from your supervisor? [1 = ‘very unlikely’; 5 = ‘very likely’] 3. How justified do you find to break the rules and to prioritize the application without permission from your supervisor? [1 = ‘very unjustified’; 5 = ‘very justified’] 4. How would you feel about breaking the rules and prioritizing the application without permission? [1 = ‘very uncomfortable’; 5 = ‘very comfortable’]
A	<p>Negative treatment: “Former IS-fighter”</p> <p>You receive an urgent application form from John, a former ISIS-fighter who led a terrorist cell in Syria that committed several assaults in which many people became wounded. John since then became interned for three years that he sat out. John is now looking for a residence so that he can rebuild his life and apply for a job. Therefore, he makes an appointment with you to discuss his application. After the appointment John asks you to prioritize his application.</p>
B	<p>Neutral treatment: “Male client”</p> <p>You receive an urgent application form from John. John makes an appointment with you in order to discuss his application. After the appointment John asks you to prioritize his application.</p>
C	<p>Positive treatment: “Disabled single father with three children”</p> <p>You receive an urgent application form from John. John is a single father with three children and has a physical disability (wheelchair patient). John is desperate because he has been refused by the social housing institution for the third time due to lack of space. Consequently, he is waitlisted. John makes an appointment with you in order to discuss his application. After the appointment John asks you to prioritize his application.</p>
7	<p>Acknowledgement and end of study.</p>

TABLE A.2: Correlations and reliabilities

	1	2	3	4	5	6	7	8	9	10	11
Study variables											
1. PSRB Intent	–										
2. Negative treatment	-.22***	–									
3. Neutral treatment	.05*	-.36***	–								
4. Positive treatment	.25***	-.29***	-.36***	–							
5. PSM	.09**	-.01	-.04	.01	–						
6. Realism	.36***	-.21***	.13***	.13***	.13***	–					
Control variables											
7. Risk aversion	-.10**	-.03	-.01	.02	.08**	-.01	–				
8. Age	.10***	.00	.03	-.03	.07*	-.01	-.10***	–			
9. Female	-.04	-.01	.01	.03	.12***	.01	.03	-.10***	–		
10. German	.10**	-.02	-.03	.00	-.08**	-.05	-.30***	.40***	.03	–	
11. Belgian	-.02	-.02	.02	-.02	.09**	.07*	.37***	-.37***	-.01	-.45***	–
12. Dutch	-.08**	.03	.02	-.00	-.00	-.03	-.06*	-.08**	-.03	-.46***	-.46***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

A.3 Exploratory factor analysis of PSRB Intent

Table A.3.1 reports the results of exploratory factor analyses by treatment and study, reporting factor loadings and unique variances for each item, as well as the respective Kaiser-Meyer-Olkin (KMO) measure of sample adequacy. KMO mean values range between 0.64 and 0.74 across all treatment conditions and country samples, indicating meritoriously high sample adequacy (Kaiser, 1974). Prior to factor analysis, Bartlett's test for sphericity was conducted to examine whether factor items are inter-correlated. The significant Chi^2 -testing results of Bartlett's test (Chi^2 (3): 238.70 – 305.56, $p < 0.000$) indicate that factor items are interrelated and should load onto the same factor(s). The factor analysis results show that the three items strongly and significantly load onto one single factor. All items load substantially onto the individual factor, ranging between .67 and .86 in the pooled data, which is above the commonly held .60 threshold (MacCallum et al., 1999). Only with the German sample in the neutral treatment condition, the item *affect* was an outlier (.57), marginally not reaching this threshold. We interpret this as an indication for country culture-specific differences, which do not decrease the validity of our dependent variable aggregation procedure because this item is the relatively lowest loading item for the German sample in each of the three treatment conditions, hence pointing toward internal consistency of the measure. Across all study samples and treatment conditions, justification had the highest factor loadings, ranging between .72 and .92. The finding of high factor loadings is stable across all three country samples, indicating high internal and external validity of the developed construct of *PSRB Intent* with its three components.

Item uniqueness (U) is a measure of the percentage of variance for the respective item that is not explained by the common factors. Values of $U = 0.6$ are considered as high. In our analysis, uniqueness values range from $U = 0.26$ to 0.55. Items with lower uniqueness matter less for explaining the variance observed. First, across all treatments and study samples, *justification* ($U = 0.26$ to 0.39) was relatively less influential in explaining the variance observed

than those items with relatively higher uniqueness values, with *likelihood* ranging from $U = 0.36$ to 0.44 and *affect* from $U = 0.42$ to 0.55 . Second, across all three samples, items are in a relatively stable and narrow range, which indicates only subtle differences between samples, further substantiating the measure's internal validity in measuring one underlying construct and its robustness against country-specific influences, indicating high external validity. Because of the high inter-correlation, high overall scale reliability (Cronbach's α ranges from 0.762 to 0.803), and the strong factor model fit, no item was excluded, and the final dependent variable of this study is created by arithmetically sum-scoring the four indicators *likelihood*, *justification*, and *affect*.

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TABLE A3.1: Results of exploratory factor analysis of dependent variable by treatment and study

	Study 1 (GER)			Study 2 (BEL)			Study 3 (NL)			Pooled data		
Negative Treatment												
Factor item	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO
Likelihood	.86	.26	.69	.81	.35	.62	.80	.36	.77	.80	.36	.73
Justification	.92	.16	.63	.83	.31	.70	.84	.29	.71	.86	.26	.67
Affect	.76	.42	.80	.76	.43	.78	.81	.34	.75	.76	.42	.78
Mean KMO	.70			.73			.74			.72		
Eigenvalue	2.16			1.92			2.01			1.96		
Bartlett <i>Chi</i> ² (3)	182.47			131.71			163.57			473.46		
<i>p</i>	.000			.000			.000			.000		
Cronbach's α	.839			.784			.809			.803		
Neutral Treatment												
Factor item	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO
Likelihood	.92	.16	.59	.65	.58	.71	.84	.30	.74	.80	.36	.68
Justification	.91	.17	.60	.77	.41	.63	.88	.23	.69	.85	.28	.64
Affect	.57	.68	.92	.66	.56	.69	.80	.36	.79	.69	.53	.80
Mean KMO	.64			.67			.74			.69		
Eigenvalue	1.99			1.45			2.11			1.83		
Bartlett <i>Chi</i> ² (3)	163.93			79.47			181.81			405.69		
<i>p</i>	.000			.000			.000			.000		
Cronbach's α	.800			.709			.836			.791		
Positive Treatment												
Factor item	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO	Factor 1	<i>U</i>	KMO
Likelihood	.78	.40	.65	.72	.48	.65	.77	.41	.72	.75	.44	.69
Justification	.80	.35	.64	.79	.37	.61	.73	.48	.77	.78	.39	.66
Affect	.62	.62	.80	.60	.64	.75	.81	.35	.68	.67	.55	.77
Mean KMO	.68			.66			.72			.70		
Eigenvalue	1.63			1.51			1.77			1.62		
Bartlett <i>Chi</i> ² (3)	100.61			82.65			118.34			315.13		
<i>p</i>	.000			.000			.000			.000		
Cronbach's α	.748			.722			.789			.762		

Notes: *U* = uniqueness; KMO = Kaiser-Meyer-Olkin measure.

A.4 Additional analysis on selected treatment and spillover effects

For each country sample, the order of vignette treatments was randomized before randomly drawing two out of three vignettes for each respondent. Compared to a between-subject design in which each respondent would receive only one single vignette, this approach dramatically reduces the number of respondents needed to achieve reasonable sample sizes to investigate treatment effects with respect to the anticipated effect sizes. Yet, this way of distributing the treatments could potentially confound the observed treatment effect on the main dependent variable because showing two randomly drawn vignettes to each respondent actually creates latent clusters between respondents based on the unique vignette order they received. For instance, the effect of receiving a positive vignette first followed by a neutral vignette next could relatively outweigh the effect of receiving two extreme conditions – for instance, in the form of first receiving a negative vignette followed by a positive vignette.

The technical implementation of our quasi-experimental design allows us to identify three unique combinations – “clusters” – of vignettes, as described in Table A.4.1: *neutral and negative* (cluster *C1*), *negative and positive* (cluster *C2*), and *neutral and positive* (cluster *C3*). Cluster *C2* represents the combination of receiving the two extreme treatment conditions. In order to investigate whether the clustering of the vignette within each respondent resulted in selected treatment or spillover effects, we conduct a series of two-tailed *t*-tests between these three clusters on the pooled data, and we redo the regression analyses (main effects and, subsequently, adding interaction terms; both clustered at the level of the individual for conditional contribution) using the treatment clusters instead of the singular vignette treatments.

Descriptive mean-based analysis of *PSRB Intent* by clusters (see Table A.4.1) instead of singular treatments provides further support for hypotheses *H2a* and *H2b* as well as the finding that negative affect cues have a larger negative impact on *PSRB Intent* than positive affect cues have a positive impact. Respondents receiving both the neutral and the positive

vignettes (*C3*) are substantially more likely to engage in PSRB behavior (*C3*: $M = 2.71$, $SD = 0.84$) compared with respondents who received the negative affect cue paired with either the positive (*C2*: $M = 2.34$, $SD = 0.98$) or the neutral cue (*C1*: $M = 2.25$, $SD = 0.91$).

TABLE A.4.1: Descriptive statistics of *PSRB Intent* by treatment cluster

<i>PSRB Intent</i>		Obs.	Mean	SD	Min	Max
Cluster description						
<i>C1</i>	Neutral and negative treatment	248	2.250	.910	1.000	4.642
<i>C2</i>	Negative and positive treatment	222	2.342	.981	1.000	5.000
<i>C3</i>	Neutral and positive treatment	196	2.707	.844	1.000	4.642

Notes: Pooled data; *PSRB Intent* values range: 1 = ‘very low’ to 5 = ‘very high’.

Mean comparison analysis reveals that cluster-based selected treatment effect do not confound the findings presented in the main body of this study, but rather confirm the observation that negative affect cues relatively outweigh positive affect cues: Receiving a combination of a neutral and positive treatment stimuli (*C3*) correlates with a higher likelihood of *PSRB Intent* compared to receiving any cluster including a negative affect cue, hence $M_{C3} > M_{C1}$ and $M_{C3} > M_{C2}$.

TABLE A.4.2: Between-cluster differences of *PSRB Intent*

<i>PSRB Intent</i>		<i>t</i>	<i>p</i>	<i>d</i>
Cluster comparison				
<i>C1 vs C2</i>	[neutral & negative] vs. [negative & positive]	1.058	.290	.098
<i>C2 vs C3</i>	[neutral & positive] vs. [negative & positive]	4.049	.000	.397
<i>C3 vs C1</i>	[neutral & positive] vs. [neutral & negative]	5.424	.000	.518

Notes: Clustered treatment effect; tested with two-tailed *t*-tests; effect sizes estimated with Cohen’s *d*-score (Welch-adjusted).

Furthermore, two-tailed *t*-testing for between-treatment cluster differences of *PSRB Intent* (see Table A.4.2) reveals that receiving the neutral and negative treatment cluster (*C1*) has the same effect on *PSRB Intent* than receiving the negative and positive treatment cluster

(C2); $t = 1.058$, $p = 0.290$, $d = |0.098|$). In contrast, there are significant differences in dependent variable outcome when comparing cluster C3 with either C2 or C1 (C3 vs C2: $t = 4.049$, $p = 0.000$, $d = |0.397|$; C3 vs C1: $t = 5.424$, $p = 0.000$, $d = |0.518|$). Hence, we do observe selected treatment effects, but these are in line with our hypotheses, that is, both findings mirror the results of the main (treatment-based) analysis and can be explained by two compound effects. Although the vignette treatments were developed in a diligent procedure using an expert panel, to warrant their relative affective equivalence, negative stimuli are generally more salient than positive stimuli and, consequently, both clusters that incorporate the negative affective cues toward the client in the vignette (C1 and C2) logically result in lower likelihoods of *PSRB Intent*. Consequently, the latent cluster analysis does not indicate that the randomization procedure created obtrusive artefacts based on selected treatment or spillover effects, but rather confirm the results of the main analysis testing *H2a* and *H2b* by showing that practically irrelevant client information substantially and asymmetrically influences *PSRB Intent*.

Replicating the regression analyses by vignette clusters (see Table A.4.3) further substantiates this result by showing that both the direction and the relative size of the association between the vignette treatment respondents received and *PSRB Intent* directly match the results reported in Table 3 in the main body of this study. The association of receiving a negative treatment combined with any of the other treatments and *PSRB Intent* is smaller (C1: $\beta = 0.027$, $p = 0.755$; C2: $\beta = 0.109$, $p = 0.171$) than receiving a neutral and positive treatment (C3: $\beta = 0.476$, $p = 0.000$). All other associations between the remaining independent variables and *PSRB Intent* remain stable, as does the amount of variance explained by our models. Thus, the vignette-cluster-based analysis matches our findings in the main analysis we conclude that the current experimental setup was robust against selected effects involuntarily induced by latent vignette clustering, and hence that selected treatment or spillover effects between vignettes were not an issue.

TABLE A.4.3: Regression on *PSRB Intent* by clustered treatments

	<i>Pooled data</i>		
	β	<i>p</i>	<i>rob. SE</i>
Independent variable			
PSM	.07**	.049	(.03)
Treatment effect			
<i>C1</i> : neutral and negative	.027	.755	(.09)
<i>C2</i> : negative and positive	.109	.171	(.08)
<i>C3</i> : neutral and positive	.476***	.000	(.09)
Control variables			
Risk aversion	-.172**	.011	(.07)
Age	.013	.185	(.01)
Female	-.076	.234	(.06)
German	– <i>reference category for county effects</i> –		
Belgian	.012	.901	(.09)
Dutch	-.169*	.037	(.08)
Intercept	1.762***	.000	(.28)
<i>Obs.</i>			928
<i>F</i>			6.49***
<i>VIF</i> ^a			1.38
<i>RMSE</i>			.902
<i>R</i> ²			.065
<i>Adj. R</i> ²			.055

Notes: Linear regression estimates clustered at subject level for conditional contribution; heteroscedasticity-robust standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. ^aMean variance inflation factor (*VIF*): all $VIF \leq 2.02$.

Consequently, we have confidence in our findings and methodological approach, but encourage scholars conducting future replications of the current study to recognize the methodological risk of introducing additional noise by automatized randomization procedures that might potentially result in latent vignette-clusters in treatment distribution among respondents.

Although we do not find evidence for selected treatment or spillover effects induced by latent treatment clusters, future replication studies could, alternatively, use a pure between-subject design in which respondents receive, first, a non-affective neutral vignette to set a benchmark across respondents followed by, second, a single (positive, negative, or neutral) treatment vignette randomized across the whole sample to rule out the potential of treatment cluster-based

artefacts. Yet, researchers following this approach should be aware that they would have to work with substantially larger sample sizes to achieve the same level of power, which – due to increasing between-subject heterogeneity – might induce further noise into the data, while the expected benefit of circumventing marginally small cluster effects is limited. Research pragmatism, hence, suggests that replicating the current study in its original design would be the most advisable.