

# Taxpayers do not always follow the crowd: The effects of regulatory focus and social norm on tax compliance<sup>☆</sup>

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## ABSTRACT

The communication of social norms is a strong driver of behavior and is therefore recommended as a persuasive tool for tax compliance. However, the evidence on the influence of social norms on tax behavior remains inconclusive. Ambiguous results could be explained by Regulatory Focus Theory, which posits that the situational motivational focus (i.e., prevention vs. promotion focus) may influence the relevance of social norms. To examine this moderating effect, we conducted a laboratory experiment. Participants were instructed to think about their responsibilities versus their desires; thus, we manipulated a prevention focus versus a promotion focus. They then received information about the tax-paying behavior of others, representing different social norms (low vs. high). The results suggest that a prevention focus enhances the effect of social norms on the motivation to pay honestly and on incentivized tax payments. The present paper demonstrates that the influence of social norms may depend on the regulatory focus and offers practical implications for increasing taxpayers' voluntary motivation to pay their fair share of taxes.

## 1. Introduction

While paying taxes is fundamental for well-functioning societies, many citizens dislike paying taxes and avoid fulfilling their total tax obligations (Vellutini et al., 2019). Research proposed that one intervention to enhance tax compliance is the communication of social norms (e.g., Burgstaller & Pfeil, 2024; Hallsworth et al., 2017). Although social norms are powerful regulatory drivers that guide individuals toward desired behaviors, not all individuals conform to social norms to the same extent (Rhodes et al., 2020). The regulatory focus of prevention and promotion might help clarify social norms' effects (Zhang et al., 2011). Individuals with a prevention focus are more likely to regulate their behavior according to duties and obligations than individuals with a promotion focus, and respond more strongly to norm violations (Pfattheicher & Keller, 2013). Moreover, previous research has shown that individuals with a prevention focus are more responsive to social norms of food consumption (Florack, Palcu, & Friese, 2013) and managerial behavior (Zhang et al., 2011). However, these findings have not been applied to compliance behaviors involving the provision of

collective goods. Tax compliance differs fundamentally from these contexts because it involves civic obligations rather than preferences in food or work contexts. It requires financial sacrifices for the benefit of society and involves legal regulations. Moreover, studies are lacking that test how regulatory focus influences social norm effects on tax-paying behavior beyond intentions.

Therefore, the objective of the present study was to examine whether regulatory focus is a potential moderator of the effects of social norms on tax-paying behavior. Based on the idea that norm compliance fits a prevention focus, we tested the hypothesis that the impact of a social norm is stronger when individuals regulate their behavior according to responsibilities (prevention focus) than when individuals regulate their behavior according to ideals (promotion focus). The study contributes to the literature by identifying regulatory focus as a moderator of social norm effects on tax-paying behavior, and it helps to understand inconsistent prior findings and provides a starting point for potential strategies for tax compliance interventions.

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## 2. Theoretical background

### 2.1. Determinants of tax compliance

Tax behavior is driven by internal and external motivations (Alm, 2019; Kirchler, 2007). The decision to pay taxes honestly is linked to the motivation of enforced and voluntary tax compliance (Kirchler et al., 2008). Enforced tax motivation addresses compliance due to expected audits and fines in cases of detected evasion. In contrast, voluntary tax compliance has been related to tax honesty because of trust in the political and administrative system, perceived procedural and distributive fairness, and generally positive attitudes toward taxation (Kirchler et al., 2008; Wahl et al., 2010). Whereas enforced compliance can be related to fear, anger, and resistance, voluntary compliance is related to a morally felt obligation and commitment to the tax system (Gangl et al., 2015; Wahl et al., 2010).

Tax authorities encounter the task of developing strategies to increase and stabilize tax compliance. A typical approach is to increase the penalty rate or the probability of an audit, which may result in higher compliance rates (Alm, 2019; Blackwell, 2010). However, current research suggests that these conventional enforcement approaches may not always yield favorable outcomes and can sometimes backfire (Beer et al., 2020; Lancee et al., 2023). For example, audits may have positive short-term effects but may be associated with lower compliance in the long run (Lancee et al., 2023). This challenges the effectiveness of such approaches and highlights the need for more nuanced interventions that consider behavioral insights (Alm et al., 2023).

Tax compliance can be positively affected by reminding people that most taxpayers are honest and, thus, by stressing a descriptive social norm (Alm & Torgler, 2011; Gangl et al., 2012; Hallsworth et al., 2017; but see also, Dularif & Rustiarini, 2022). A descriptive social norm, which communicates what most people do in a given situation, is a powerful tool for influencing other people's behavior (Cialdini & Goldstein, 2004; Nolan, 2021; Nolan et al., 2008). Evidence of the positive relationship between the perceived tax compliance of similar others and self-reported tax compliance is supported by several survey studies (Bobek et al., 2007; Gangl et al., 2013; Song & Yarbrough, 1978; Wenzel, 2004, 2005b). However, experimental studies have reported inconsistent results regarding the impact of social norms on persuasion attempts (Ariel, 2012; Hasseldine et al., 2007). Whereas the results of some studies have been in line with the assumption that descriptive social norms lead to norm-consistent behavior (Coleman, 1996, 2007; Del Carpio, 2013; Hallsworth et al., 2017), the results of other studies have not supported this assumption (Antinyan & Asatryan, 2019; Blumenthal et al., 2001; Fellner et al., 2013; Hasseldine et al., 2007; McGraw & Scholz, 1991; Wenzel, 2005a). Hence, the impact of social norms on tax-paying behavior is not yet fully understood, and further insights into the relevance of individual and situational factors that might impair social norms' impact on tax compliance are needed (Wenzel, 2004). According to leading theories in social psychology, a person's conformity to a group's norms is influenced not only by their identification with the group but also by their strategic orientations in self-regulation, known as regulatory focus (Higgins, 2012; Higgins & Pinelli, 2020).

### 2.2. Regulatory focus theory

Regulatory focus theory (RFT) proposes that individuals can differ in their strategies to pursue their goals (Higgins, 1997, 2005, 2012). RFT suggests that thinking of wishes versus responsibilities determines one of two basic motivational orientations of individuals: promotion focus or prevention focus (Higgins, 1997). The theory distinguishes between a vigilant motivational strategy of prevention (prevention focus) and a more eager and risky strategy of promotion (promotion focus). People have a general predisposition toward one of these strategic motivational orientations, which they have acquired through socialization (Keller, 2008). However, a temporary focus can be evoked by the characteristics

of a situation (Florack et al., 2006). Individuals with a promotion focus are more willing to follow risky strategies, give up the status quo, anticipate regret about losses or mistakes, and are less conservative compared with individuals with a prevention focus (Crowe & Higgins, 1997; Florack & Hartmann, 2007; Leder et al., 2013, 2015; Spiegel et al., 2004; Zhang et al., 2011). A fundamental tenet of RFT is that a promotion focus is evoked when individuals regulate their behavior according to ideals, wishes, and hopes. In contrast, a prevention focus is evoked when individuals regulate their behavior according to responsibilities and obligations (Higgins, 1997).

Empirical research has shown that regulatory focus facilitates processing information or activities that fit the focus (Crowe & Higgins, 1997; Florack & Scarabis, 2006; Higgins & Pinelli, 2020; Spiegel et al., 2004). Empirical studies have also indicated that promotion-focused taxpayers are more likely to pay higher taxes when the gains of tax honesty are outlined but are less willing to do so when the potential for losses due to detected evasion is discussed. By contrast, taxpayers with a prevention focus are more likely to pay higher taxes when the losses due to tax evasion are pronounced and are less likely to pay their complete taxes when the gains of honesty are presented (Holler et al., 2008; Leder et al., 2010). Hence, the regulatory fit between the motivational orientation of a taxpayer and the message promoting tax compliance increases taxpayers' intrinsic and voluntary motivation to cooperate with the tax law. This means taxpayers would voluntarily pay taxes without strong enforcement (Kirchler, 2007).

We assume that information about descriptive norms (the tax behavior of the majority of other taxpayers) provides further information that is more important for individuals in a prevention focus than those in a promotion focus (Florack, Palcu, & Friese, 2013; Zhang et al., 2011). The reliance on descriptive social norms fits a prevention focus more than a promotion focus because descriptive norms of tax-paying represent a kind of societal pressure and obligation (Cialdini & Goldstein, 2004; Frey & Torgler, 2007), and following social norms is a conservative tactic with small probabilities for (social) errors or mistakes. We argue that conformity and adherence to common standards are crucial tactics for individuals with a prevention-oriented mindset to maintain or establish a sense of safety. Research demonstrates that prevention-focused individuals show enhanced well-being specifically in cultural contexts characterized by tight social norms and clear behavioral expectations (Contu et al., 2023). Also, studies found that prevention-focused individuals penalize those who violate established norms (Pfattheicher & Keller, 2013, 2017). Moreover, experimental results indicate that individuals in a promotion focus base their decisions more strongly on their internal states (Pham & Avnet, 2004, 2009), whereas individuals in a prevention focus are more willing to follow social norms (Florack, Palcu, & Friese, 2013; Leder et al., 2015; Zhang et al., 2011) or more sensitive to norms in a situation (Givi & Das, 2023). For example, individuals with a prevention focus (vs. promotion focus) were found to copy the teaching behavior or leadership style of their former teachers or supervisors (Zhang et al., 2011) or to mimic the eating behavior of others (Florack, Palcu, & Friese, 2013).

### 2.3. Current research

Our objective was to explore whether the impact of social norms on tax compliance depends on individuals' regulatory focus. Based on the previous literature, we expected that tax payments of individuals with a prevention focus would be more strongly influenced by descriptive social norms compared to those of individuals with a promotion focus. In addition, we hypothesized that the effect of regulatory focus on tax compliance would be based on a motivational change within individuals. Specifically, we assume that the impact of the descriptive norms would be mediated by self-reported voluntary cooperation, which can be viewed as a proxy for intrinsic motivation (Kirchler, 2007). In detail, we expected that, for individuals with a prevention focus, low versus high social norms would first impact the motivation to cooperate

voluntarily and that this in turn would determine behavior. We did not expect this effect for individuals in a promotion focus because social norms should be less relevant in this motivational focus.

To test these hypotheses under laboratory conditions, we conducted an experiment in which we combined an established priming task from regulatory focus research with a social norm manipulation in an imaginative-scenario task. The experiment was the first part of a lab session at the University of Vienna, which included additional scales for further correlational studies. All items from the lab session as well as study materials are available via this OSF link: [https://osf.io/9mkv2/?view\\_only=fb239d6e9e0d45bfba50eacb6d1f6c80](https://osf.io/9mkv2/?view_only=fb239d6e9e0d45bfba50eacb6d1f6c80). The text used for the experimental manipulation and the items of the dependent measures are also provided in both German (original version) and English (translation) in the Online Appendix.

The present study is one of the rare attempts to examine the impact of descriptive social norms on tax compliance in a laboratory experiment with incentivized behavioral data and the additional advantage of getting insights into the psychological process (i.e., voluntary cooperation) underlying tax compliance.

### 3. Method

The reported study was conducted in accordance with the Code of the Ethics of the World Medical Association (Declaration of Helsinki) and in accordance with the local legislation and institutional requirements. All participants provided informed consent before viewing any study material.

#### 3.1. Sample

Participants were recruited for a lab session. To detect interaction effects of a medium effect size  $f = 0.25$  with power  $>80\%$  at an alpha level 0.05 in a  $2 \times 2$  between-subjects design, a priori power analysis indicated a required sample size of at least 128 participants. However, the final sample size was determined by practical constraints (i.e., the maximum number of available slots for participants in the lab). In total, 147 students (52 % females,  $M_{\text{age}} = 22.62$ ,  $SD = 4.97$  years; 9 participants did not respond to the gender and age questions) took part in the experiment and were financially compensated according to their tax decisions in the experiment ( $M = 4.72$  Euro, range: 1.38–6.90 Euro).

#### 3.2. Design

We manipulated regulatory focus (promotion focus versus prevention focus) and descriptive social norms (low social norm versus high social norm) in a  $2 \times 2$  between-subjects design. As dependent variables, we analyzed self-assessed voluntary cooperation and incentivized laboratory tax payments.

#### 3.3. Procedure and material

Participants were invited to a computer laboratory. After giving informed consent, their regulatory focus was manipulated through a regulatory-focus priming task (adapted from Freitas & Higgins, 2002; Holler et al., 2008). In the promotion focus condition, participants read a short text about the importance of wishes and dreams for reaching personal goals, including some examples of a healthy lifestyle, a good partnership, and a successful career. Afterwards, participants were asked to formulate a personal goal and list three potential steps to achieve it. By contrast, in the prevention focus condition, participants read a short story about the importance of obligations in guiding personal behavior and were provided with examples such as the obligation to keep a diary, to nurse relatives in need of care, and to work for a colleague during holidays. Then, participants were asked to write down a personal obligation and list three things they could do to avoid not fulfilling their obligation. The manipulation of regulatory focus was not

linked to tax paying.

After the manipulation of regulatory focus, participants were asked to imagine moving to a fictitious country (Chomland), working there, earning an income, and paying a 40 % tax on their income. The chance that the tax authorities in the fictitious country would audit the tax report was presented as 1:6. Participants were informed that at the end of the study, the experimenter would toss a die whereby the number 1 would result in an audit. The numbers 2, 3, 4, 5, 6 would allow participants to leave without being audited. Participants learned that they earned 50,000 ECU (experimental currency unit) and that according to the fictitious country's tax laws, they would have to pay 20,000 ECU in taxes. They were also informed that it was possible to pay less than the required taxes. However, in the case of an audit by the tax authorities, they would have to pay back the evaded taxes plus the same amount as a fine. Participants also learned that the exchange rate between the ECU and the Euro was 7250 ECU to 1 Euro and that their tax decision would determine their actual payment at the end of the experiment.

Then, the social norm manipulation followed, and participants had to imagine that they had learned from a colleague how to proceed with the tax payment in a fictitious country. Participants read that either 30 % of their colleagues (low social norm) or 70 % of their colleagues (high social norm) paid their taxes honestly.

After the descriptive norm manipulation, participants answered an open question to indicate how much tax they were willing to pay. Finally, participants completed a questionnaire with manipulation check items, scales to assess voluntary cooperation, and items to determine socio-demographic characteristics such as sex and age. The manipulation check item for perceived social norms was "How likely is it that your colleagues in Chomland evade their taxes?" (6-point Likert scale with the endpoints 1 = *very unlikely* and 6 = *very likely*). Voluntary cooperation was assessed according to the scale from the TAX-I (Kirchler & Wahl, 2010) with three items (e.g., "I pay my taxes without spending a long time thinking about how I can reduce them," Cronbach's  $\alpha = 0.69$ ,  $M = 3.56$ ,  $SD = 1.20$ ) on a 6-point Likert scale (*totally disagree* (1) and *totally agree* (6)).

After a participant filled out the questionnaire, the experimenter tossed a die to determine whether the participant's tax report was audited. At the end of the experiment, participants received their financial compensation (on average 4.72 Euro/6.09 US Dollar; min = 1.38 Euro/1.78 US Dollar, max = 6.90 Euro/8.90 US Dollar) and were debriefed.

## 4. Results

#### 4.1. Manipulation check

The manipulation check for social norms showed that, in the condition with a social norm of low tax compliance, participants estimated that their colleagues evaded more taxes ( $M = 4.39$ ,  $SD = 1.26$ ) than in the condition with a high tax compliance norm ( $M = 3.95$ ,  $SD = 1.20$ ),  $t(143) = 2.19$ ,  $p = .030$ , *Cohen's d* = 0.36.

#### 4.2. Voluntary cooperation

First, a 2 (promotion versus prevention focus)  $\times$  2 (low versus high social norm) ANOVA with voluntary cooperation as the dependent variable was computed. As depicted in Fig. 1, a significant interaction of regulatory focus and social norm was found for voluntary cooperation with a small effect size,  $F(1,137) = 5.61$ ,  $p = .019$ ,  $\eta^2 = 0.04$ . In the prevention focus condition, a social norm of low tax compliance ( $M = 3.01$ ,  $SD = 1.05$ ) led to significantly lower self-reported voluntary cooperation than a social norm of high tax compliance ( $M = 3.92$ ,  $SD = 1.21$ ) with a medium effect size,  $F(1,137) = 10.26$ ,  $p = .002$ ,  $\eta^2 = 0.07$ . In the promotion focus condition, participants did not differ according to the social norm manipulation,  $F(1,137) < 0.01$ ,  $p = .947$ ,  $\eta^2 < 0.01$  (low social norm:  $M = 3.63$ ,  $SD = 1.25$ ; high social norm:  $M = 3.61$ ,  $SD =$

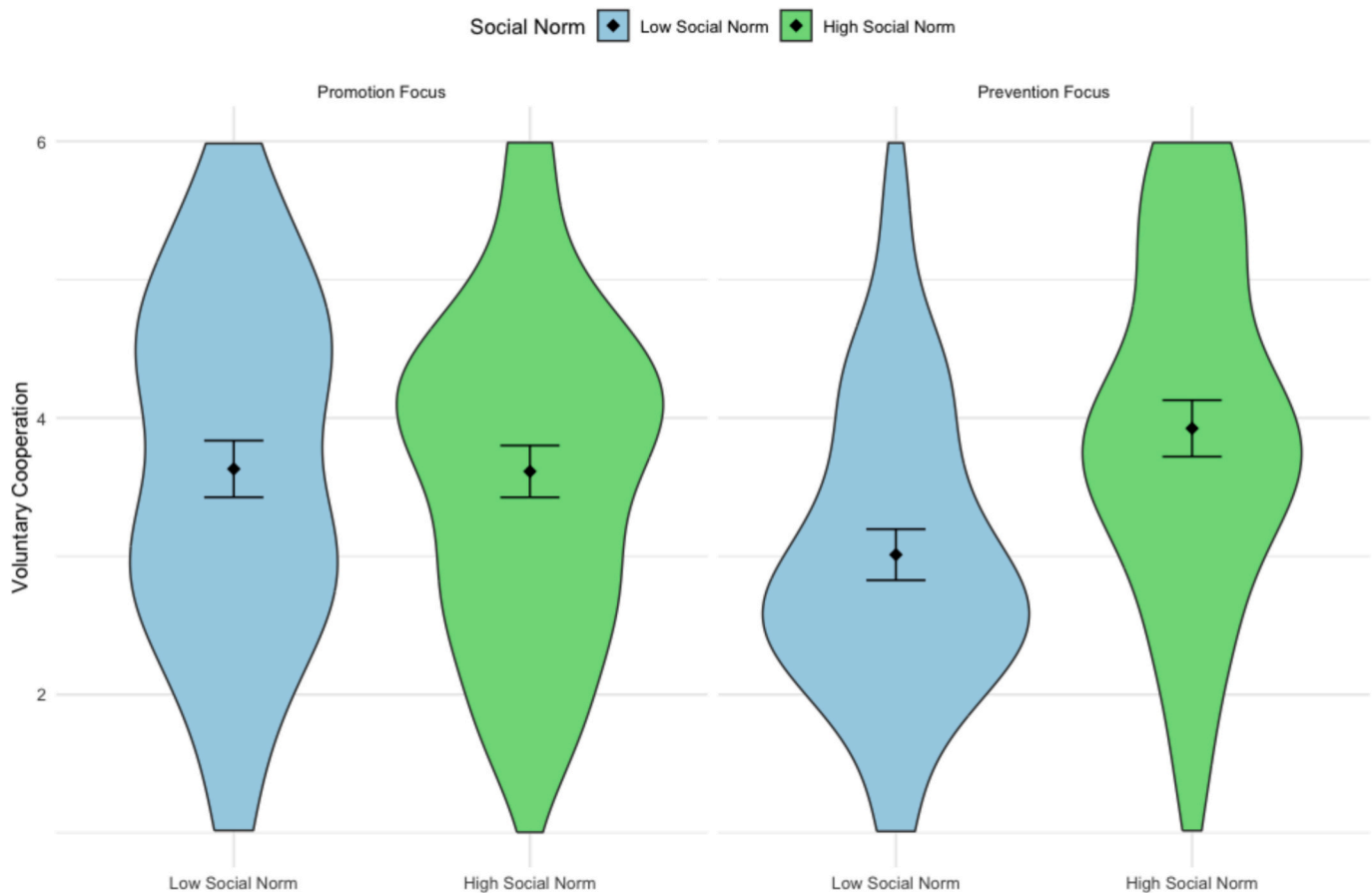


Fig. 1. Regulatory focus and social norms on the voluntary motivation to comply.

1.14). The main effect of social norms on voluntary cooperation was significant with a small effect size,  $F(1, 137) = 5.18, p = .024, \eta^2 = 0.04$ . No main effect of regulatory focus on voluntary cooperation was found,  $F(1, 137) = 0.62, p = .434$ .

#### 4.3. Incentivized tax payments

We further tested our hypothesis on the effect of social norms for individuals in a prevention focus on the incentivized tax payments with a 2 (promotion versus prevention focus) x 2 (low versus high social norm) ANOVA. As shown in Fig. 2, participants in a prevention focus paid higher taxes after the presentation of the social norm of high tax compliance ( $M = 14,981.89, SD = 6830.99$ ) than after the presentation of the social norm of low tax compliance ( $M = 11,626.47, SD = 6916.00$ ),  $F(1, 143) = 4.35, p = .039, \eta^2 = 0.03$ . The effect size was small. In the promotion focus, tax payments did not differ according to the social norms,  $F(1, 143) = 0.05, p = .824, \eta^2 < 0.01$  (high social norm:  $M = 14,153.85, SD = 6621.49$ ; low social norm:  $M = 13,816.67, SD = 6384.22$ ). Although this pattern was in the expected direction, the interaction of regulatory focus and social norms on tax payments was not significant,  $F(1, 143) = 1.87, p = .174, \eta^2 = 0.01$ . The main effects of regulatory focus,  $F(1, 143) = 0.38, p = .538$ , and of social norms on tax payments,  $F(1, 143) = 2.80, p = .097, \eta^2 = 0.02$ , were not significant.

#### 4.4. Indirect effect of social norms on tax payments through voluntary cooperation

A moderated mediation analysis was conducted to analyze whether the indirect effect of social norms on tax payments through voluntary cooperation is moderated by the motivational focus (prevention vs. promotion). The indirect effect was tested with a 95 % bias-corrected

bootstrap confidence interval based on 5000 bootstrap samples (Model 7; Hayes, 2022). The moderated mediation index is significant, 95 %-CI [393.41, 4455.22], which indicates a significant difference in the indirect effects between the regulatory focus conditions. In the prevention focus condition, the indirect effect of social norms on tax payments through voluntary cooperation is significant, 95 %-CI [889.60, 3904.96], whereas this indirect effect was not significant in the promotion focus condition, 95 %-CI [-1411.94, 1359.45]. The direct effect of social norms on tax payments was not significant, 95 %-CI [-1088.99, 3041.46].

## 5. Discussion and conclusions

The aim of the present paper was to clarify the relationship between social norms and tax compliance by testing a potential moderator. We predicted that taxpayers' regulatory focus would influence the impact of descriptive norms. The results of our laboratory experiment confirmed the hypothesis that individuals with a prevention focus follow the descriptive social norm of tax paying, whereas individuals with a promotion focus consider the norm less. The mediation analysis supported our hypothesis that, with a prevention focus, the social norm of high tax compliance increases voluntary cooperation, which in turn indirectly increases tax payments.

Our findings indicate that the effects of social norms do not automatically occur, but they depend on the motivational orientation of the individual. They help to understand why the effects of social norms on tax payments are often not consistent (Blumenthal et al., 2001; Halls-worth et al., 2017). In the current study, we induced a promotion or prevention focus with an experimental manipulation. But other situational variables could influence the regulatory focus of individuals as well, and individuals may differ in their individual regulatory focus

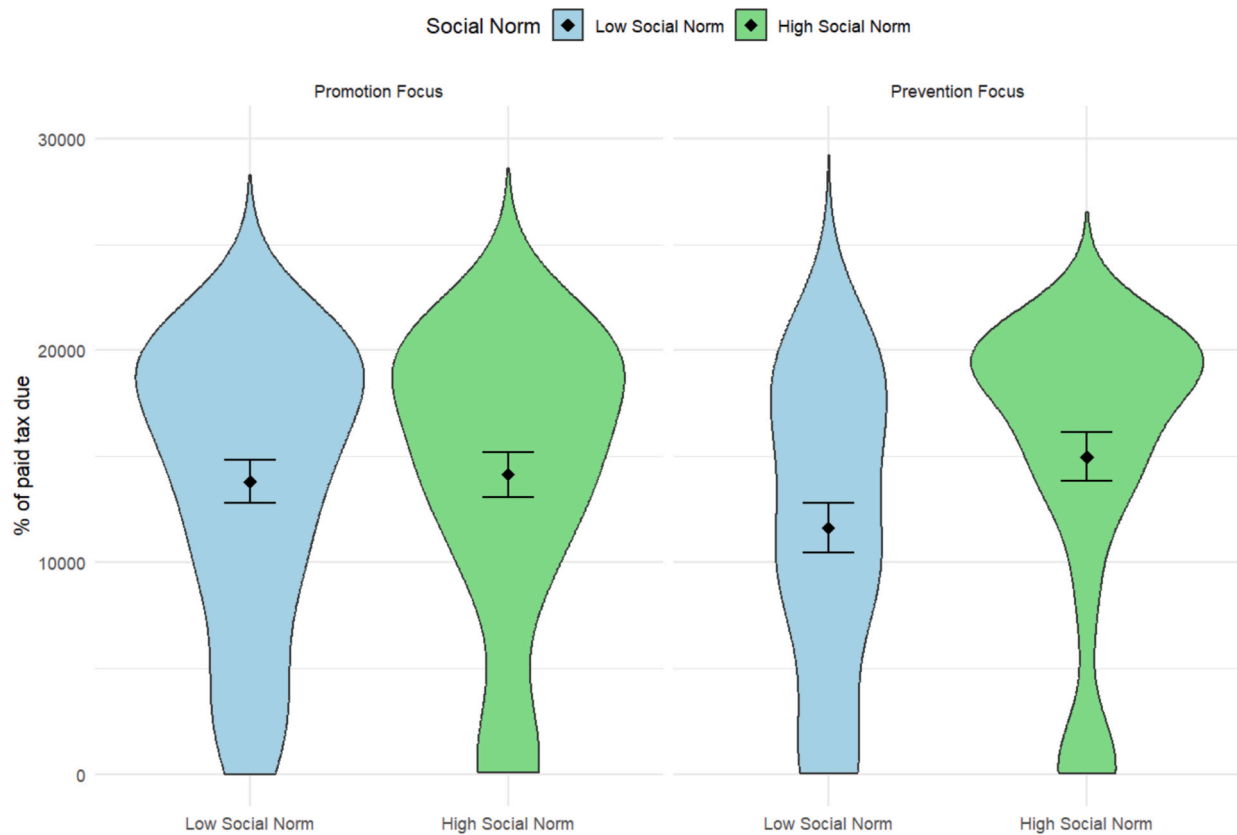


Fig. 2. Regulatory focus and social norms on incentivized tax payments.

across situations (Florack, Keller, & Palcu, 2013). When parents are aware of the social responsibility they have for their family, for example, they might have a stronger prevention focus than when someone is concerned with the gains of her or his investment. Also, individuals might differ based on their learning history and socialization (Higgins, 1997). All these variations in regulatory focus can contribute to the varying effects of social norms on tax payments.

The results of the present study are in line with previous studies in other fields of application that have demonstrated that individuals with a prevention focus are more responsive to social norms in food consumption contexts (Florack, Palcu, & Friese, 2013) and show more copying behaviors in organizational settings (Zhang et al., 2011). However, our research extends these previous findings because we studied individual decisions with direct societal implications. Moreover, our research provides experimental evidence in which participants made decisions with real monetary consequences, and we identified voluntary cooperation as a mechanism through which a prevention focus enhances norm responsiveness.

Embedded into the broader literature on regulatory focus (Florack, Keller, & Palcu, 2013; Higgins, 2012), our findings suggest that combining social norm communications with prevention-focused framing could improve tax compliance. However, it is important to recognize that the policy implications which we illustrate in more detail below are based on the general principles of regulatory focus theory and prior research (e.g., Zhang et al., 2011), rather than on the results of our experiment alone. Given the limitations of our experiment, the policy recommendations are starting points that need empirical tests.

One recommendation would be to address the fit of social norm intervention and prevention focus in communications. For example, tax authorities could implement a combination of social norm communication and prevention-focused reminders on webpages where taxpayers seek help and information. Further, in digital portals for tax declarations or tax self-assessments, they could present social norm information (e.g.,

compliance rates of taxpayers) alongside prevention-focused reminders (e.g., 'Ensure you meet your tax obligations by reviewing each section carefully'). Importantly, it should also be considered that tax compliance challenges are not limited to developed countries and may be particularly pronounced in developing countries where enforcement mechanisms may be limited.

Another possible strategy would be to frame government responsibilities, such as providing infrastructure, education, and healthcare, as societal obligations that can only be fulfilled when all citizens contribute through tax compliance. However, whether such a strategy can work needs to be tested, because it means a shift from personal obligations, which were tested in the present study, to collective societal responsibilities.

We provided a pilot test of such an intervention targeting collective obligations in an additional experiment (for details on methods and results, see supplementary materials). We recruited self-employed taxpayers as participants because they frequently make independent tax compliance decisions. Participants were presented with a realistic tax filing scenario and received an information brochure ostensibly from the Ministry of Finance. We used the information brochure to manipulate regulatory focus at the societal level. In the prevention focus condition, we emphasized society's obligation to provide infrastructure and healthcare facilities that can only be fulfilled if all taxpayers avoid tax evasion. In the promotion focus condition, we highlighted society's aspiration to achieve excellence in infrastructure and healthcare facilities, which can only be realized if all taxpayers contribute by paying taxes. Additionally, we manipulated the social norm by informing participants that either few (10% = low social norm) or many (90% = high social norm) other self-employed individuals pay their taxes honestly. We measured voluntary cooperation as well as intended tax payments. Although the descriptive patterns of results were in the expected direction (i.e., differences in the social norms were stronger in the prevention focus condition than in the promotion focus condition), we did

not find any significant effects on voluntary cooperation or a significant interaction effect on intention to pay taxes. This pilot study differed from the main experiment because the manipulation targeted societal rather than individual obligations, the sample consisted of self-employed taxpayers rather than students, and the dependent variable measured intentions rather than actual payments. Given these differences, it remains unclear whether the non-significant results were due to the shift from individual to societal framing only. Therefore, future research should systematically examine the differential effects of individual versus societal regulatory focus manipulations while controlling for other methodological factors.

Although the present paper provides important theoretical and practical implications, some limitations should be considered. First, as with most studies that simulate tax-paying behavior, our study carries the risk of demand effects or social desirability bias in the responses and behaviors. However, these biases would likely have affected all experimental conditions equally. As a result, they may have influenced the overall means of voluntary cooperation and tax payment. However, it is less likely that participants guessed the expected pattern across conditions and adjusted their behavior accordingly. Second, to increase the external validity, replication in field settings would be desirable, particularly because regulatory focus may vary systematically across professions. Third, the effects of the behavioral tax payment measure were of a small effect size. While the contrasts and the moderated mediation were significant for the tax payment measure, the interaction between social norms and regulatory focus was only significant for the voluntary cooperation. The non-significant interaction for the tax payment measure may be explained by the higher sample sizes that are usually needed to detect interaction effects (Leon & Heo, 2009). However, it is important to note that, since tax compliance affects all employed and self-employed individuals in a country, even a small increase in compliance rates could result in a relevant increase in tax revenue overall.

To sum up, our results provide insights into how self-regulatory orientations of promotion and prevention influence the effects of descriptive tax norms. They suggest that persuading taxpayers to pay taxes by presenting descriptive norms of tax-paying compliance increases voluntary cooperation and subsequent tax-paying if a prevention focus is activated. The present study suggests that the efficacy of descriptive social norms on tax compliance can be increased if the communication of descriptive norms is accompanied by messages that induce a prevention focus and, for example, refer to the responsibilities and obligations of the individual.

#### CRedit authorship contribution statement

**Janet Kleber:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Katharina Gangl:** Writing – review & editing, Writing – original draft, Methodology, Funding acquisition, Conceptualization. **Erich Kirchler:** Writing – review & editing, Conceptualization. **Arnd Florack:** Writing – review & editing, Supervision, Methodology, Conceptualization.

#### Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Janet Kleber reports financial support was provided by Austrian Chamber of Commerce. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.actpsy.2025.105288>.

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#### Data availability

Data will be made available on request.

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