



To Punish or Not to Punish? The Impact of Tax Fraud Punishment on Observers' Tax Compliance

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Abstract

This article synthesizes insights from deterrence theory and social psychology literature on retributive justice to develop and test a theoretical model which predicts how and why observers' tax compliance intentions are influenced by knowledge of the punitive outcomes faced by individuals found guilty of tax fraud. We test our model experimentally on a sample of Canadian taxpayers and manipulate perceived responsibility for a fraud and whether a fraud perpetrator is punished. We show that observers' tax compliance increases when a fraud perpetrator is punished only when the perpetrator is perceived as blameworthy. The psychological process through which this positive influence operates is relatively complex, as it includes perceptions of punishment deservingness and affect. We also find that tax compliance decreases when a tax fraud perpetrator is unpunished, regardless of perceived blameworthiness. Our results are robust when we control for economic determinants known to influence fraud. The article concludes by discussing our findings' implications for fraud research and policy.

Keywords Fraud · Retributive justice · Punishment reactions · Punishment deservingness · Responsibility · Affective reactions · Tax compliance

Introduction

Tax evasion is an issue of national importance for governments worldwide as the difference between income taxes that are owed and income taxes that are collected—the “tax gap”—continues to widen (OECD, 2019). Tax evasion is a deliberate decision to commit fraud by reporting either less income than required or more deductions than allowed by law. A series of global tax scandals in recent years, such as those featured in the Panama Papers and Paradise Papers, have brought increased international scrutiny to the problem of tax evasion and its consequences. In these scandals, aggressive tax planning was undertaken by hundreds of taxpayers using offshore entities, with tax evasion likely in many cases. Prosecution for tax evasion in the scandals, however, was rarely attempted

by tax authorities (Smith & Reece-Greenhalgh, 2017; Wilson-Chapman et al., 2019). Much like these global incidents, many high-profile country-specific tax evasion scandals have also gone unprosecuted in recent years.¹ The impact of these unscrupulous tax schemes and the subsequent retributive failures by tax authorities on observers' tax compliance intentions has yet to be determined, and is the focus of this article.

In their review of ethics research on fraud, Trompeter et al. (2013) observe that extant fraud research focuses mainly on fraudulent financial reporting, specifically how financial statement fraud is perpetrated, discovered and prevented within organizations.² In accounting contexts, fraud research examines the role of auditors in detecting fraud (e.g., Dennis & Johnstone, 2018), why individuals may blow the whistle on a fraud (Berger et al., 2017), the interpersonal dynamics of engaging in a fraud (Free & Murphy, 2015), and the likelihood of a subordinate participating in a fraud when instructed to do so by an authority figure (Mayhew & Murphy, 2014). Furthermore, to detect and prevent fraud,

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¹ One of these is the KPMG-Isle of Man tax scheme in Canada, which we adapt in our experimental setting.

² Anand et al. (2015) similarly observe that much research examines fraud occurring within an organization, focusing on fraud perpetration and prevention.

Murphy and Dacin (2011) examine the various psychological pathways to fraud for individuals. What is missing from these research streams is an understanding of how a fraud perpetrator's punishment outcome influences observers.

Although there is an extensive tax ethics literature on tax compliance (e.g., Alm, 2019; Slemrod, 2019), this research stream has likewise failed to examine how and why taxpayers respond to knowledge of other taxpayers' punishments for tax fraud. Indeed, though fraud research tends to be situated in organizational contexts, fraud itself also occurs in a societal context. This wider social context is especially relevant to understanding income tax fraud. Ethics researchers have called for a greater acknowledgment of, and attention to, diversity in fraud research to help understand situational or contextual factors related to fraud (Anand et al., 2015). The research in this article responds to this imperative by examining how and why observers respond to punitive knowledge of others' tax frauds.

This objective is important because the extent to which a tax fraud perpetrator is punished may have wide-reaching societal consequences once other taxpayers learn of a fraud outcome. For example, there may be a deterrent effect on other taxpayers if retributive justice is served, such that they will fear punishment if they fail to comply with tax laws. Conversely, a lack of punishment may signal that there are unlikely to be meaningful consequences for tax non-compliance, thereby increasing non-compliance (Tyler, 2012). This possibility is consistent with the broader organizational ethics literature, which shows that ethical corruption can cause negative emotions, such as cynicism and pessimism, in observers (Pelletier & Bligh, 2008). There is also accounting ethics research suggesting that individuals can rationalize relatively benign financial misreporting behaviour by comparing themselves with others who engaged in egregious financial misreporting (Brown, 2014). A similar pattern could occur with respect to tax reporting decisions.

To understand how and why observers respond to knowledge about others' tax frauds and punishments (or lack thereof), we synthesize insights from the two dominant paradigms in tax compliance research: an economics paradigm and a psychology paradigm (Alm et al., 2012). The economics paradigm, grounded in deterrence theory (Allingham & Sandmo, 1972; Becker, 1968), suggests that individuals will misreport when they perceive that the relative benefits of misreporting outweigh the costs associated with misreporting. The psychology paradigm, associated with tax morale or intrinsic willingness to cooperate with an authority, suggests that individuals will misreport when they have low tax morale, i.e., when their psychological contract with an authority has been breached, such as when they perceive principles of retributive justice to have been violated (Alm et al., 2012; Feld & Frey, 2007). It follows therefore that when an observer responds to punitive knowledge of others'

frauds, the response can be motivated by both economic and psychological considerations.

To integrate these paradigms, we develop and test a theoretical model that draws on deterrence theory and Feather's (1998) social-cognitive process model of retributive justice. In our theoretical model, consistent with deterrence theory, there is a direct effect of a retributive outcome on observers' subsequent behaviour: seeing someone punished for an act prevents someone else from committing the same act (Piquero et al., 2011; Pratt et al., 2006). As well, our model allows for an indirect effect of punishment on observers' subsequent behaviour through a theoretical mechanism involving perceptions of responsibility for a transgression, punishment deservingness, and affective reactions.

Overall, our model posits direct and indirect effects of punishment occurrence on ethical intentions relating to tax compliance. The presence of these direct and indirect effects shows that the impact of another's punishment is more nuanced than suggested by deterrence theory. In our model, we suggest that the positive deterrent effect of another's punishment is conditional on the offender's degree of responsibility (blameworthiness) for their transgression. Our model thus predicts that perceived responsibility for a fraud and the occurrence of punishment for a fraud jointly influence observers' motivations to act ethically. Moreover, this indirect effect operates through a psychological pathway involving perceptions of punishment deservingness and an affective response. Our research responds to Anand et al. (2015), who call for the use of theories and insights from multiple theoretical perspectives to understand the impact of different types of fraud.

We tested our model experimentally using 399 Canadian taxpayers. Participants were given a scenario mimicking a fraudulent offshore tax scheme that surfaced in Canada in 2017, in which a number of wealthy taxpayers had invested funds in an offshore tax shelter. We manipulated whether or not the taxpayers were solely responsible for participating in the scheme (i.e., they initiated their participation in the scheme versus prompted by an accountant to participate) and whether or not the taxpayers were punished by the tax authority. We also measured perceptions of punishment deservingness and affective reactions, which follow from perceptions of responsibility for a transgression (Feather, 1998). Finally, we measured the tax compliance intentions of the participants after reading about the scheme. Overall, our model explains how and why observers respond to another's transgression.

Study results provide strong support for our model. We find that compliance will only increase when a punishment occurs if the perpetrator of the fraud is perceived as blameworthy for their transgression. Moreover, the psychological process by which this influence occurs is due to perceptions of deservingness and affective reactions. Thus, we show

that the potential deterrent impact of another's punishment is more nuanced than suggested by deterrence theory. Our results do not change when economic determinants known to influence tax compliance are controlled for (notably audit likelihood and detection likelihood; Allingham & Sandmo, 1972; Andreoni et al., 1998). We also find that compliance will decrease if a perpetrator of a fraud is unpunished, regardless of blameworthiness.

Our study contributes to ethics and tax compliance literatures in the following ways. First, we provide evidence that responsibility and punishment of others increases tax compliance not because of economic variables such as audit likelihood or detection likelihood, but from perceptions that the tax authority has been just in meting out punishment. Thus, we provide empirical clarity regarding the extent to which psychological considerations take precedence over economic considerations when informing tax misreporting decisions. Second, by providing empirical support for our theoretical model, derived largely through Feather's (1998) empirically unsubstantiated social-cognitive process model of retributive justice, we show the complex psychological process by which observers react to knowledge of another's fraud. Third, we contribute to the retributive justice literature by providing empirical evidence regarding how observers respond to others' punishment. This is significant since existing empirical literature on retributive justice examines how retributive justice perceptions can be strengthened but does not examine behavioural effects on others (Wenzel & Okimoto, 2016). Retributive justice has rarely been investigated in the context of tax compliance (Kirchler, 2007). Finally, we extend research on fraud by showing that the occurrence of a punishment is important if a fraud is to have any deterrent effect on observers.

In the next section, we review relevant literatures to situate our research and to develop our hypotheses. Section 'Methodology' describes our experiment, and section 'Results' reports our results. We conclude in section 'Discussion' with a discussion of our findings.

Background Literature and Hypotheses Development

Retributive Justice

Retributive justice is the notion that, "an offender, having violated rules or laws, deserves to be punished and, for justice to be reestablished, has to be punished in proportion to the severity of the wrongdoing" (Wenzel et al., 2008, p. 375). It involves subjective perceptions of the punishment of individuals or groups who have violated laws. Punishment is a negative outcome imposed on an offender by another party in response to a wrongdoing. Since retributive justice

requires that people get what they deserve, punishment is the mechanism for meting out justice to an offender (Wenzel & Okimoto, 2016). Importantly, a retributive punishment differs from and often occurs in addition to compensatory justice (Darley & Pittman, 2003), in which a wrongdoing is simply undone. In a case of tax fraud, repayment of taxes evaded is compensatory justice; punishment over-and-above the tax repayment, i.e. retributive justice, is meted out as a fine, which is sometimes accompanied by imprisonment.

Punishment repairs or satisfies a sense of justice because punishment is a moral necessity, felt as an emotion that drives action. Someone who violates agreed-upon rules, norms, and laws makes a symbolic statement about the values underlying these requirements and undermines community consensus about what is just. Thus, punishment can be a moral response to a wrongdoing, as it attempts to reestablish consensus and reassert the validity of the values threatened by the offense (Wenzel & Okimoto, 2016). In the case of tax fraud, punishment reasserts that tax fraud is morally wrong since tax laws are meant to be obeyed for the collective good of a society. By punishing someone who violates a tax law, the morality of the law itself is reinforced.

Individuals derive satisfaction from seeing others punished because they get an emotional reward, which can include feelings of satisfaction (Feather et al., 2013; Wenzel & Okimoto, 2016). Moreover, a key reason why individuals derive satisfaction or pleasure from others' punishment is because of their sense of deservingness, a perception of outcomes that are earned or achieved as a result of a person's actions (Feather, 1999). Punishment, a negative outcome, helps to restore a sense of justice between a victim and an offender if the negative outcome is seen to be deserved (Feather, 1999).

Retributive Justice and Tax Compliance

Justice (or fairness) is a construct with multiple comparison points based upon comparative judgments (Colquitt, 2001). These comparisons can involve outcomes (distributive justice), procedures (procedural fairness), interpersonal treatment (interactional justice), and laws that are broken and appropriately punished (retributive justice). In general, individuals' favourable justice perceptions lead to cooperative and compliant behaviour with an authority (Skarlicki & Folger, 1997). There is a sizeable literature on tax compliance intentions (e.g., Alm, 2019; Alm et al., 2012; Kornhauser, 2007; Slemrod, 2019) which identifies many relevant factors for the compliance decision, including dimensions of justice.

The influence of tax compliance intentions on perceptions of distributive justice (e.g., Kim et al., 2005; Trivedi et al., 2003), procedural justice (e.g., Verboon & Van Dijke, 2011; Worsham, 1996), and interactional justice (e.g., Farrar

et al., 2019; Wenzel, 2006) have been investigated. However, this literature has scarcely examined how retributive justice impacts tax compliance, despite many tax academics suggesting that publishing reports about the convictions of tax offenders in the media could reinforce tax compliance as an ethical behaviour by appealing to people's perceptions of retributive justice (Alm, 2012; Alm et al., 2012; Blank & Levin, 2010; Braithwaite & Braithwaite, 2000; Datt, 2016; Devos & Zackrisson, 2015; Lederman, 2003; Maciejovsky et al., 2012; Mazza, 2003; Raskolnikov, 2009; Wenzel et al., 2008). In the tax context, retributive justice refers to the propriety of the punishment for a tax fraud (Kirchler, 2007).

We are aware of just two empirical studies (Kogler et al., 2015; Mahangila & Holland, 2015) which examine the association between retributive justice and tax compliance. Kogler et al. (2015) conducted a survey of 476 Austrian self-employed taxpayers and found evidence of an indirect and positive association between retributive justice and tax compliance through perceptions of tax authority power and trust. Mahangila and Holland (2015) surveyed 257 owners of small business corporations in Tanzania who had committed the offence of keeping incomplete records. Participants were asked questions about retributive justice for their offenses and subsequent penalties for not paying their taxes on time. Results indicated a positive correlation between retributive justice and willingness to pay one's taxes on time.

Although these studies have provided preliminary insights into the relationship between perceptions of retributive justice and tax compliance, some empirical inconsistencies and theoretical gaps leave questions unanswered. Empirically, the results in these two studies are inconsistent, as both direct and indirect effects of retributive justice on tax compliance were found. Moreover, the contexts were different, as Kogler et al. (2015) investigated others' tax evasion whereas Mahangila and Holland (2015) investigated one's own administrative malfeasance. Furthermore, the generalizability of the results in both studies is limited, as respondents were self-employed. Theoretically, neither study explained how the presence or absence of punishment was expected to influence tax compliance and assumed that noncompliant taxpayers were punished. Much therefore remains to be learned about retributive justice in the tax context, and specifically how perceptions of retributive justice among the general public could influence their tax compliance intentions when others' tax fraud is known and goes either unpunished or punished. In the broader retributive justice literature, what remains to be understood is the interplay between psychological factors and institutional systems to uphold social and moral order (Wenzel & Okimoto, 2016).

To address these gaps, we developed a model of individuals' reactions to others' tax fraud punishment and the effect of the punishment on observers' compliance. The

development of the model and related hypotheses are presented below.

Model Development and Hypotheses

Deterrence theory suggests that seeing another person punished for a transgression will prevent an observer from committing the same act. After seeing the negative consequences to another as a result of being punished, a person's own fear of being punished will inhibit or deter them from engaging in similar unethical behaviours (Piquero et al., 2011; Pratt et al., 2006). Deterrence theory is focused on the way in which individuals perceive the relative costs and benefits associated with their behavioural choices (Pratt et al., 2006). If individuals perceive that the costs (i.e., sanctions) outweigh any benefits, then efforts to inform the public about sanctions and other retributive outcomes should serve as a deterrent. Applying these insights to a tax fraud setting, we expect that observers who learn that a tax evader is punished according to the law will be deterred from committing tax evasion themselves. We therefore make the following prediction:

Hypothesis 1 Observers' tax compliance will be greater when a tax evader is punished versus unpunished.

Our next hypotheses concern indirect effects of punishment on observers, derived primarily from Feather's (1998) social-cognitive process model of reactions to punishment. The central constructs in this model are responsibility for a transgression, punishment deservingness, and affective reactions. In the model, responsibility for a transgression leads to punishment deservingness, which in turn leads to affective reactions.³ Punishment deservingness is a perception that someone has earned a negative outcome, and affective reactions are emotional responses to punishment (Feather, 1998). We adapt the central tenets of Feather's (1998) model to the tax context.

Responsibility is synonymous with moral culpability (Graham et al., 1997). Unless a protagonist has been judged to cause harm, there is no reasonable basis for considering that person to be responsible or blameworthy. Moreover, if a protagonist has caused harm, their responsibility for that harm may be inferred as long as they acted without external influence (Schultz et al., 1981). Related, punishment refers to the consequences which a protagonist may suffer as a result of the harm for which they have been held responsible for causing (Schultz et al., 1981). Consequently, Feather

³ In Feather's (1998) model, seriousness of offense is endogenous to responsibility and harshness of penalty is endogenous to punishment deservingness. In our study, we control for these variables.

(1998) predicts that someone who is responsible for a transgression deserves to be punished for that transgression, as punishment presupposes a judgment of moral responsibility.

When applied to the tax context, these insights suggest that a perpetrator of a tax fraud who is judged to be responsible for their actions will be perceived to be deserving of punishment. Consequently, we make the following prediction:

Hypothesis 2 There will be a positive association between responsibility for a tax fraud and perceptions of punishment deservingness.

The next link in Feather's (1998) model is a positive association between punishment deservingness and affective reactions. Affect is a psychological term referring to both mood and emotion (Fiske & Taylor, 1991; Van den Bos, 2003). Previous literature posits that when individuals are in a good mood, they are more likely to engage in moral decision making (Kirchsteiger et al., 2006). Feelings associated with seeing an offender punished are associated with the degree to which an offender is judged to deserve a punishment: the more (or less) an offender is perceived to deserve a punishment, the more (or less) likely it is that an observer would report feeling satisfaction (or dissatisfaction) and pleasure (or displeasure) about the punishment (Feather, 1998).⁴ Thus, we would expect that perceptions of punishment deservingness for tax fraud are positively associated with affective reactions to punishment.

Feather's (1998) model assumes that offenders are punished. However, in the tax context, known tax evaders are not always punished, as was the case in the 2017 KPMG—Isle of Man tax scheme and other global tax scandals.⁵ We suggest that the positive association between deservingness and affective reactions is conditional on the presence or absence of a retributive outcome. That is, an observer will feel highly satisfied if a tax fraud perpetrator is punished but will feel less satisfied if a tax fraud perpetrator is unpunished. This suggestion is supported by Miller and Vidmar (1981, p. 146), who state, "a sense of injustice is likely to linger on unless punishment is administered." Thus, we expect the presence or absence of a retributive outcome to differentially influence observers' affective reactions: a sense of injustice and dissatisfaction could be resolved if a tax fraud perpetrator were punished, but not if the perpetrator

were to go unpunished.⁶ Consequently, we make the following prediction:

Hypothesis 3 The positive association between punishment deservingness and affective reactions will be moderated by the punishment outcome. Specifically, this association will be stronger when a tax fraud perpetrator is punished rather than unpunished.

Feather's (1998) model predicts why someone will react to a punishment, assuming a punishment occurs. But it does not predict any behavioural response subsequent to affective reactions related to that punishment. As there is tax compliance literature supporting a positive association between affect and tax compliance intentions (Christian & Alm, 2014; Maciejovsky et al., 2012; Privitera et al., 2021), we rely on this literature for our next prediction. Maciejovsky et al., (2012, p. 347), who conducted three studies investigating the role of affect on tax compliance behaviour, concluded, "that emotions ... affect behavioral intentions." Christian and Alm (2014) and Privitera et al. (2021) also found a positive association between several emotions and tax compliance intentions. As emotions are synonymous with affect (Fiske & Taylor, 1991; Van den Bos, 2003), these two studies found a positive association between affective reactions and tax compliance intentions. This positive association between affective reactions and tax compliance intentions is also supported by management scholarship in which affective experiences are posited to directly influence behaviours (Weiss & Cropanzano, 1996). We thus expect that affective reactions will similarly influence tax compliance intentions in a retributive context.⁷ More specifically, we expect that affective reactions will be an antecedent of taxpayers' compliance intentions such that taxpayers with

⁴ We examine affect as a positive (pleasure) or negative (displeasure) response related to an event. This is consistent with similar research examining the role of affect in judgment and decision making (e.g., Mercer, 2005).

⁵ The Investigative Consortium of Investigate Journalists documents that some, but not all, tax authorities punished parties identified in the Panama Papers (Wilson-Chapman et al., 2019).

⁶ We do not expect the presence or absence of a retributive outcome to moderate the association between responsibility and deservingness. Feather (1996, p. 273) notes that deservingness affects judgments about a penalty, which implies that a penalty (punishment) occurs after deservingness perceptions are formed. As shown in our supplemental analysis, there is no significant interaction effect of punishment occurrence and responsibility on deservingness.

⁷ Tax compliance intentions are a proxy for tax behavior. As Bobek et al. (2013, p. 458) state, "Concerns that behavioral intentions might not map directly to taxpayers' actual behavior in a situation are partially mitigated by the fact that a joint investigation of actual and hypothetical tax evaders (Webley et al., 2001) indicated that both groups had similar attitudes and motivations". As well, there is strong empirical support (Sheeran, 2002) for several psychological models, including the theory of planned behavior (Carpenter & Reimers, 2005), that affirm that an individual's intention is the strongest predictor of their behavior. In the tax compliance literature, it is common to measure tax compliance intentions rather than actual tax behavior due to social desirability bias (e.g., Blanthorne & Kaplan, 2008; Bobek et al., 2013; Farrar et al., 2019; Verboon & Van Dijke, 2007).

feelings of satisfaction and pleasure are expected to have higher tax compliance intentions. This discussion leads to our fourth hypothesis:

Hypothesis 4 There will be a positive association between taxpayers' affective reactions to the punitive outcomes experienced by other taxpayers and their own tax compliance intentions.

Overall, we predict a moderated mediation model such that there is an indirect effect of a perpetrator's responsibility for tax fraud on observers' tax compliance intentions through perceptions of punishment deservingness and affective reactions. Moreover, we predict that the occurrence of a tax fraud punishment outcome will moderate the relation between punishment deservingness and affective reactions, such that compliance will be higher if a tax offender is actually punished, and lower if a tax offender is unpunished. This discussion leads to our fifth hypothesis:

Hypothesis 5 There will be an indirect effect of responsibility on tax compliance intentions through punishment deservingness and affective reactions. Moreover, this mediation effect will be moderated by punishment occurrence.

Figure 1 visually depicts the model discussed above. The theoretical model is included in Panel A, while the study-specific model is included in Panel B.⁸

Methodology

To test our model, we use an experimental approach, which allows us to isolate several variables of interest to observe their effect on other variables. Below we discuss the design, participants, experimental procedures and task, independent variables, and dependent variables for the experiment.

Design

The experiment utilized a 2 × 2 between-participants design. The design fully crossed perceived *responsibility* for the tax fraud (lower versus higher) and *punishment occurrence* (present versus absent).

⁸ These aforementioned streams of literature do not enable us to predict direct effects of responsibility, punishment occurrence, or punishment deservingness on tax compliance intentions, nor do they allow us to predict a direct effect of responsibility on affective reactions. Nevertheless, we investigate non-hypothesized effects in a subsequent supplemental analysis.

Participants

Participants were Canadian taxpayers, recruited by a consumer research firm, Prolific. Prolific participants provide high quality responses that are comparable to participants on Amazon Mechanical Turk (Peer et al., 2017). To further ensure high quality data, we required participants to have at least a 95% approval rate, as done in previous research using online participants (Collum et al., 2021). To be representative of a typical taxpayer population, we requested that our participants be randomly selected according to age and gender. Age was restricted to participants between the ages of 20 and 70. We requested 100 participants per experimental condition and received a total of 399 usable responses.⁹ Descriptive statistics for demographic measures are provided in Table 1. As shown in Table 1, 53% of our sample is male, and the average age of participants is 34.8 years.¹⁰

Experimental Procedures and Task

Potential respondents received an email invitation from the consumer research firm, inviting them to participate in a questionnaire about how people respond to accounts of tax fraud in the news. Individuals who wanted to participate clicked on a link and were randomly directed to one of the experimental conditions. Participants were given a cash payment of £1.15. This payment represents approximately £6.90 per hour and is above the minimum rate of £5.00 per hour.

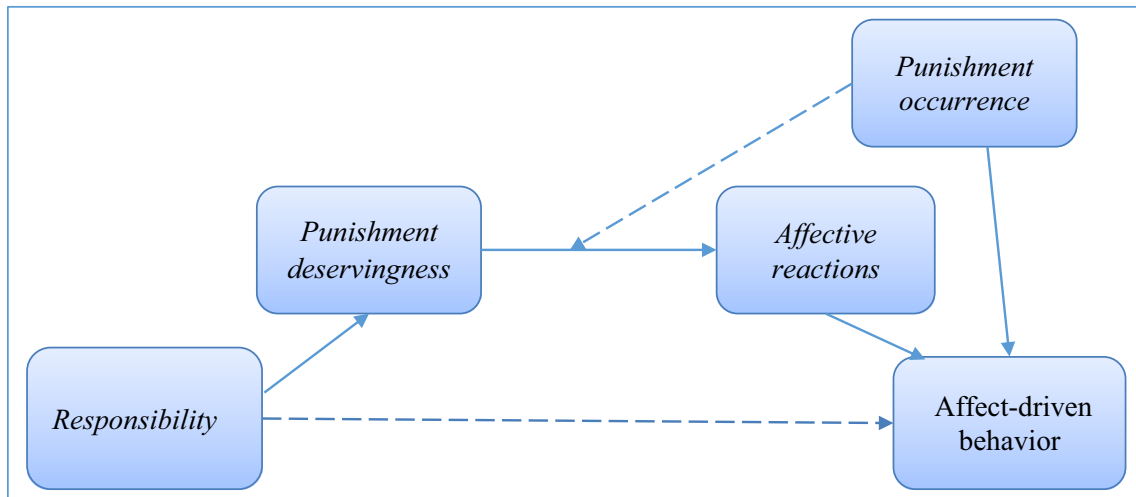
Participants read about a local entrepreneur named Chris who owns a food truck. No pronouns were given with respect to Chris to ensure gender neutrality. Chris receives cash from customers and is in the process of preparing the year's tax return. On the next screen, participants read a news story about wealthy individuals who invested funds in a company on the Isle of Man paying less in taxes than they would have paid if the company was registered in Canada.¹¹ The Canadian tax authority (CRA) subsequently

⁹ Sample sizes per cell varied from 97 to 102. Our Qualtrics software indicated that the quotas had been reached when the total participants were at 399 rather than 400.

¹⁰ Our sample appears reasonably representative of the Canadian population with respect to age and income. According to Statistics Canada (2021a, 2021b), the median age for all Canadians in 2020 was 40.9. The median age of our sample is 32.0, but includes individuals ages 20–70. In 2019, the median income in Canada by age group was \$41,700 (ages 25–34), \$51,500 (ages 35–44), \$54,200 (ages 45–54), \$42,800 (ages 55–64), and \$30,400 (age 65 and over) (Statistics Canada 2021a, 2021b). When we compared our data segmented similarly by age group, the median score for income category was 3 (\$50,000–\$74,999) for all age categories except age 65 and over, which had a median score of 2 (\$25,000–\$49,999).

¹¹ In our experimental design, we decided not to manipulate the magnitude of the dollars evaded. This design choice was made as we are more interested in whether or not a punishment occurs. Furthermore, not manipulating the magnitude of dollars allows for a cleaner experi-

Panel A: Theoretical Model



Panel B: Study-Specific Model

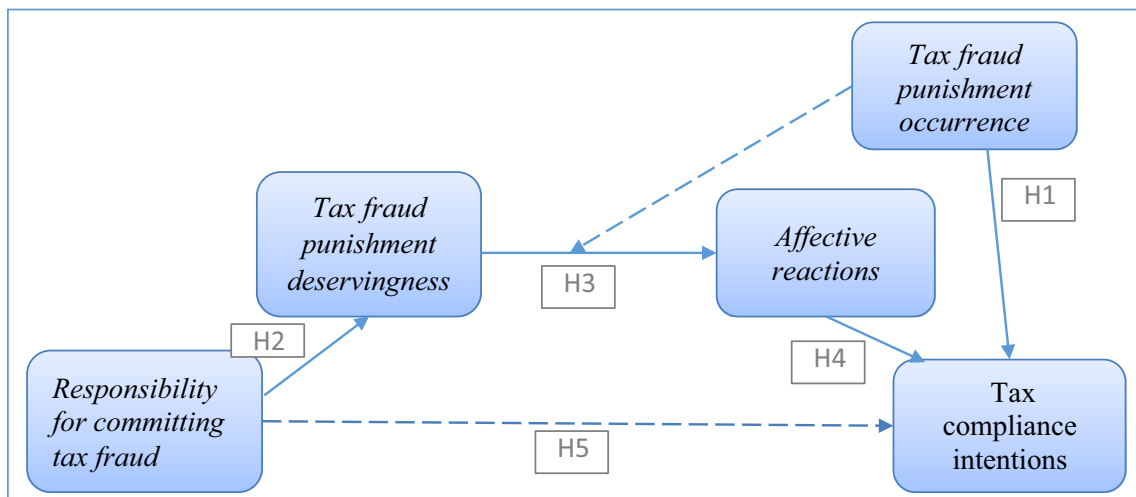


Fig. 1 Model diagrams

audited these individuals and discovered that the tax shelter was a bogus arrangement that was intended to deceive the Canadian government. As discussed below, the scenario contained the independent variables of responsibility and punishment occurrence. After reading the news story, participants were instructed on the screen to imagine that they were Chris when completing several questions about Chris's

tax compliance intentions, manipulation checks, punishment deservingness perceptions, affective reactions, and others relating to control variables and demographic measures. The 'Appendix' contains the experimental scenarios and questionnaire.¹²

Footnote 11 (continued)

mental design that reduces a possible confound between magnitude of dollars and punishment.

¹² Except for the four tax compliance statements and attention-check and manipulation check questions, all other questionnaire items prior to the demographic measures were presented in random order across several screens. Across the entire instrument, for any measures with multiple items, the groups of items were presented in random order.

Table 1 Demographic profile statistics

Sample size	<i>n</i> = 399
Gender	
Male	<i>n</i> = 210 (52.6%)
Female	<i>n</i> = 187 (46.9%)
Other	<i>n</i> = 2 (0.5%)
Age	Mean = 34.8 years Std Dev = 8.9 years
Work experience	Mean = 11.3 years Std Dev = 8.7 years
Aware of news stories about tax dodges?	Yes = 232 (58.1%)
Aware of the Canada-Isle of Man tax dodge?	Yes = 31 (7.8%)
Income	
Less than \$25,000	<i>n</i> = 67 (16.8%)
Between \$25,000 and \$50,000	<i>n</i> = 90 (22.6%)
Between \$50,001 and \$75,000	<i>n</i> = 94 (23.6%)
Between \$75,001 and \$100,000	<i>n</i> = 72 (18.0%)
Greater than \$100,000	<i>n</i> = 55 (13.8%)
Prefer not to answer	<i>n</i> = 21 (5.3%)
Highest level of education completed	
Less than high school	<i>n</i> = 5 (1.3%)
High school	<i>n</i> = 44 (11.0%)
Associate degree	<i>n</i> = 36 (9.0%)
Bachelor's degree	<i>n</i> = 216 (54.1%)
Master's degree	<i>n</i> = 62 (15.5%)
Professional degree or doctoral degree	<i>n</i> = 25 (6.3%)
Other	<i>n</i> = 11 (2.8%)
Political beliefs	
Very conservative	<i>n</i> = 11 (2.8%)
Moderately conservative	<i>n</i> = 35 (8.8%)
Slightly conservative	<i>n</i> = 29 (7.3%)
Middle of political spectrum	<i>n</i> = 74 (18.5%)
Slightly liberal	<i>n</i> = 67 (16.8%)
Moderately liberal	<i>n</i> = 107 (26.8%)
Very liberal	<i>n</i> = 76 (19.0%)
Tax preparer	
Myself	<i>n</i> = 232 (58.1%)
Spouse/partner	<i>n</i> = 37 (9.3%)
Paid preparer	<i>n</i> = 101 (25.3%)
Other	<i>n</i> = 29 (7.3%)

In this design and process, we followed the vignette construction suggestions of Weber (1992) and Hughes and Huby (2004). These suggestions include placing the ethical situation in a business context, which we did by providing information about an entrepreneur preparing their tax return; making the scenarios relevant, which we did by adopting information and language from actual reporting on the 2017 KPMG—Isle of Man tax scheme and using actual punishments for the offences prescribed by Canadian tax law and the Criminal Code of Canada; using a theoretical

framework when constructing scenarios, which we did by integrating Feather's (1998) retributive justice model; keeping the vignettes short, so as to maintain reader interest; and pre-testing the wording of the vignette on several hundred adult taxpayers, in which they had the opportunity to provide open-ended feedback.

Independent Variables

Responsibility

In order to operationalize *responsibility*, we described how the taxpayers in our scenario made the decision to invest in the tax scheme. We manipulated *responsibility* by varying the extent to which taxpayers made their decision with external influence (Schultz et al., 1981). In the higher *responsibility* condition, the taxpayers made their decision without guidance from an expert, whereas in the lower *responsibility* condition, the taxpayers were advised by a tax expert.¹³ Respondents in the higher *responsibility* condition were told, "Several years ago, a number of wealthy individuals read a brochure about paying less taxes by investing funds in a company on the Isle of Man. The individuals acted on their own, didn't ask anyone for advice, and made the investment." Respondents in the lower *responsibility* condition were told, "Several years ago, a large accounting firm approached a number of wealthy clients. The accounting firm told them they could pay less taxes by investing funds in a company on the Isle of Man. The clients followed this advice, and made the investment."¹⁴

Punishment Occurrence

Punishment occurrence was operationalized by describing actual punishments for tax fraud as allowed by Canadian tax law and the Criminal Code of Canada, which is a fine and jail sentence.¹⁵ Although a jail sentence is not mandatory,

¹³ Responsibility is manipulated as an ex-ante construct, as opposed to ex-post. Particularly, offenders are perceived as being responsible for the tax fraud ex-ante, whether or not the offender accepts this responsibility ex-post. In the statistical analysis, the higher responsibility condition is coded as '+1', whereas the lower responsibility condition is coded as '0'.

¹⁴ A news story (Cashore, 2015) reports that one of KPMGs clients who invested in the Isle of Man tax scheme said that he was unaware of Canadian tax laws when he emigrated from South Africa in the mid-1990s. The taxpayer said, "I went to the best people in the country. I'm being drawn into this, and I don't think I should have been in the first place." It is unclear whether an observer would perceive that a client in this type of situation is responsible for the tax fraud, or not.

¹⁵ In subsection 239(1) of the Income Tax Act, R.S.C. 1985 c. 1 (5th Supp.), and subsection 380(1) of the Criminal Code of Canada, R.S.C. 1985 c. C-46.

it commonly accompanies guilty verdicts in tax frauds of high magnitude, as could have happened in the KPMG—Isle of Man tax dodge. For this reason, we included both forms of punishment—a fine and a fine plus jail time—in the scenario. We also manipulated *punishment occurrence* by stating that the taxpayers who participated in the tax scheme were either punished or unpunished.¹⁶ In all conditions, the news story first stated, “The taxpayers had to repay all the taxes they evaded, which is a standard practice and not a punishment.” We stated this fact to distinguish between compensatory justice, which in the tax context is a repayment of taxes, and retributive justice, which involves a punishment over-and-above a tax repayment. Then, in the condition where the punishment occurred, the news story stated, “Moreover, the taxpayers were then punished by being fined and sentenced to jail for several years.” In the condition where the punishment did not occur, the news story stated, “However, the taxpayers were never punished. They were neither fined nor sentenced to jail.”¹⁷

Dependent Variables

The dependent variables are *punishment deservingness*, *affective reactions*, and taxpayers' *compliance intentions*. We developed a three-item measure of *punishment deservingness*, adapted to the tax context. As Feather (1996, 1998) used a one-item measure of *punishment deservingness*, our measure was more robust.¹⁸ The items were as follows: “The taxpayers who invested in the tax scheme deserve to be punished”; “There should be negative consequences for the taxpayers who participated in the tax scheme”; and, “The taxpayers who invested in the tax scheme need to be held accountable for their wrongdoing.” Participants responded to each statement using a 7-point scale with endpoints of ‘strongly disagree’ (1) and ‘strongly agree’ (7). The Cronbach alpha of this three-item measure is 0.87. We used the average score of these items in our subsequent analyses.

Participants responded to four statements about *affective reactions*, as follows: “After the CRA’s audit, what happened

to the taxpayers makes me angry”; “After the CRA’s audit, what happened to the taxpayers makes me satisfied”; “After the CRA’s audit, what happened to the taxpayers makes me disappointed”; and, “After the CRA’s audit, what happened to the taxpayers makes me pleased.” Participants responded to each statement using a 7-point scale with endpoints of ‘strongly disagree’ (1) and ‘strongly agree’ (7). These items are derived from Feather (1998, 1999) and Feather and Sherman (2002), who contrast these affective reactions. The first and third items are reverse-scored, such that higher scores indicate greater satisfaction and pleasure. The Cronbach alpha of this measure of *affective reactions* is 0.83. We used the average score of the participants’ responses in our subsequent analyses.

Participants responded to four statements about tax *compliance intentions* as follows: “Chris will not declare all the cash to the CRA”; “Chris would be tempted to not report all of the cash receipts on the tax return”; “Chris is unlikely to report all of the cash earnings to the CRA”; and, “Under the circumstances, Chris might not report all of the cash earnings on the tax return.”¹⁹ Participants responded to each statement using a 7-point scale, with endpoints of ‘strongly disagree’ (1) and ‘strongly agree’ (7). This measure is based on Farrar et al. (2019). The Cronbach alpha of this measure is 0.92. We reverse-coded this variable; higher scores indicate higher *compliance intentions* and lower scores indicate lower *compliance intentions*. We used the average score of participants’ responses in the subsequent analyses.

Control Variables

Feather’s (1998) model includes seriousness of offense and harshness of penalty as ancillary constructs. These may influence perceptions of *punishment deservingness*, which in turn may influence *affective reactions*. Accordingly, we controlled for these variables. We developed a two-item measure of *tax fraud severity*, also based on Feather (1998). The items were, “I think tax evasion is a serious offense”, and “I think tax evasion is a severe crime.” Participants responded to each statement using a 7-point scale with endpoints of ‘strongly disagree’ (1) and ‘strongly agree’ (7). The Cronbach alpha of this two-item measure is 0.81. We used the average score of the participants’ responses in our subsequent analyses.

We also developed a three-item measure of *harshness of punishment*, based on Feather (1998). The items were as

¹⁶ In the statistical analysis, the condition where punishment occurred is coded as ‘+1’, whereas the condition where punishment did not occur is coded as ‘0’.

¹⁷ This manipulation intentionally does not make clear whether the tax authority chose not to prosecute the tax evaders, or chose to prosecute the tax evaders but was unsuccessful in the prosecution attempt, as doing so could limit the generalizability of our findings. Thus, the manipulation allows for both possibilities. In the Isle of Man tax dodge, the Canadian tax authority chose not to prosecute the tax evaders. We discuss this issue further in the final section of the manuscript.

¹⁸ In Feather (1996, 1998), participants rated the extent to which punishment was deserving using a 7-point scale with endpoints of ‘doesn’t deserve it at all’ (1) and ‘deserves it a lot’ (7).

¹⁹ The tax compliance statements were solicited from a third-person perspective, which is common in tax compliance research, as it minimizes participant discomfort and reduces the risk that social desirability bias would contaminate the results (Armocost et al., 1991). Similarly, respondents were told to imagine that they were Chris when responding to all other questions.

follows: “What do you think of the end result to the taxpayers after the CRA’s investigation?”; “What do you think of the final outcome the taxpayers received from the CRA?”; and, “What do you think of the final consequence to the taxpayers?” Participants responded to each statement using a 7-point scale with endpoints of ‘much too lenient’ (1) and ‘much too harsh’ (7). The Cronbach alpha of this three-item measure is 0.97. We used the average score of the participants’ responses in our subsequent analyses.

Consistent with prior tax compliance research, we also included demographic measures in the instrument pertaining to gender, age, work experience, income, political beliefs, education, tax preparer, audit likelihood, and detection likelihood (Bobek et al., 2007; Farrar et al., 2019; Verboon & VanDijke, 2007). We also asked participants if they had pre-existing knowledge of any news stories about tax dodges, and if they were aware of the specific Isle of Man tax scheme, prior to taking the survey. As shown on Table 1, over half of the participants (58.1%) were aware of tax dodges, but only a small percentage (7.8%) were aware of the specific Isle of Man tax dodge.²⁰ Finally, we asked participants if tax evasion could ever be justified. This question was motivated by Molero and Pujol (2012), who suggest that taxpayers can justify tax evasion if they have a grievance pertaining to others’ tax evasion.

As shown in our correlation analysis in Table 2, there were ten control variables that were significantly correlated with tax *compliance intentions*: education, income, political beliefs, tax preparer, tax fraud severity, harshness of punishment, audit likelihood, detection likelihood, whether the participant had ever been audited, and the extent to which tax evasion could ever be justified. To test out first hypothesis (H1), we first report the results of an ANOVA. We footnote the ANCOVA results as the results of the ANOVA do not differ significantly from the ANCOVA. We also include these ten covariates in our conditional process analysis and supplemental analysis, but to streamline the reporting of this analysis we do not report the covariates as none of the results in that analysis differ significantly from when these covariates are included. All subsequent conditional process analysis, including supplemental analysis, is performed using these ten covariates, and the results presented include the influence of these ten covariates.²¹

²⁰ Given that the Isle of Man tax dodge was publicized in 2017, and participants completed this survey in 2020, it is reasonable that few participants were aware of it. As well, given the robustness of our subsequent results, it is likely that the results would be even stronger if the research were conducted while a media story about a tax dodge was publicized.

²¹ As reported in Panel B of Table 3, the index of moderated mediation when all ten covariates are present is 0.049 and is significant, as a bootstrap confidence interval is entirely above zero (0.002–0.1283). The index of moderated mediation when no covariates are present

Results

Manipulation Checks

Both independent variables were manipulated and required manipulation checks. To assess the effectiveness of the *responsibility* manipulation, participants responded to two Likert-based statements as follows: “The taxpayers have only themselves to blame for investing in the tax shelter scam;” and, “The taxpayers felt solely responsible for what happened with the tax shelter.” The two questions were placed just after the dependent variable and ensured participants had read the scenario carefully. Participants responded to each statement using a 7-point scale with endpoints of ‘strongly agree’ (1) and ‘strongly disagree’ (7). The mean score for statements (1) and (2) in the lower *responsibility* condition was 4.51/7 and 3.18/7, respectively, and 5.76/7 and 4.03/7 in the higher *responsibility* condition, respectively. These responses are in the expected direction, and both differences are significant ($F = 54.7$, $p < .01$ and $F = 25.2$, $p < .01$, respectively). Thus, *responsibility* was effectively manipulated across both conditions.

As the *punishment occurrence* moderator variable was manipulated, we asked an attention-check question that also served as a manipulation check. Participants were asked, “After the CRA’s audit, what happened to the taxpayers?” Participants had to answer this question correctly before proceeding.²² The ‘Appendix’ contains the attention and manipulation checks.

Tests of Hypotheses

To test our first hypothesis (H1), that observers’ tax compliance will be greater when a tax evader is punished versus unpunished, we conducted an ANOVA with tax compliance intentions as the dependent variable, and punishment occurrence and responsibility as the independent variables. As shown in Table 3, Panel A, there is a significant main effect of punishment occurrence on compliance intentions ($F = 12.13$, $p < .01$). Furthermore, as shown in Table 3, Panel C, compliance is higher when an offender is punished

Footnote 21 (continued)

is 0.101, and is also significant, as a bootstrap confidence interval is entirely above zero (0.013–0.239).

²² If participants answered the attention check question incorrectly, they are prompted that the response is incorrect, and are provided with a hint. Thus, participants have another opportunity to answer the attention check question and continue with the experiment (c.f. Berger et al., 2020). Among participants, 2.3% (or 9) of them fail this attention check question once. As analyses yield identical statistical inferences if these responses are excluded, we include all responses in our analyses.

Table 2 Correlation matrix

	Demographic & other control variables																		
	Responsibility (IV)	Affective reactions (DV)	Punishment desirability (DV)	Tax compliance intentions (DV)	Gender	Age	Work exp.	Educ.	Income	Political beliefs	Aware of tax dodges	Aware of this tax dodge	Tax preparer	Harshness of penalty	Tax evasion severity	Audit likelihood	Detection likelihood	Ever been audited	Justify tax evasion
Punishment occurrence (IV)	+0.01	+0.28*	+0.18*	+0.17*	-0.01	+0.04	+0.01	+0.06	+0.02	+0.05	-0.01	+0.05	+0.03	+0.64*	+0.04	-0.01	+0.05	-0.01	+0.04
Responsibility (IV)		+0.09	+0.12*	+0.03	-0.13*	-0.02	-0.02	-0.01	-0.14*	-0.04	-0.05	-0.06	-0.04	-0.03	+0.02	+0.07	+0.07	-0.02	+0.04
Affective reactions (DV)			+0.02	+0.20*	+0.01	+0.01	+0.01	-0.01	+0.01	-0.06	+0.09	+0.07	-0.09	+0.23*	+0.07	+0.12*	+0.20*	-0.01	-0.02
Punishment desirability (DV)				+0.11*	-0.06	-0.17*	-0.16*	+0.11*	+0.01	+0.07	-0.07	+0.01	+0.05	-0.16*	+0.35*	+0.05	+0.09	+0.11*	-0.10
Tax compliance intentions (DV)					+0.01	-0.10	-0.09	-0.10*	-0.12*	+0.13*	+0.03	+0.07	+0.10*	+0.13*	+0.13*	+0.13*	+0.43*	+0.14*	-0.28*
Gender						+0.04	+0.02	+0.10*	-0.12*	+0.23*	-0.05	+0.07	+0.06	-0.01	-0.01	+0.01	-0.07	-0.01	-0.03
Age							+0.77*	-0.14*	+0.12*	+0.01	+0.03	-0.08	-0.02	+0.08	-0.06	-0.07	-0.11*	-0.05	-0.07
Work exp.								-0.22*	+0.13*	+0.01	+0.05	-0.07	-0.11*	+0.09	-0.12*	-0.08	-0.10*	-0.11*	-0.08
Education									+0.14*	+0.04	+0.05	+0.01	+0.08	-0.02	+0.15*	-0.01	+0.01	+0.03	-0.04
Income										-0.10*	+0.02	+0.01	-0.15*	+0.03	-0.01	-0.03	-0.01	-0.08	+0.02
Political beliefs											-0.08	+0.08	+0.05	-0.11	+0.02	-0.14*	-0.06	+0.11*	-0.09
Aware of tax dodges												+0.19*	+0.10*	+0.03	-0.17*	-0.01	+0.06	+0.04	+0.01
Aware of this tax dodge													+0.05	+0.01	-0.11*	-0.07	-0.01	+0.03	+0.01
Tax preparer														-0.03	+0.05	+0.04	+0.11*	+0.11*	-0.02
Harshness of penalty															-0.18*	+0.13*	+0.06	-0.02	+0.21*

Table 2 (continued)

Independent and dependent variables			Demographic & other control variables															
Responsibility (IV)	Affective reactions (DV)	Punishment desirability (DV)	Tax compliance intentions (DV)	Gender	Age	Work exp.	Educ.	Income	Political beliefs	Aware of tax dodges	Aware of this tax dodge	Tax preparer	Harshness of penalty	Tax evasion severity	Audit likelihood	Detection likelihood	Ever been audited	Justify tax evasion
Tax evasion severity											+0.28*					+0.22*	+0.06	-0.34*
Audit likelihood																+0.50*	-0.13*	-0.04
Detection likelihood																	+0.03*	-0.05
Ever been audited																		-0.06
Justify tax evasion																		

*Pearson correlation coefficient significant at the 0.05 level, two-tailed

Table 3 The impact of punishment occurrence and responsibility on compliance intentions

Panel A: ANOVA of punishment occurrence and responsibility on compliance ^a					
	SS	Df	MS	F	p
Punishment occurrence	32.93	1	32.93	12.13	<0.01
Responsibility	0.98	1	0.98	0.36	0.55
Punishment occurrence × responsibility	1.98	1	1.98	0.73	0.39
Error	1072.21	395	2.71		

Panel B: descriptive statistics for affective reactions				
Mean (standard deviation)				
		Responsibility		
		Higher	Lower	Total
Punishment	Present	4.77 (1.32) n = 102 Cell 1	4.34 (1.27) n = 97 Cell 2	4.56 (1.31) n = 199
	Absent	3.82 (1.35) n = 102 Cell 3	3.75 (1.36) n = 98 Cell 4	3.79 (1.35) n = 200
	Total	4.29 (1.41) n = 204	4.04 (1.34) n = 195	4.17 (1.39) n = 399

Panel C: descriptive statistics for compliance intentions				
Mean (standard deviation)				
		Responsibility		
		Higher	Lower	Total
Punishment	Present	4.24 (1.68) n = 102 Cell 1	4.00 (1.72) n = 97 Cell 2	4.12 (1.70) n = 199
	Absent	3.53 (1.64) n = 102 Cell 3	3.57 (1.54) n = 98 Cell 4	3.55 (1.31) n = 200
	Total	3.89 (1.70) n = 204	3.79 (1.64) n = 195	3.84 (1.67) n = 399

^aIn an ANCOVA with the ten significant covariates, the main effect of punishment occurrence on tax compliance intentions remains significant ($F=4.06, p=.045$). The adjusted R -squared of the ANOVA (ANCOVA) is 0.025 (0.319).

One-tailed t -tests to determine if each cell mean is different from the overall mean (3.84) are as follows:

Cell 1 → $t=2.49, p<.01$ Cell 2 → $t=0.99, p=0.16$ Cell 3 → $t=-1.86, p=0.033$ Cell 4 → $t=-1.68, p=0.049$

(mean of 4.12/7) versus unpunished (mean of 3.55/7). These results support H1.²³ The results of the ANOVA in Table 3, Panel A, show that there is not a significant main effect of responsibility on tax compliance intentions, nor is there a significant interaction effect of responsibility and punishment occurrence on tax compliance intentions. These initial findings are consistent with our theoretical model, which predicts neither a direct effect of responsibility nor

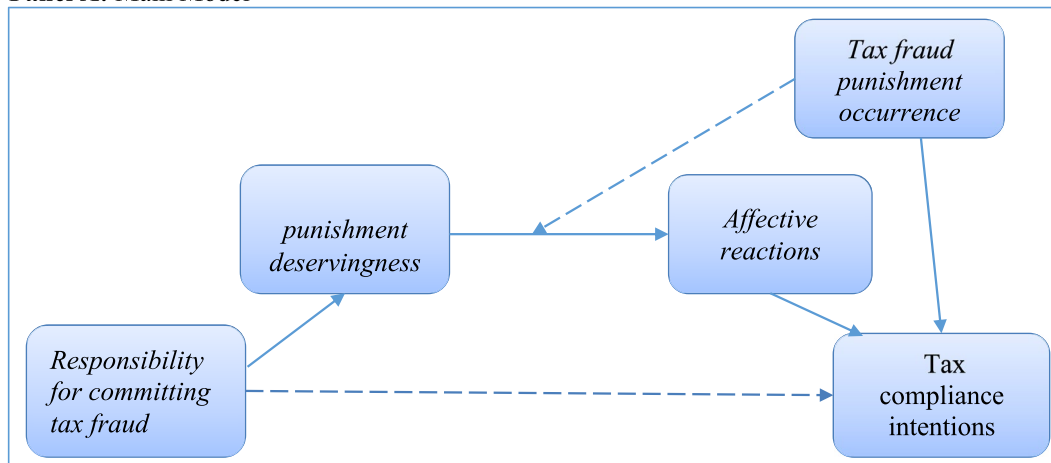
a significant interaction effect of responsibility and punishment on tax compliance intentions.

To test our remaining hypotheses, we performed a conditional process analysis (Hayes, 2018a). A conditional process analysis allows researchers to understand whether an indirect effect (mediation) is dependent on another variable (moderation). It is a form of regression analysis in which all paths between constructs are able to be analyzed, even if a particular path is not specified in a theoretical model (Hayes, 2018b).

In our study, *tax compliance intentions* is the dependent variable, *responsibility* and *punishment occurrence* are independent variables, and perceptions of *punishment deservingness* and *affective reactions* are mediators. We allow punishment occurrence to directly and indirectly influence tax

²³ In an ANCOVA with the ten significant covariates, the main effect of punishment occurrence on tax compliance intentions remains significant ($F=4.06, p=.045$). The adjusted R -squared of the ANOVA (ANCOVA) is 0.025 (0.319).

Panel A: Main Model



Panel B: Total Sample Primary Statistical Analysis

Primary Paths	Coeff.	SE	p-value
<i>Responsibility</i> → <i>Punishment Deservingness</i> (H2)	0.33	0.14	0.02
<i>Punishment Deservingness</i> x <i>Punishment Occurrence</i> → <i>Affective Reactions</i> (H3)	1.31	0.08	< .01
<i>Affective Reactions</i> → <i>Tax Compliance Intentions</i> (H4)	0.20	0.06	< .01
<i>Responsibility</i> → <i>Tax Compliance Intentions</i>	0.01	0.16	0.95
<i>Punishment Occurrence</i> → <i>Tax Compliance Intentions</i> (H1)	0.37	0.17	0.03
Paths not hypothesized			
<i>Responsibility</i> → <i>Tax Compliance Intentions</i>	0.01	0.16	0.95
<i>Responsibility</i> → <i>Affective Reactions</i>	0.16	0.10	0.11
<i>Punishment Deservingness</i> → <i>Tax Compliance Intentions</i>	0.11	0.06	0.07
Moderated mediation results (H5)			
Index of moderated mediation = .090 (SE 0.05). A 95% bootstrap confidence interval based on 10,000 bootstrap samples was entirely above zero (0.010 to 0.213), meaning the moderated mediation model is significant. The conditional indirect effects of <i>Responsibility</i> on <i>Tax Compliance Intentions</i> through <i>Punishment Deservingness</i> and <i>Affective Reactions</i> differ significantly according to <i>Punishment Occurrence</i> condition.			
Conditional Indirect Effects of Responsibility on Tax Compliance Intentions through Punishment Deservingness and Affective Reactions			
NO PUNISHMENT – indirect effect coefficient of -0.020 (standard error 0.01), confidence interval entirely below zero (-0.055 to -0.007)			
PUNISHMENT - indirect effect coefficient of +0.029 (standard error 0.020), confidence interval entirely above zero (0.001 to 0.076)			

Fig. 2 Conditional process analysis

compliance intentions, as depicted in our model diagram, since we predict that punishment occurrence will directly influence tax compliance intentions and will indirectly influence tax compliance with a moderating effect on the path from punishment deservingness to affective reactions.²⁴ Results from our analysis are in Fig. 2, which contains a

visual depiction of the model being analyzed (Panel A), as well as a summary of the statistical results (Panel B). We observe initially that the direct path from punishment occurrence to tax compliance intentions remains positive (coefficient of +0.37) and significant ($p = .03$). This finding is consistent with the initial main effect shown in the ANOVA as reported in Table 3, Panel A.

Our second hypothesis (H2) predicts a positive association between *responsibility* for a tax fraud and *punishment deservingness*. As shown in Fig. 2, Panel B, this hypothesis is accurate, as there is a significant and positive path

²⁴ Our model corresponds to Hayes' Model 91 except that we also have a direct path from the moderator to the dependent variable. We use cmatrix syntax to test our model (Hayes, 2018a, p. 653).

between *responsibility* and *punishment deservingness* (coefficient of +0.33, $p=0.02$).

To provide additional directional support for H2, we compared respondents' perceptions of *punishment deservingness* by levels of *responsibility* (not tabulated). Respondents in the lower *responsibility* condition had mean *punishment deservingness* score of 5.02/7, whereas respondents in the higher *responsibility* condition had a mean *punishment deservingness* score of 5.35/7. This difference is significant ($t=-2.45$, $p=0.01$, one-tailed), and in the expected direction. Thus, respondents in the higher *responsibility* condition perceived the tax offenders in the scenario to be significantly more deserving of punishment than the respondents in the lower *responsibility* condition.

Our third hypothesis (H3) predicts that the positive association between *punishment deservingness* and *affective reactions* will be moderated by *punishment occurrence*, such that this association will be stronger when a tax fraud perpetrator is punished than when they go unpunished. To test this hypothesis, we first examined whether there was a significant interaction effect between *punishment deservingness* and *punishment occurrence* on *affective reactions*. As shown on Fig. 2, Panel B, this interaction effect is significant ($p<.01$), which provides initial support for H3.

We then compared respondents' *affective reactions* by *punishment occurrence* (Table 3, Panel B). Support for H3 would occur if respondents in the scenario where the tax fraud perpetrators were punished had significantly higher *affective reactions* (satisfaction and pleasure) than respondents in the scenario where the tax fraud perpetrators went unpunished. Respondents in the 'no punishment' condition had a mean score of 3.79/7 for *affective reactions*, whereas respondents in the 'punishment' condition had a mean score of 4.56/7 for *affective reactions*. This difference is significant ($t=-5.78$, $p<.01$, one-tailed) and in the expected direction, thus confirming H3.

Our fourth hypothesis (H4) predicts that there will be a significant and positive association between *affective reactions* and *tax compliance intentions*. As shown on Fig. 2, Panel B, this path is positive and significant (coefficient of +0.20, $p<.01$), thus confirming H4.

Our final hypothesis (H5) predicts an overall moderated mediation effect: that is, there will be conditional indirect effects of *responsibility* on *tax compliance intentions* through *punishment deservingness* perceptions and *affective reactions* according to whether or not a tax fraud perpetrator is punished. Support for H5 is provided if the index of moderated mediation for our model is significant. As shown in Fig. 2, Panel B, the index of moderated mediation is 0.090 and significant, as the bootstrap confidence interval is entirely above zero (0.010–0.213). This significant index indicates that the hypothesized indirect effect of *responsibility* on *tax compliance intentions*

through *punishment deservingness* and *affective reactions* is conditional, i.e., differs significantly according to *punishment occurrence*. Thus, our results provide support for H5. As further shown in Fig. 2, Panel B, when tax fraud perpetrators are unpunished, there is a significant and negative coefficient of this indirect effect. However, when tax fraud perpetrators go punished, there is a significant and positive coefficient of this indirect effect, indicating that tax compliance tends to increase (decrease) if tax fraud perpetrators are punished (unpunished).

To provide additional insight into our moderated mediation model, we also examined the indirect effects of *punishment deservingness* on *tax compliance intentions* through *affective reactions* at each level of the moderator (*punishment occurrence*) and the other independent variable (*responsibility*). This untabulated analysis shows that only when *responsibility* is higher and punishment occurs is tax compliance significantly impacted: tax *compliance intentions* increase (the indirect effect is positive [+0.41]) and significant (bootstrap confidence interval is 0.091–0.769). In all other conditions, there is no significant impact on *tax compliance intentions*, as the bootstrap confidence interval straddles zero, despite the coefficient sign being as expected (a positive coefficient when punishment occurs and responsibility is lower, and negative coefficients for both conditions when punishment does not occur). This finding of a significant increase in compliance only when perceived responsibility is high and punishment occurs is consistent with H5.

To further understand how compliance intentions are differentially impacted by responsibility conditions and punishment conditions, we compared each cell mean to the overall sample mean. As shown at the bottom of Panel C on Table 3, we performed one-tailed t -tests to compare the compliance mean of each cell to the overall cell mean. We predict that compliance is higher (lower) in the conditions in which punishment is present (absent). In Cell 1 (punishment present; responsibility higher), the compliance mean is significantly higher than the overall cell mean ($p<.01$). In Cell 2 (punishment present; responsibility lower), the compliance mean is not significantly higher than the overall cell mean ($p=0.16$). In each of Cells 3 and 4, where punishment does not occur and where responsibility is higher and lower, respectively, the compliance means are significantly lower than the overall cell mean ($p=0.033$ and $p=0.049$, respectively). This pattern of results is consistent with our indirect effects in that compliance will only increase significantly if a punishment occurs and a fraud perpetrator is perceived as blameworthy. If a punishment occurs and a fraud perpetrator is not perceived as blameworthy, compliance does not significantly increase. Regardless of blameworthiness,

if the perpetrator of a fraud goes unpunished, compliance significantly decreases.

Supplemental Analysis

To provide additional assurance of the robustness of the theoretical model, we conducted untabulated structural equations analysis to test whether the indirect effect of responsibility on tax compliance through deservingness and affective reactions differs according to the presence or absence of punishment. We found that when punishment occurs, the path from responsibility to deservingness is positive and significant (+0.45, $p=0.02$); the path from deservingness to affective reactions is positive and significant (+0.95, $p<.01$); and the path from affective reactions to compliance is positive and marginally significant (+0.36, $p=0.09$). As expected, the direct path from responsibility to tax compliance intentions was not significant ($p=0.63$). Following Hu and Bentler (1999), we examined several fit indices: The Tucker–Lewis Index (TLI) was 0.94; the comparative fit index (RFI) was 0.90; and the Root Mean Square Error of Approximation (RMSEA) was 0.08. All of these indices suggest that the model is a good fit for the data, as incremental fit indices (such as the TLI and RFI) should be at least 0.90, and an absolute fit index (such as RMSEA) should be close to 0.06 (Hu & Bentler, 1999).

We did a similar analysis when punishment does not occur. This analysis found that the path from responsibility to deservingness is not significant ($p=0.31$); the path from deservingness to affective reactions is significant ($p<.01$); and the path from affective reactions to compliance is not significant ($p=0.23$). That two of the paths are not significant is consistent with our theoretical model and overall analysis, and explains why we find a mediation effect when punishment is present versus absent. As in the conditional process analysis, the direct path from responsibility to tax compliance intentions was not significant ($p=0.91$). The TLI was 0.95; the RFI was 0.90; and the RMSEA was 0.07.

In this structural equations analysis, we allowed for non-hypothesized paths between responsibility and affective reactions, and between deservingness and tax compliance. Neither of these paths were significant, regardless of punishment condition. This finding provides additional robustness for our theoretical model.

To rule out alternative explanations for our model, we conducted another supplemental analysis in which we allowed the punishment occurrence variable to moderate all potential paths in the theoretical model, including paths that were not hypothesized.²⁵ There are six possible interaction

terms with the punishment occurrence variable, as depicted in Fig. 3.

Consistent with our theoretical model, out of these possibilities only the interaction between punishment occurrence and punishment deservingness when influencing affective reactions is significant ($p<.01$). This result provides additional support for our theoretical model, as it shows that punishment occurrence does not moderate other hypothesized and non-hypothesized paths.

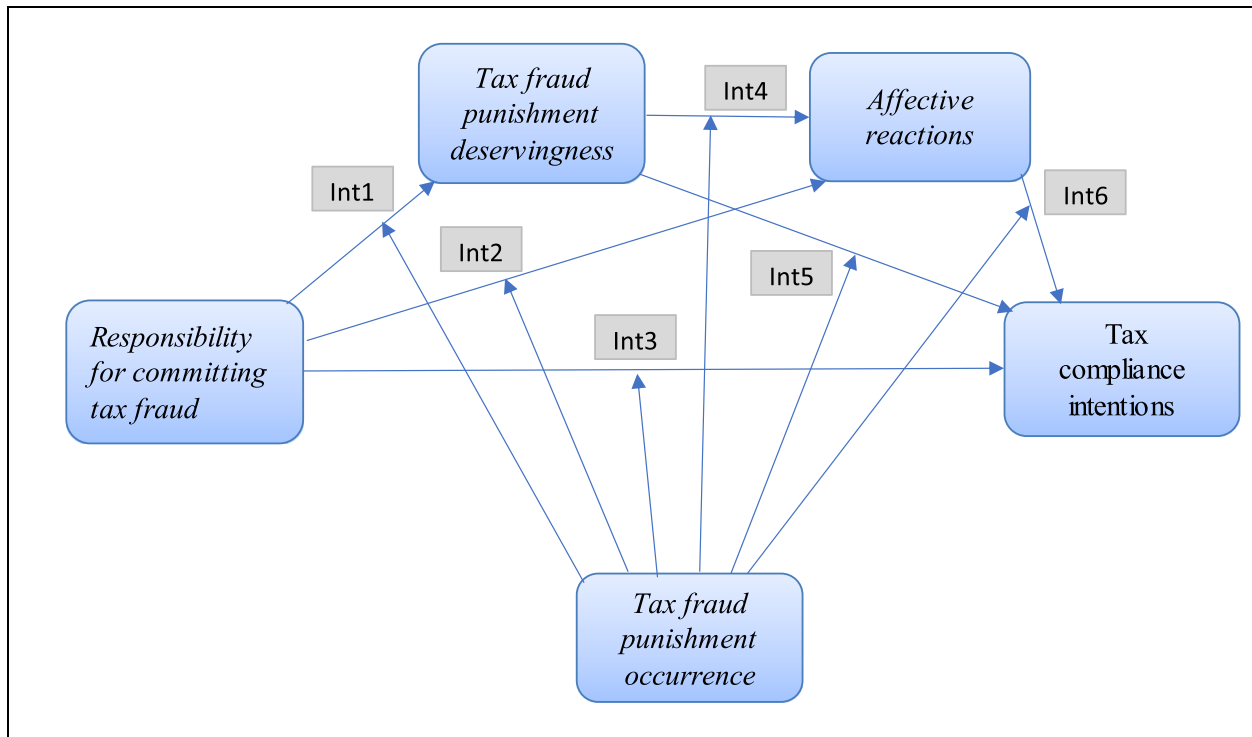
Discussion

This research has investigated how taxpayers' tax compliance intentions are influenced by the degree to which another individual is perceived as blameworthy for their tax evasion, and whether or not that individual was punished for their transgression. Combining insights from social psychology literature on reactions to penalties (Feather, 1998) and tax compliance literature on affect (Christian & Alm, 2014; Maciejovsky et al., 2012), we predicted conditional indirect effects of responsibility for a tax fraud on observers' tax compliance intentions through observers' perceptions of deservingness and affective reactions. We also predicted that whether or not a punishment occurs will moderate these indirect effects, and will also directly influence observers' tax compliance intentions, consistent with deterrence theory (Piquero et al., 2011; Pratt et al., 2006).

To test our model, we conducted an experiment using a sample of adult taxpayers, which produced strong support for our predictions. We provided evidence of the psychological pathway through which observers' tax compliance intentions are influenced by another's punitive outcome for tax fraud. Although we found a significant direct influence of punishment occurrence on observers' tax compliance intentions, we caution that this direct influence is conditional on observers' perceptions of tax offender culpability: tax compliance increased only when a tax offender was punished and perceived to be culpable (responsible) for their offence. Compliance, we found, decreased significantly when a tax offender went unpunished, regardless of perceived culpability. This finding is consistent with deterrence theory. Thus, our results suggest that the influence of a retributive outcome on observers' tax compliance is more nuanced than what is suggested by deterrence theory, since the positive influence on observers' compliance if a fraud perpetrator is punished will only increase their compliance intentions if they also perceive that the fraud perpetrator is culpable. Moreover, this indirect effect operates through perceptions of punishment deservingness and affective reactions. These results do not change when economic determinants known to influence tax compliance are controlled for (notably audit

²⁵ This model corresponds to Hayes (2018a) Model 92.

Panel A: Possible Interactions with Punishment Occurrence



Panel B: Significance of Interactions with Punishment Occurrence

Interactions of Punishment Occurrence	p-value
<i>Int1) Punishment Occurrence x Responsibility → Punishment Deservingness</i>	.75
<i>Int2) Punishment Occurrence x Responsibility → Affective Reactions</i>	.81
<i>Int3) Punishment Occurrence x Responsibility → Tax Compliance Intentions</i>	.26
<i>Int4) Punishment Occurrence x Punishment Deservingness → Affective Reactions</i>	< .01
<i>Int5) Punishment Occurrence x Punishment Deservingness → Tax Compliance Intentions</i>	.92
<i>Int6) Punishment Occurrence x Affective Reactions → Tax Compliance Intentions</i>	.38

Consistent with the theoretical model in Figure 2, only one interaction is significant.

Fig. 3 Supplemental analysis

likelihood and detection likelihood; Allingham & Sandmo, 1972; Andreoni et al., 1998).

Our results have important implications for agencies and individuals with the authority to punish perpetrators of fraud. Most saliently, results show how punishing tax evasion can send a positive message to other taxpayers about the importance and ethical imperative of tax compliance. However, our findings also show that if a transgressor who is punished can shift the blame to someone else—or is somehow perceived to be less than fully culpable for their unethical behaviour—observers' compliance intentions are unlikely to increase. Thus, any positive impact of a punishment on

observers is conditional on their perceptions of perpetrator blameworthiness. Tax and other authorities have limited means to control observers' perceptions of blameworthiness, except by controlling the information they release to the media about a tax evader and the specific fraud occurrence. Thus, our results suggest that for punishment of a tax evader to have a salutary on the rest of society, authorities should release sufficient contextual information for observers to be able to judge an offender as blameworthy. Tax authorities may wish to release such information about tax fraud convictions during tax filing season for maximum effectiveness.

Our results also have implications for tax authorities who decide not to attempt a prosecution for fraud. In the ‘Isle of Sham’ tax dodge, when questioned during a parliamentary hearing as to why the CRA did not prosecute the tax evaders, the assistant commissioner of the international tax division replied, “We believe there is some legal risk... that our tax assessment could be challenged and may not stand up in court.”²⁶ The CRA, in essence, understood that if it chooses to prosecute it could lose the case, thereby setting a precedent that would undermine its own authority. This risk of an unsuccessful prosecution and the subsequent unfavourable legal precedent must be weighed against the decreased national compliance for failure to punish tax evasion, which our findings show. Namely, our results suggest that tax compliance will decrease significantly when an observer witnesses a case of tax evasion where punishment does not occur, regardless of the perceived culpability of the offender.

As with all experimental research, our study is not without limitations. First, the hypotheses of this study were tested using Canadian taxpayers as participants. We encourage future research using taxpayers from other countries. Understanding and accounting for the extent to which taxpayers in other countries differ in meaningful ways from Canadian taxpayers would enable us to extend our understanding of our theoretical model. Second, participants in our study provided compliance intentions rather than actual compliance behaviour. While there is strong empirical support (Sheeran, 2002) for psychological models holding that an individual’s intention is the strongest predictor of their eventual behaviour—including the theory of reasoned action (Randall, 1989), the protection motivation theory (Rogers, 1983), and the theory of planned behaviour (Carpenter & Reimers, 2005)—, intentions may be different from behaviour. Third, since affect is “often fleeting” (Ainley, 2006, p. 399), the impact of a tax evasion case and its outcome on observers’ behaviour may be relatively temporary. In our study, participants learned about a tax fraud and the punishment for that fraud immediately before expressing their tax compliance intentions. Future research could examine how temporal distance may influence the persistence of affect on taxpayers’ compliance decisions.

Notwithstanding these limitations, our research makes several contributions to the literatures on taxation and tax ethics. Our primary contribution is to show that responsibility and punishment jointly increase tax compliance, irrespective of economic considerations such as audit likelihood. We provide empirical evidence that observers’ tax reporting compliance increases when they perceive that the tax authority has been just in meting out punishment (as a

form of retribution) to those who can be blamed for their transgression. Second, we provide a theoretically-based explanation for how and why observers react to information about another’s punitive outcome. Our model shows that this psychological reaction is complex, as the actual punishment of another individual influences observers only indirectly. Third, we extend the tax compliance literature by investigating how retributive justice considerations influence tax compliance; retributive justice has hitherto received significantly less scholarly attention than other dimensions of justice, for which there is empirical evidence about how they relate to tax compliance (Kirchler, 2007). Our results show that the tax compliance decision in a retributive context is complicated, and more nuanced than as shown by Kogler et al. (2015) and Mahangila and Holland (2015). Finally, our findings illustrate that punishment needs to occur for a favourable deterrent signal to be sent to observers. Past research on fraud has not considered the punitive impact of fraud outcomes, nor has fraud research identified the theoretical pathway by which a punitive outcome influences observers.

We encourage extensions of this research to consider how variations in punishment can impact observers’ reporting decisions. We also encourage researchers to examine the extent to which an authority itself is perceived as responsible for preventing a tax fraud, and how those perceptions impact observers’ willingness to comply with that authority’s directives.

Appendix

Experimental Instrument

Part 1: Basic Tax Scenario, Common to All Experimental Materials

Chris is a local entrepreneur who owns a food truck. He receives a lot of cash from customers, which is difficult to keep track of. He is in the process of preparing this year’s tax return.

Recently, Chris read the following story in the news about some taxpayers.

Specific Scenario Information

No punishment, lower responsibility

CRA Uncovers Tax Scheme

Several years ago, a large accounting firm approached a number of wealthy clients. The accounting firm told them they could pay less taxes by investing funds in a company on

²⁶ Government of Canada, Finance Committee meeting May 5, 2016. Online: <https://openparliament.ca/committees/finance/42-1/18/>.

the Isle of Man. The clients followed this advice, and made the investment.

Recently, the taxpayers were all audited by the Canada Revenue Agency (CRA). As it turned out, the tax shelter was a bogus arrangement that was intended to deceive the Canadian government. The taxpayers had to repay all the taxes they evaded, which is a standard practice and not a punishment.

However, the taxpayers were never punished. They were neither fined nor sentenced to jail.

Punishment, lower responsibility

CRA Uncovers Tax Scheme

Several years ago, a large accounting firm approached a number of wealthy clients. The accounting firm told them they could pay less taxes by investing funds in a company on the Isle of Man. The clients followed this advice, and made the investment.

Recently, the taxpayers were all audited by the Canada Revenue Agency (CRA). As it turned out, the tax shelter was a bogus arrangement that was intended to deceive the Canadian government. The taxpayers had to repay all the taxes they evaded, which is a standard practice and not a punishment.

Moreover, the taxpayers were then punished by being fined and sentenced to jail for several years.

Punishment, higher responsibility

CRA Uncovers Tax Scheme

Several years ago, a number of wealthy individuals read a brochure about paying less taxes by investing funds in a company on the Isle of Man. The individuals acted on their own, didn't ask anyone for advice, and made the investment.

Recently, the taxpayers were all audited by the Canada Revenue Agency (CRA). As it turned out, the tax shelter was a bogus arrangement that was intended to deceive the Canadian government. The taxpayers had to repay all the taxes they evaded, which is a standard practice and not a punishment.

Moreover, the taxpayers were then punished by being fined and sentenced to jail for several years.

No punishment, higher responsibility

CRA Uncovers Tax Scheme

Several years ago, a number of wealthy individuals read a brochure about paying less taxes by investing funds in a company on the Isle of Man. The individuals acted on their own, didn't ask anyone for advice, and made the investment.

Recently, the taxpayers were all audited by the Canada Revenue Agency (CRA). As it turned out, the tax shelter was a bogus arrangement that was intended to deceive the Canadian government. The taxpayers had to repay all the taxes they evaded, which is a standard practice and not a punishment.

However, the taxpayers were never punished. They were neither fined nor sentenced to jail.

Part 2: Questions

Thinking about the scenario you just read, please read the following statements and indicate your level of agreement by clicking on the appropriate response, where 1 = strongly disagree, and 7 = strongly agree.

Tax compliance intentions

1. Chris will not declare all the cash to the CRA.
2. Chris would be tempted to not report all of the cash receipts on the tax return.
3. Chris is unlikely to report all of the cash earnings to the CRA.
4. Under the circumstances, Chris might not report all of the cash earnings on the tax return.

Attention-check questions [note: #1 is also a manipulation check]

1. After the CRA's audit, what happened to the taxpayers?
 - (A) They had to repay the taxes they had evaded, and were fined and sentenced to jail.
 - (B) They had to repay the taxes they had evaded, but were neither fined nor sentenced to jail.
2. In the scenario, what did the taxpayers decide to do?
 - (A) Invest in a risky business venture in the Caribbean.
 - (B) Invest in a company on the Isle of Man.
 - (C) Provide financing to a mining company.

Responsibility manipulation effectiveness questions

1. The taxpayers have only themselves to blame for investing in the tax shelter scam. (1 = strongly agree; 7 = strongly disagree)
2. The taxpayers felt solely responsible for what happened with the tax shelter. (1 = strongly agree; 7 = strongly disagree)

Thinking about the scenario you just read, please read the following statements and indicate your level of agreement by clicking on the appropriate response, where 1 = strongly disagree, and 7 = strongly agree. Please answer these questions as if you were Chris.

Affective reactions

1. After the CRA's audit, what happened to the taxpayers makes me angry. [reverse-scored]
2. After the CRA's audit, what happened to the taxpayers makes me satisfied.
3. After the CRA's audit, what happened to the taxpayers makes me disappointed. [reverse-scored]

4. After the CRA's audit, what happened to the taxpayers makes me pleased.

Deservingness [generic]

1. The taxpayers who invested in the tax scheme deserved to be punished.
2. There should be negative consequences for the taxpayers who participated in the tax scheme.
3. The taxpayers who invested in the tax scheme need to be held accountable for their wrongdoing.

Severity of offense

1. I think tax evasion is a serious offense.
2. I think tax evasion is a severe crime.

Harshness of penalty

(1=much too lenient; 7=much too harsh)

- (1) What do you think of the end result to the taxpayers after the CRA's investigation?
- (2) What do you think of the outcome the taxpayers received from the CRA?
- (3) What do you think of the final consequence to the taxpayers?

Justifying tax evasion

Can cheating on tax if you have the chance always be justified, never be justified, or something in between (1 = never justifiable; 10 = always justifiable).

Audit likelihood

Chris expects to be audited by the CRA.

Detection likelihood

If Chris does not report all the cash from customers on his tax return, he expects the CRA to find out.

Other Questions

Please provide the following demographic information about yourself.

- (1) What is your gender? *Male Female Other*
- (2) In which year were you born?
- (3) How many years of work experience do you have? (round to nearest year)
- (4) Please indicate your highest level of education completed:

Less than High School

High School

Associate's Degree

Bachelor's Degree

Master's Degree

Professional Degree or Doctoral Degree

Other

- (5) Please indicate your approximate annual income (before-tax):

Less than \$25,000

Between \$25,000 and \$49,999

Between \$50,000 and \$74,999

Between \$75,000 and \$99,999

\$100,000 or more

Prefer not to answer

- (6) How would you categorize your political beliefs?

Very conservative

Moderately conservative

Slightly conservative

Middle of political spectrum

Slightly liberal

Moderately liberal

Very liberal

Please answer the following final questions.

- (7) Before taking this survey, were you familiar with any news stories about tax schemes or tax havens? Yes No.
- (8) Before taking this survey, were you aware of any Canadians linked to a secret tax dodge in the Isle of Man? Yes No
- (9) Have you ever been audited by the CRA? Yes No
- (10) Who usually prepares your tax return?
I do
My spouse/partner
Paid preparer
Other
- (11) Do you have any other comments or anything else you would like to share?

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Data Availability Experimental data is available upon request.

Declarations

Conflict of interest The authors declare that they do not have a conflict of interest.

Research Involving Human and/or Animal Participants All procedures performed in studies involving human participants were in accordance with the ethical standards of the university's research committee and with the 1964 Helsinki declaration and its later amendments. Informed consent was obtained from all individual participants included in the study.

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