Trust and compliance effects of taxpayer identity theft: A moderated mediation analysis

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Abstract

We experimentally investigate how tax authority responsibility for preventing identity theft and tax authority responsiveness following identity theft influence taxpayers' trust in the tax authority, and subsequent tax compliance intentions. We find evidence for a moderated mediation model, such that that tax authority responsiveness influences trust, and trust in turn influences compliance. However, this effect is conditional upon levels of tax authority responsibility for preventing the identity theft. Specifically, when taxpayers perceive that the tax authority is to blame for the identity theft, higher responsiveness by the tax authority does not significantly influence compliance through trust. Conversely, when the tax authority is not to blame for identity theft, more responsiveness by the tax authority significantly influences compliance through trust. These findings suggest that when the tax authority is to blame for identity theft, there may be little it can do to increase taxpayers' trust and subsequent compliance.

1. Introduction

Identity theft has been called "the crime of the new millennium", and may be the fastest growing crime in the world (Hoar 2001, 1423). Although identity theft can occur in many contexts in which identity information is shared or made available to others (Hoar 2001), tax identity theft is of particular concern, given advances in, and accessibility of, online technologies (OECD 2011). Tax-related identity theft occurs when an individual intentionally uses the personal identifying information of another taxpayer to file a falsified tax return with the intention of obtaining an unauthorized refund (National Taxpayer Advocate 2015).

Tax identity theft is perhaps the single biggest challenge facing the United States' tax authority (the Internal Revenue Service; IRS). The year 2016 marked the sixth consecutive year that the Treasury Inspector General for Tax Administration (TIGTA), a government office responsible for overseeing IRS activities, has made security of taxpayer data the most important management challenge facing the IRS (TIGTA 2016). At the end of fiscal year 2015, the IRS had over 600,000 cases of taxpayer identity theft in the queue (National Taxpayer Advocate 2015). In the 2013 tax year alone, the IRS paid out $5.8 billion in fraudulent refunds (GAO 2015). Exacerbating this privacy issue is inadequate IRS technology and infrastructure, described as "grossly outdated" (National Taxpayer Advocate 2016, 4).

To combat identity theft, in its most recent budget, the IRS requested a 9% increase in funding from Congress (IRS 2017). The IRS expects that an increase in funding will enable IRS employees to better assist victims of tax-related identity theft, and enable the IRS to upgrade its electronic security systems (IRS 2017). Thus, the IRS acknowledges that its responsiveness to victims of identity theft could improve, as well as its responsibility for preventing tax identity thefts arising from security concerns with its electronic infrastructure. Both of these elements –

responsiveness and responsibility – are identified as key dimensions of organizational accountability (Koppell 2005). We chose to examine the effects of tax authority responsibility and responsiveness, as they are arguably the two accountability factors that an authority has a relatively high degree of control over when interacting directly with specific taxpayers, and are also the two accountability factors implicitly embedded in the current communication practices between the IRS and taxpayers impacted by identity theft. The purpose of this paper is to examine how two accountability dimensions – responsiveness and responsibility (Koppell 2005) – impact perceptions of trust in a tax authority and subsequent tax compliance intentions, following taxpayer identity theft.

Accountability, broadly defined, is "giving and demanding reasons for conduct" (Roberts and Scapens 1985, 445). Accountability is also the means through which organizations are called to account for their actions (Ebrahim 2003; Bovens 2007). In the tax context, a tax authority is accountable to taxpayers for the way in which it administers the tax system. Organizational accountability is important because it fosters trust (Seal and Vincent-Jones 1997; Carmona, Donoso, and Reckers 2013; Tolbert and Mossberger 2006), which in turn leads to cooperative compliance with authorities (La Porte and Metlay 1996; Tyler and Degoey 1996; Gordon 2000; De Cremer and Tyler 2007; Fard and Rostamy 2007). Trust in authority is a belief held by organizational members towards an authority enacting a procedure that the authority shares the members' values and will protect their interests (De Cremer and Tyler 2007).[1]

Although the tax literature suggests that trust influences taxpayers' willingness to cooperate and comply with tax authorities (Braithwaite 1998; Scholz and Lubell 1998; Torgler

[1] Trust in authority is synonymous with institutional trust, which is one of three widely acknowledged types of trust (Zucker 1986), and is produced when an organization uses formal mechanisms that do not involve personal characteristics or a past history. Trust in this paper refers to institutional trust.

2003a, 2003b; Murphy 2004; Wahl, Kastlunger and Kirchler 2010; Kogler et al. 2013; Hofmann, Gangl, Kirchler and Stark 2014; Gobena and Van Dijke 2016), tax researchers have not empirically examined specific antecedents to trust, and how these antecedents impact trust and subsequent tax compliance. In the broader accounting literature, while trust is acknowledged to play an integral role in economic exchanges (e.g., Neu 1991a, 1991b; Free 2008; Mahama and Chua 2016), little is known about specific antecedents to trust and how they influence individuals' willingness to participate in economic exchanges. In the accountability literature, what is lacking is a better understanding of how the mechanisms of accountability operate in practice (Bovens 2010), since accountability research tends to be normative rather than empirical (Yang and Dubnick 2016). Accordingly, the purpose of this paper is to integrate and extend these literatures by examining how two accountability dimensions – responsiveness and responsibility (Koppell 2005) – impact perceptions of trust in a tax authority and subsequent tax compliance intentions, following taxpayer identity theft. Given the prevalence of taxpayer identity theft, this issue is of practical importance to tax authorities. No research of which we are aware has investigated how a taxpayer responds to a tax authority after tax identity theft.

To understand the linkages between tax authority responsibility and tax authority responsiveness on trust and compliance, we conducted a 2 x 3 between-subjects fully crossed experiment with 482 adult taxpayers from the United States. Participants were given a scenario in which a taxpayer learns that he is a victim of tax identity theft. We operationalized IRS responsibility (high, low) according to the IRS' perceived culpability in preventing the identity theft. We operationalized IRS responsiveness through the IRS' follow up actions (no response; acknowledgment only; acknowledgment and corrective action), using actual IRS wordings on identity theft response letters. Following the scenario, participants were asked about their trust in the IRS, as well subsequent tax compliance reporting intentions.

Results from this experiment indicate a significant interaction effect between both independent variables and trust, such that when the IRS has a low level of responsibility (i.e., they are not to blame) for identity theft, trust in the IRS increases as the level of responsiveness (i.e. the comprehensiveness of follow-up actions) increases. However, when the IRS was highly responsible (i.e., they are to blame) for the identity theft, the highest level of responsiveness (i.e., providing comprehensive follow-up actions) actually *decreases* trust. Specifically, the most comprehensive follow-up action (acknowledgment and corrective action) decreases trust relative to just providing an acknowledgment, if taxpayers perceive the tax authority is highly responsible for preventing the identity theft. These findings suggest that the current protocol used by the IRS to respond to taxpayers who are victims of identity theft (a letter containing an acknowledgment and corrective action) does not increase trust when taxpayers perceive that the IRS is to blame for the occurrence of the identity theft, and the IRS may be better off simply acknowledging that the identity theft occurred.

Moreover, a mediation analysis of this interaction effect on compliance suggests that when the IRS is not to blame for the identity theft, a more responsive IRS will significantly increase compliance intentions through trust. However, when the IRS is to blame for the identity theft, a more responsive IRS is unlikely to increase compliance intentions through trust. This finding that trust can affect compliance is consistent with existing tax compliance literature (Murphy 2004, Wahl et al. 2010; Kogler et al. 2013; Hoffman et al. 2014; Gobena and Van Dijke 2016), but we extend it by finding a boundary effect of trust on compliance.

Several contributions emerge from our study. We extend the accounting and tax literatures on trust by investigating how dimensions of organizational accountability impact trust and subsequent tax compliance. Specifically, we examine how Koppell's (2005) two dimensions of organizational accountability that are at all controllable by the tax authority – responsiveness and responsibility – impact perceptions of trust in the tax authority and subsequent tax compliance intentions. We also extend the tax literature on trust in two ways. We identify two antecedents of trust, and find an indirect effect on compliance through trust. We also find that this indirect effect is conditional upon the level of IRS responsibility. These two findings extend existing research on trust and compliance (Murphy 2004, Wahl et al. 2010; Kirchler, Hoelzl, and Wahl 2008; Kogler et al. 2013; Hoffman et al. 2014; Gobena and Van Dijke 2016), which has considered direct effects of trust on compliance but has not examined the antecedents to trust. Since tax identity theft is a major concern of tax authorities worldwide, investigating how taxpayers respond to identity theft is another contribution to the tax literature.

The remainder of the paper is organized as follows. In the next section, we develop our hypotheses. Section three describes our experiment, and section four reports our results. We conclude with a discussion of the implications of our findings.

2. Literature Review & Hypotheses Development

In this section, we develop hypotheses about the impact of organizational accountability dimensions on taxpayers' perceptions of trust and tax compliance intentions. Using the accountability and trust literatures, we predict that two dimensions of organizational accountability– responsiveness and responsibility - will jointly influence perceptions of institutional trust. Using the tax compliance-trust literature, we also predict that organizational accountability dimensions in turn will indirectly influence tax compliance intentions through perceptions of trust.

2.1 Accountability and Trust

The accountability literature uses the terms ‘actor’ and ‘forum’ to describe the parties in an organizational accountability relationship (Bovens 2007). The actor is accountable to the forum. As is the case in our setting, where the actor is a public institution, and the forum is a specific person, the accountability literature suggests that people will be more likely to trust that institution if it is accountable to them (La Porte and Metlay 1996; Seal and Vincent-Jones 1997; Tolbert and Mossberger 2006; Bovens 2007; Fard and Rostamy 2007; Greiling and Halachmi 2010; Carmona et al. 2013).

In a recent review of the accountability literature, Brandsma and Schillemans (2013, 954) acknowledge that accountability is embedded in a literature that is “rather disconnected” owing to a vague conceptual foundation. For example, Schillemans (2010), in his review of the accountability literature, found that many articles used a four-fold typology of accountability, developed by Romzek and Dubnick (1998), which identifies bureaucratic accountability, legal accountability, professional accountability, and political accountability. However, this typology is incomplete, as it reflects factors of control over organizations, but not factors that are non-controllable by organizations (Koppell 2005). Therefore, to provide empirical clarity to the accountability literature, we use Koppell’s (2005) dimensions as a starting point when assessing accountability in the tax context, as it is, to our knowledge, the most comprehensive model of accountability dimensions. Koppell’s (2005) model, while referred to by ethics scholars (Soltani 2014) and public accountability scholars (Brandsma and Schillemans 2013), has not been, to the best of our knowledge, empirically tested. Furthermore, Brandsma and Schillemans (2013, 971) call for more empirical research into the "workings of accountability", an objective for which Koppell's (2005) dimensions are suitable.

Koppell (2005) identifies five dimensions of accountability: transparency, liability, controllability, responsibility, and responsiveness. Table 1 below depicts each dimension, a definitional question (reproduced from Koppell 2005), and its application to the tax context, where the accountable actor is the tax authority (IRS). We contend that responsibility and responsiveness are most relevant in affecting taxpayers' perceptions of the tax authority following a case of taxpayer identity theft, as the primary accountability relationship for these dimensions is between the IRS and taxpayers. The primary accountability relationship for the remaining dimensions is between the IRS and Congress.

[insert Table 1 about here]

The relationship between the IRS and Congress is highly structured and formal, as the IRS has to meet stringent legislative requirements to disclose its financial information to Congress, and is legally obligated to follow what Congress desires. However, the relationship between the IRS and taxpayers is not legislated and is less formal. As such, the IRS has more control over its relationships with taxpayers. For example, the IRS can initiate changes to its technology infrastructure and train its staff (responsibility), and can initiate policies or programs to respond to the demands and needs of taxpayers (responsiveness). Therefore, in the case of identity theft, we contend that the most relevant accountability dimensions regarding taxpayers' trust and compliance are those in which the IRS has a relatively high degree of control and where the relationship concerns individual taxpayers directly. The tax authority is responsible for the security of its systems and taxpayer data and can initiate changes when its systems are found to be inadequate. Additionally, the tax authority can respond to and provide support to taxpayers when an identity theft breach has occurred.

While the primary accountability relationship for the transparency dimension is between the IRS and Congress, it is possible that individual taxpayers could nonetheless be another relevant forum, as they may wish to receive explanations for failures at the IRS. According to Koppell (2005), transparency requires that bureaucrats be subject to regular review and questioning, and perceived failures must be investigated and explained. In an identity theft context, the IRS is more likely to be questioned by Congress about the problem of identity theft, rather than questioned by a specific taxpayer affected by identity theft. As well, Congress is more likely than a specific taxpayer to initiate an investigation into a perceived failure at the IRS. For these reasons, the primary accountability relationship for the transparency dimension is between the IRS and Congress. Accordingly, Congress, rather than a specific taxpayer, is more likely to be the direct recipient of the outcome of a review or investigation at the IRS. As well, by the time a widespread issue, such as identity theft, has been identified at the IRS, it may take years for the results of a subsequent investigation to be communicated to the relevant parties. We therefore focus our investigation on the two dimensions – responsibility and responsiveness – in which individual taxpayers are the most directly affected recipients of IRS interactions during this type of situation.

The accountability literature suggests that there may be an interaction effect between accountability dimensions. Koppell (2005, 96) states that accountability dimensions are not mutually exclusive, while Dubnick (2005) finds that the act of account-giving is a complex phenomenon. In addition, Ebrahim (2003, 203) argues that accountability is highly contingent on mechanisms of accountability, and that the audience who demands accountability may respond differently, depending on the particular accountability mechanism. Thus, we expect that the accountability dimensions of responsibility and responsiveness could jointly influence taxpayers' trust. As the literature on accountability tends to be normative rather than empirical (Yang and Dubnick 2016), we are unaware of any empirical evidence of an interaction effect between accountability dimensions. As well, no specific predictions in Koppell (2005) suggest the form of interaction effects between the accountability dimensions. Nevertheless, the communication authenticity literature, discussed subsequently, suggests that there may be a specific interaction between the two accountability dimensions of responsibility and responsiveness.

In the marketing and communications literatures, there is research about authenticity of service interactions. Authenticity communicates the authority and credibility of an organization (Gilpin, Palazzolo, and Brody 2010). Furthermore, an organization perceived to be authentic is also more likely to be trusted by its target audiences (Gustaffson 2006; Molleda 2010).

However, there is evidence from the marketing literature that organizations trying to be "real" or "authentic" can end up appearing phony, or *inauthentic* to consumers when they portray themselves differently than the reality consumers experience (Gilmore 2007). For example, what organizations say about themselves will not match the reality that people perceive or encounter if organizational performance is poor, which could result in a positive message having the opposite affect than was intended (cf., Grandey, Fisk, Mattila, Jansen, and Sideman 2005). Similarly, the management literature suggests that individuals are unlikely to put their trust in an organization that has performance failures (Gillespie and Dietz 2009). This impact of a message on consumers' trust is explained rhetorically by Gustaffson (2006, p.526), who asks, "How can consumers be sure that what they put their trust in is not a new kind of "brand veneer" that only aims at showing a trustworthy image outward[ly]?"

Extending these insights to the tax context suggests that when the IRS is most responsive by sending a letter acknowledging the identity theft and offering ways to rectify the situation (highest responsiveness condition), taxpayers may perceive this kind of communication from the tax authority as inauthentic, if organizational performance was poor (i.e. in the high responsibility condition). Thus, we suggest that the impact of responsiveness on IRS trust is likely to be moderated by the degree of IRS responsibility, as an overtly positive message, when accompanied by poor organizational performance (high responsibility), is likely to diminish perceptions of the IRS as a trustworthy authority, but not when the organization is not to blame (low responsibility).

We thus expect that a tax authority's responsiveness may undermine trust when the tax authority's responsibility for the identity theft is high (i.e. the tax authority is to blame). Specifically, when tax authority responsiveness is highest, trust in the tax authority should be higher when the tax authority is not to blame (low tax authority responsibility) and lower when the tax authority is to blame (high tax authority responsibility). This discussion leads to the following hypothesis:

H1: Tax authority responsibility will moderate the effect of tax authority responsiveness on taxpayers' trust in the tax authority. Specifically, when tax authority responsiveness is highest, trust in the tax authority will be higher when the tax authority is not to blame (low tax authority responsibility) and lower when the tax authority is to blame (high tax authority responsibility).

2.2 Trust and Tax Compliance

Where the actor is a public institution, and the forum is a specific person, the accountability literature suggests that consequences to the actor result from the degree of institutional trust in that actor: if the forum trusts the actor, the forum is likely to be cooperative; conversely, if the forum distrusts the factor, the forum is unlikely to be cooperative (La Porte and Metlay 1996; Seal and Vincent-Jones 1997; Tolbert and Mossberger 2006; Fard and Rostamy 2007; Greiling and Halachmi 2010; Carmona et al. 2013). Thus, we would expect taxpayers to be cooperative (uncooperative) and compliant (non-compliant) if they trust (distrust) the tax authority.

There is a substantial tax literature suggesting that tax compliance is directly influenced by trust in a tax authority (Braithwaite and Braithwaite 2001; Feld and Frey 2002; Kirchler et al. 2008; Torgler 2007; Alm and Torgler 2011). In particular, Kirchler et al. (2008) proposed a model of tax compliance (the "slippery slope framework") in which trust features prominently. In Kirchler et al.'s (2008) model, increased trust in tax authorities is posited to directly increase voluntary tax compliance. This model has received subsequent empirical support, as Torgler, Demir, Macintyre, and Schaffner (2008), Lisi (2012), Kastlunger, Lozza, Kirchler, and Schabmann (2013), Kogler et al. (2013), and Wahl et al. (2010) all found a significant and positive association between increased trust in tax authorities and tax compliance.

There is therefore considerable theoretical and empirical support for the direct impact of trust on compliance. In addition, as noted above, the accountability literature suggests that accountability impacts compliance through trust. Therefore, we expect that accountability indirectly influences compliance through trust. Accordingly, we posit the following:

> H2: Tax authority responsibility and responsiveness will jointly impact taxpayers' compliance intentions indirectly through trust.

2.3 Summary of expected relationships

The hypothesized linkages between the variables are depicted below in Figure 1. In essence, we hypothesize a moderated mediation model, in which the effect of IRS responsiveness on compliance through trust differs according to the degree of IRS responsibility (cf. Preacher, Rucker, and Hayes 2007).

[insert Figure 1 about here]

3. Methodology

Below we discuss the design, participants, experimental procedures, and task, independent variables, and dependent variables for the experiment.

Design

The experiment utilizes a 2 x 3 between-participants design. The design fully crosses tax authority responsibility (high or low) with tax authority responsiveness (no follow-up; acknowledgement only; acknowledgement and corrective action).

Participants

Participants were taxpayers from the United States, recruited from a consumer research firm that has a database of over 4 million U.S. citizens.[2] To be representative of a typical taxpayer population, we requested that our participants be randomly selected according to gender and age. Age was restricted to participants between the ages of 21 to 85, evenly distributed across age groups. We requested 75 participants per experimental condition, and received a total

[2] All data was collected in December of 2016, prior to the Equifax data breach in September 2017 (Haselton 2017). Ethics approval to conduct research using human subjects was obtained from our respective institutions prior to data collection.

of 482 responses, all of whom passed two instructional manipulation check questions.[3] Descriptive statistics for demographic measures are provided in Table 1. As shown on Table 2, 52% of our sample is male and 48% is female, with an average age of 48.7 years.[4]

[Insert Table 2 about here]

Experimental Procedures and Task

Potential participants received an email invitation from the consumer research firm to participate in a questionnaire about income taxes. Individuals willing to participate in the experiment clicked on a web link, and were automatically and randomly directed to one of the six experimental conditions. Respondents had a unique user ID and password provided by the firm, which ensured that they could not respond to a survey more than once. Participants were incentivized using a point system specific to the consumer research firm. Participants were told that they would be reading a scenario about a taxpayer who was preparing his tax return, and asked some follow-up questions.

In the experimental scenario, participants read about a barber named Jason and his recent experiences with the IRS. Participants learned that last year Jason opened his own barber shop, and that he is paid only in cash. Shortly before the April 15th tax filing deadline, Jason learned that a hacker had broken into the IRS's computer system and had accessed confidential records,

[3] Sample sizes per cell varied from 76 to 83. To be included in the sample, respondents had to correctly pass two instructional manipulation check questions, following the suggestion of Oppenheimer, Meyvis, and Davidenko (2009), corresponding to each independent variable, ensuring they read the experimental vignette and understood which experimental condition they were in. The two questions are contained in the Appendix. The firm does not provide the total number of invitations they sent, nor do they provide the number of respondents that did not pass these two checks. We used Qualtrics software, and programmed it to expunge respondents who did not pass both questions, without saving their data.

[4] We checked our sample against the most recently published U.S. census data (U.S. Census Bureau, Current Population Survey, 2015 Annual Social and Economic Supplement), which segments the U.S. population according to income and education level. Our income segments matched those used in this population survey. Our respondents' educational attainment was generally overweight by about 10% per category relative to the US population. However, as educational was not a significant control variable, we nonetheless believe that our sample is relatively representative of the broader population of U.S. taxpayers.

including his. The hacker misused Jason's Social Security Number to file a bogus tax return and receive a fraudulent refund. As discussed below, the scenario also contained the two independent variables. In response to the scenario, participants completed several questions about Jason's trust in the IRS and his tax compliance intentions, manipulation checks, and demographic information. The Appendix contains the experimental scenarios, as well as the follow-up questions.

Throughout our scenarios, we followed the ethical 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 the barber preparing his tax return; making the scenarios relevant, which we did by using an identity theft context and actual wordings from standard IRS letters; using a theoretical framework when constructing scenarios, which we did by using Koppell's (2005) accountability dimensions; keeping the vignettes short, as to as to keep respondents interested; and attempting to establish internal validity, which we did by pre-testing the wording of our vignette on several classes of adult taxpayers, and presenting the vignette at an academic conference.

Independent Variables

Responsibility

Responsibility was operationalized according to the IRS' perceived culpability in preventing the identity theft. Under the low responsibility condition, the scenario read, in part, "Jason learned that the IRS's systems were modern and contained recently installed anti-hacking technology. There is little the IRS could have done to prevent the identity theft." In contrast, under the high responsibility condition, the scenario read, in part, "Jason learned that the IRS's systems were outdated and did not contain recent anti-hacking technology. Had the IRS's systems been more modern and secure, the identity theft could have been prevented." This choice of operationalization reflects the IRS' admission that their electronic security systems need to be updated (IRS 2017).

Responsiveness

Responsiveness was operationalized using the follow-up actions of the IRS after the identity theft occurred. We manipulated responsiveness in three ways: no follow-up; a letter acknowledging the identity theft; and a letter acknowledging the identity theft and explaining corrective action. By manipulating responsiveness in three ways, we can isolate the effect, if any, of providing an increasingly comprehensive response.[5]

In the condition containing the acknowledgment only, the letter stated, "The IRS shares the concern and dismay of those individuals whose privacy has been impacted by this malicious act."[6] In the condition containing the acknowledgement and corrective action, the letter stated, "The IRS shares the concern and dismay of those individuals whose privacy has been impacted by this malicious act. The IRS responded aggressively to successfully protect our systems. We have augmented our monitoring and surveillance measures, so that the security of the IRS site continues to meet the highest standards. The IRS is taking a number of steps to help you in this difficult situation, including marking your tax account for protection, offering you a special identity protection PIN and one year of identity protection from Equifax."[7]

[5] We were careful not to confuse responsibility or responsiveness with transparency. Per Koppell (2005, p.96), transparency involves an explanation following an organizational review or investigation. In our scenario, the IRS did not follow-up with the taxpayer as a result of an investigation (externally or internally initiated), nor did the IRS explain what the hackers did to access the IRS' systems. Instead, the IRS followed-up with the taxpayer as a courtesy because the taxpayer's tax records were compromised.

[6] As we could not find suitable language from an IRS commissioner in acknowledging identity theft, we adopted language from the commissioner of the Canadian tax authority (the Canada Revenue Agency) in acknowledging and responding to tax identity theft: see http://www.citynews.ca/2014/04/14/900-sins-stolen-from-cra-website-tax-agency-says/

[7] The corrective actions are derived from what the IRS says they will do for taxpayers who have victimized by identity theft, in letters sent to these victims. See, for example, https://qz.com/445233/inside-the-irss-massive-data-

Dependent Variables

The dependent variables are trust in the tax authority (IRS) and taxpayers' compliance intentions. Both variables were third-person measures, so as to minimize discomfort for the respondents and reduce the likelihood that the results would be affected by social desirability bias (Chung and Monroe 2003).

Participants responded to three statements about trust, as follows: "Jason trusts the IRS to administer the tax system fairly"; "Jason thinks the IRS is a trustworthy organization"; and "Jason trusts the IRS to do the right thing." Participants responded to each statement using a 7-point scale, with endpoints of 'strongly agree' (=1) and 'strongly disagree' (=7). These items were derived from Murphy (2004), Hartner et al. (2008), and Van Dijke & Verboon (2010). The Cronbach alpha of this trust measure is 0.84. We used an average score of these items in our subsequent analyses.

Participants responded to three statements about tax compliance intentions, as follows: "Jason would be tempted to not report all of his cash earnings on his tax return"; "Jason is unlikely to report all his cash earnings to the IRS"; and, "Under the circumstances, Jason might not report all of his cash earnings on his tax return." Participants responded to each statement using a 7-point scale, with endpoints of 'strongly agree' (=1) and 'strongly disagree' (=7). This measure was based on Farrar, Kaplan, and Thorne (2017). The Cronbach alpha of this measure is 0.88. We reverse-coded this variable; therefore, higher scores indicate higher compliance

breach/. As we could not find suitable language from an IRS commissioner in acknowledging identity theft, we adopted language from the commissioner of the Canadian tax authority (the Canada Revenue Agency) in acknowledging and responding to tax identity theft: see http://www.citynews.ca/2014/04/14/900-sins-stolen-from-cra-website-tax-agency-says/

intentions and lower scores indicate lower compliance intentions. We used an average score of these items in the subsequent analyses.

Control Variables

Consistent with prior research, demographic measures were included in the research instrument for age, gender, work experience, education, income, and political beliefs (e.g., Jackson and Milliron 1986; Carnes and Englebrecht 1995; Murphy 2004; Bobek et al. 2007; Verboon and Van Dijke 2007). We also asked participants if they had ever had a negative interaction with the IRS, had ever been a victim of tax identity theft, or knew a victim of tax identity theft.

4. Results

Manipulation checks

To check for the effectiveness of the responsibility manipulation, respondents were first asked, “What did the scenario say could have prevented the identity theft?”, with three possible response choices. Those who answered incorrectly based on the experimental condition they were assigned were not allowed to continue with the study.[8] Those who correctly answered this comprehension check also responded to the following two statements: 1) *Jason blames the IRS for what happened*, and, 2) *The IRS could have done more to prevent the identity theft*. Participants responded to these statements using a 7-point Likert scale, with endpoints of ‘strongly agree’ (=1) and ‘strongly disagree’ (=7). Under the high responsibility condition

[8] The three options were: A) Nothing; the IRS already had modern and up-to-date anti-hacking technology in place; B) More modern and secure systems at the IRS; and C) A greater focus on customer service.

(where the IRS was highly responsible for preventing the identity theft), the mean responses were 5.13 (*SD* = 1.60) and 6.25 (*SD* = 1.19), respectively, and under the low responsibility condition, the mean responses were 3.86 (*SD* = 1.80) and 4.20 (*SD* = 1.94), respectively. The pattern of these means is in the expected direction, and the differences are significant in both instances ($F(1, 481) = 66.78$, $p<0.01$, and $F(1, 481) = 196.26$, $p<0.01$, respectively). These results indicate that our responsibility manipulation was effective.

Since our responsiveness manipulation involved assigning respondents to discrete conditions, one of our instructional manipulation checks also served as a manipulation check for the responsiveness manipulations. Respondents were asked, *After Jason learned that his tax information was hacked, how did the IRS respond*? Respondents could choose one of three responses, corresponding to the experimental condition they were assigned.[9] Only respondents who correctly answered this question were allowed to continue with the experiment.

Tests of Hypotheses

To test our hypotheses, we use conditional process analysis (Hayes 2013), which is the integration of moderation and mediation into a unified analytical model (Hayes 2013, 415).[10] Hayes (2013, p.166-170) identifies four reasons why conditional process analysis is preferred over the mediation approach of Baron & Kenny (1986). Conditional process analysis tests a series of relationships simultaneously, whereas Baron & Kenny's (1986) method tests a series of

[9] The three options were: A) Nothing; The IRS never followed-up with Jason; B) The IRS sent Jason a letter in which they expressed concern and dismay over the identity theft; and C) The IRS sent Jason a letter in which they expressed concern and dismay over the identity theft, and explained the steps they are taking to help him.
[10] Hayes (2013, 166) explains why conditional process analysis is preferred over other mediation analysis approaches, such as the method of Baron and Kenny (1986).

causal steps. Stated briefly, condition process analysis is a more rigorous method because it 1) estimates an indirect effect as a product of two variables, not as individual hypothesis tests of each variable; 2) tests an inferential indirect effect once, rather than multiple times (which increases the likelihood that a hypothesis test will fail to reject a false null hypothesis, or fail to reject a true one); 3) it is a mistake to condition the search for indirect effects on evidence of a total effect of a predictor variable, as indirect effects may still be present even if there is not a statistically significant effect of a predictor variable on an outcome variable; and 4) it recognizes that mediation is conceptualized in quantitative terms, i.e., there is a size of a mediation effect, rather than just presence or lack of a mediation effect.

We begin by first determining whether our model depicts moderated mediation. If moderated mediation is present, the index of moderated mediation will be significant. The index of moderated mediation is -0.137, and is significant, as a bootstrap confidence interval based on 10,000 samples was entirely below zero (-0.257 to -0.047). This significant index means that the conditional indirect effects of IRS responsiveness on tax compliance intentions through trust differ significantly according to level of IRS responsibility. Consequently, we find evidence of moderated mediation.

Table 3 reports the conditional indirect effects of IRS responsiveness on compliance, as well as the model coefficients. As Table 3 reports, when IRS responsibility is low, the effect of IRS responsiveness on compliance through trust is positive (0.134) and significant (a bootstrap confidence interval based on 10,000 bootstrap samples was entirely above zero (0.069 to 0.233)). Conversely, when IRS responsibility is high, the effect of IRS responsiveness on compliance through trust is negligible (0.001) and non-significant (a bootstrap confidence interval based on 10,000 bootstrap samples was between zero (-0.066 to 0.074)).

[insert Table 3 about here]

The significant interaction term between IRS responsiveness and IRS responsibility on trust is preliminary evidence for H1. Figure 2 below illustrates the nature of this interaction. The graph indicates a disordinal (crossover) interaction, consistent with the negative interaction coefficient. H1 predicted that trust will decrease when IRS responsibility is high and IRS responsiveness is highest relative to when IRS responsibility is low and IRS responsiveness is highest. The graph shows that same pattern of results.

[insert Figure 2 about here]

When the IRS was responsive by providing an *acknowledgement only*, trust in the IRS when the IRS had lower responsibility for preventing the identity theft (mean 4.45/7; SD = 1.51) was not significantly different than when the IRS had higher responsibility for preventing the identity theft (mean 4.31/7; SD = 1.46; t=0.633, p=0.27, one-tailed). However, trust in the IRS was significantly higher when responsibility for the identity theft was *lower* and the IRS was the most responsive by providing both an acknowledgement and corrective action, (mean 4.82/7; SD = 1.55) compared to when the IRS had *higher* responsibility for preventing the identity theft and provided the highest level of responsiveness (mean 4.04/7; SD = 1.46). This difference is significant (t=3.33, p<0.01, one-tailed). Overall, this pattern of means is consistent with our predictions. Consequently, H1 is supported.

As Table 3 also shows, the coefficient from IRS responsiveness to trust is positive (0.482) and significant (p<0.01); the interaction coefficient between IRS responsiveness and IRS responsibility on trust is negative (-0.478) and significant (p<0.01); and the coefficient from trust to tax compliance intentions is positive (0.287) and significant (p<0.01). The coefficient of IRS responsiveness to tax compliance intentions (0.092) is not significant (p=0.66), which is evidence of mediation. Thus, we find evidence that IRS responsiveness and IRS responsibility significantly and jointly influence compliance through trust. Consequently, H2 is confirmed.[11]

Sensitivity Analysis

Table 4 presents the results of a MANCOVA, with income as the only covariate, and trust in IRS and compliance intentions as the dependent variables. Although a MANCOVA is not as powerful a test as conditional process analysis (Hayes 2013), it can substantiate the extent to which there are significant direct effects and interaction effects between the independent variables and the dependent variables. Income was the only demographic variable significantly correlated with either dependent variable, and thus it was included as a covariate in the MANCOVA.[12]

Panel A of Table 4 shows the results of the multivariate analysis, and indicates that the most significant predictor variable is IRS responsiveness, with the interaction term of IRS responsibility and IRS responsiveness, and income, also significant. Panel B of Table 4 shows the univariate results of the final model for each dependent variable. There is a marginally significant main effect of responsibility on trust, $F(1,481) = 3.83$, p = 0.06, as well as a significant main effect of responsiveness on trust, $F(2,481) = 5.28$, p = 0.01. The interaction term for responsibility and responsiveness on trust is also significant, $F(2,481) = 4.21$, p = 0.02. There are no significant main effects of either independent variable or their interaction term on

[11] We also conducted a structural equation model analysis (not shown), which provided similar results to the moderated mediation analysis.

[12] Income and compliance were strongly and negatively correlated, $r_s(482) = -0.14$, $p<0.01$, indicating that higher taxpayer income is associated with less compliance.

compliance intentions. Overall, these results are consistent with the moderated mediation analysis per Table 3.

5. Discussion

Tax researchers have suggested that trust in authorities is essential to increase compliance (Kirchler et al. 2008), and have begun to investigate the role of trust in tax compliance (e.g., Wahl et al. 2010; Hofmann et al. 2014; Kogler et al. 2013; Gobena and Van Dijke 2016), but have not examined antecedents to trust and the potential influence of these antecedents on tax compliance, nor have they considered that there may be conditional indirect effects. To address this gap, we suggest that dimensions of accountability are likely to be antecedents to trust, since the accountability literature suggests that individuals will trust an organization if that organization is accountable to them (La Porte and Metlay 1996; Seal and Vincent-Jones 1997; Tolbert and Mossberger 2006; Fard and Rostamy 2007; Greiling and Halachmi 2010; Carmona et al. 2013). We then identify two antecedents to trust from Koppell's (2005) accountability dimensions that are likely to be both controllable by a tax authority and dimensions which directly affect taxpayers – responsibility and responsiveness. We conduct an experiment with U.S. taxpayers to examine how these two antecedents to trust impact taxpayers' trust in a tax authority and subsequent compliance, following tax identity theft.

We find strong empirical support for a moderated mediation model. We find that IRS responsiveness influences trust, and trust in turn influences compliance. However, this effect is conditional upon levels of IRS responsibility. When the IRS is to blame for identity theft, more responsiveness by the IRS does not significantly influence compliance through trust. Conversely, when the IRS is not to blame for identity theft, more responsiveness by the IRS significantly influences compliance through trust. These findings suggest that when the IRS is to blame for identity theft, there may be little the IRS can do to increase taxpayers' trust and subsequent compliance, which highlights the importance of preventing identity theft in the first place. Thus, tax and other authorities wishing to devote more resources to preventing identity theft may be justified in so doing.

We also find a significant interaction effect such that IRS responsibility moderates the effect of IRS responsiveness on taxpayers' trust in the IRS. The highest level of responsiveness results in the highest trust when the IRS was not to blame for preventing the identity theft (low responsibility), but when the IRS could have done more to prevent the identity theft (high responsibility), a high level of responsiveness actually diminishes trust. This finding is somewhat surprising, as it suggests that increasingly responsive actions by a tax authority following an identity theft do not necessarily increase trust in the tax authority. When taxpayers perceive that the tax authority could have prevented the identity theft, responding with an acknowledgement only is more likely to increase trust than responding with an acknowledgement and information about corrective action, perhaps because taxpayers view this response as inauthentic. When taxpayers perceive that the tax authority could have prevented the identity theft, providing no response whatsoever was just as effective at influencing trust as when the tax authority provided a letter acknowledging the occurrence of the identity theft and offered ways to make restitution. However, when taxpayers perceived that the tax authority could not have prevented the identity theft, providing increasingly responsive actions increased trust.

Ways to increase trust in the IRS is one of the key issues identified by the National Taxpayer Advocate Office (National Taxpayer Advocate 2017). Broadly, our findings provide empirical support that increasing trust is an important objective for the IRS, as trust directly impacts compliance, but only when the IRS is not perceived as responsible for the occurrence of identity theft. Therefore, increasing trust is unlikely to be as effective as preventing identity theft in the first place. Nevertheless, our findings also show that there are specific antecedents to trust, controllable by the IRS, that impact trust, which provides credence for the suggestion that creating a "trust paradigm" may be a way for tax administrations to complement the traditional enforcement approach to tax compliance (Kirchler et al. 2008; Alm and Torgler 2011).

Several contributions emerge from our study. We extend the accounting and tax literatures on trust, and integrate them with the accountability literature, by investigating how dimensions of organizational accountability, as antecedents of trust, impact subsequent compliance. We advance the tax literature on trust by confirming that antecedents of trust have a significant but indirect impact on tax compliance, and that this indirect effect of trust on compliance is conditional (cf., Kirchler et al. 2008). We also contribute to the tax literature by investigating how taxpayers respond to identity theft.

As with all research, there are several limitations to our study. First, the hypotheses of this research study are specifically tested using American taxpayers. While we believe that the implications of our study should be of interest to a broader worldwide audience, the findings of the study are applicable only to U.S. taxpayers (c.f., Bobek, Roberts, and Sweeney 2007). To address the issue of generalizability, we encourage further research using taxpayers from other countries. Second, because tax compliance is a sensitive issue, it is possible that participants' responses may have been biased by the nature of our study. However, to minimize this tendency, instructions to the study indicated that participants were assured of anonymity. In addition, we have no reason to suspect that any potential bias due to the sensitive nature of tax compliance will interact with our experimental conditions. Third, participants in our study provided compliance intentions rather than actual compliance behavior. While it is important to distinguish intentions from behavior, there is strong empirical support (Sheeran 2002) for several models in psychology, including the theory of reasoned action (Randall 1989), the protection motivation theory (Rogers 1983), and the theory of planned behavior (Carpenter and Reimers 2005), that hold that an individual's intention is the strongest predictor of an individual's behavior. Again, we encourage further research to examine tax compliance behavior, as well as tax compliance intentions.

The relationship between antecedents to trust appears to be somewhat complex. As well, the relationship between trust and compliance appears to be more complex than originally suggested by Kirchler et al. (2008). We encourage further research into trust and its antecedents and their impact on compliance and other behaviors to empirically examine the nuances of these relationships. We especially encourage research into the transparency dimension, as it is possible that taxpayers' perceptions of trust will be positively impacted by receiving communications about the results of IRS-wide investigations into alleged wrong-doing or perceived failure.

Future research could extend this study by considering how identity theft impacts tax authority legitimacy and subsequent compliance, as legitimacy is known to influence compliance with authorities (Tyler 2006). Future research could also examine how identity theft impacts political cynicism and political support across national and state governments. Identity theft is a major problem for the U.S. government, and is unlikely to be resolved soon. More empirical research is needed on this issue to understand adverse behavioral effects on taxpayers, and how, if at all, they may be mitigated or resolved.

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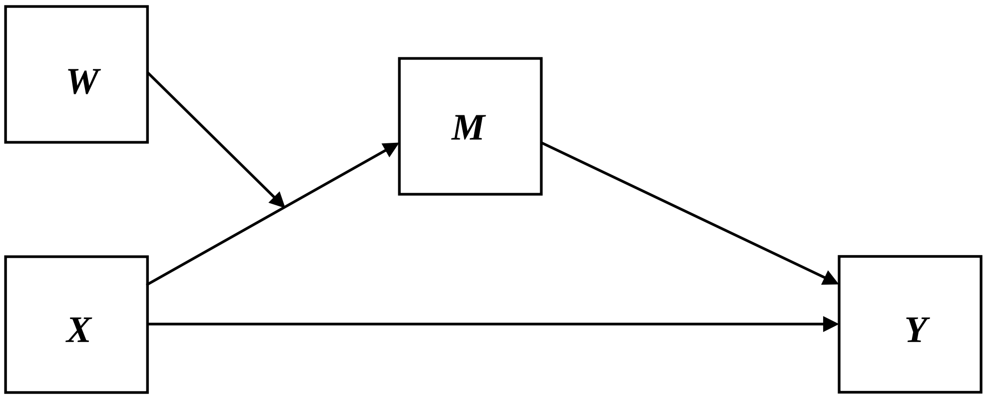
Table 1: Dimensions of Tax Authority Accountability (adapted from Koppell 2005)

Accountability dimension	**Key determination**	**Tax authority (IRS) application**	**Forum**
Transparency	Did the organization reveal the facts of its performance?	Did the IRS disclose its organizational performance information?	Congress
Liability	Did the organization face consequences for its performance?	Did the IRS face consequences for its performance?	Congress
Controllability	Did the organization do what the principal desired?	Did the IRS do what Congress desired?	Congress
Responsibility	Did the organization follow standards, rules and norms not set by legislators?	Did the IRS initiate changes in policies and programs to make laws work as intended?	taxpayers
Responsiveness	Did the organization fulfill the substantive expectation (demand/need)?	Did the IRS attend to the needs and desires of taxpayers?	taxpayers

Table 2 – Demographic profile statistics

Sample size	n = 482
Gender	
male	n = 251 (52.1%)
female	n = 231 (47.9%)
age	mean = 48.7 years std dev = 14.4 years
work experience	mean = 27.0 years std dev = 14.0 years
Negative experience with IRS?	yes = 78 (16.2%) no = 452 (83.8%)
Victim of tax identity theft?	yes = 30 (6.2%) no = 452 (93.8%)
Know a victim of tax identity theft?	yes = 106 (22.0%) no = 376 (78.0%)
Income:	
less than $25,000	n=90 (18.7%)
between $25,000 and $50,000	n=125 (25.9%)
between $50,001 and $75,000	n=103 (21.4%)
between $75,001 and $100,000	n=79 (16.4%)
greater than $100,000	n=60 (12.4%)
prefer not to answer	n=25 (5.2%)
Highest level of education completed:	
Less than high school	n = 5 (1.0%)
High school	n = 93 (19.3%)
Associate degree or some college courses	n = 179 (37.1%)
Bachelor degree	n = 132 (27.5%)
Graduate degree or courses	n = 73 (15.1%)
Political beliefs	
Very conservative	n = 59 (12.2%)
Moderately conservative	n = 93 (19.3%)
Slightly conservative	n = 40 (8.3%)
Middle of political spectrum	n = 156 (32.4%)
Slightly liberal	n = 40 (8.3%)
Moderately liberal	n = 54 (11.2%)
Very liberal	n = 40 (8.3%)

Table 3 – Model coefficients for moderated mediation analysis



Antecedent	Consequent					
	M (Trust in IRS)			*Y* (Tax Compliance Intentions)		
	Coeff.	*SE*	p-value	Coeff.	*SE*	p-value
X (IRS Responsiveness)	0.482	0.116	<.01	0.040	0.092	.66
W (IRS Responsibility)	0.223	0.215	0.30	--	--	--
X x *W*	-0.478	0.165	<.01	--	--	--
M (Trust in IRS)	--	--	--	0.287	0.052	<.01
Constant	3.893	0.151	<.01	2.979	0.234	<.01
	R^2 = 0.042 F(3, 478) = 6.92, p=<.01			R^2 = 0.067 F(2, 479) = 17.12, p=<.01		

Index of moderated mediation = -.137 (SE 0.053). A bootstrap confidence interval based on 10,000 bootstrap samples was entirely below zero (-0.257 to -0.047), meaning the moderated mediation model is significant. In other words, the conditional indirect effects of IRS Responsiveness on Tax Compliance Intentions through Trust in IRS differ significantly according to level of IRS Responsibility.

Conditional indirect effects of *X* (IRS Responsiveness) on *Y* (Tax Compliance Intentions)

When IRS Responsibility is **low**, the effect of IRS Responsiveness on Tax Compliance Intentions through Trust in IRS is positive (0.134; SE 0.042) and significant (a bootstrap confidence interval based on 10,000 bootstrap samples was entirely above zero (0.069 to 0.233).
When IRS Responsibility is **high**, the effect of IRS Responsiveness on Tax Compliance Intentions through Trust in IRS is positive (0.001; SE 0.035) but not significant (a bootstrap confidence interval based on 10,000 bootstrap samples was between zero (-0.066 to 0.074).

Table 4 – Multivariate Analysis of Covariance (MANCOVA)

Panel A: Multivariate Tests - The Effects of Responsibility and Responsiveness on Trust in IRS and Compliance Intentions (with income as covariate)

Source	**Wilk's λ**	**F-value[a]**	**Partial η^{2b}**	**Observed Power[c]**
Intercept	0.277	619.729**	0.723	1.000
Responsibility	0.992	2.013	0.008	0.416
Responsiveness	0.976	2.846**	0.012	0.776
Responsibility x Responsiveness	0.982	2.222*	0.009	0.655
Income	0.983	4.082*	0.018	0.724

[a] – significance at the 0.05 level is indicated by an **, and at the 0.10 level by an *
[b] – partial η^2 is measured on a scale of 0 to 1 and explains how much variance in the dependent variable is explained by the independent variable
[c] – observed power is also measured on a scale of 0 to 1, and is the ability to detect an effect if there is one. For example, a power of 0.950 suggests there is a 5% chance of failing to detect an effect that actually exists.

Panel B: Tests of Between-Subjects Effects

Source	**Dependent Variable**	**SS**	**F-value[a]**	**Partial η^{2b}**	**Observed Power[c]**
Intercept	TRUST	1864.309	836.597**	0.638	1.000
	COMPLIANCE	2067.378	711.107**	0.600	1.000
Responsibility	TRUST	8.541	3.833*	0.008	0.498
	COMPLIANCE	0.007	0.002	<0.001	0.050
Responsiveness	TRUST	23.527	5.279**	0.022	0.835
	COMPLIANCE	7.798	1.372	0.006	0.295
Responsibility x Responsiveness	TRUST	18.749	4.207**	0.017	0.738
	COMPLIANCE	0.533	0.092	<0.001	0.064
Income	TRUST	4.294	1.927	0.004	0.283
	COMPLIANCE	22.250	7.654**	0.016	0.788

[a] – significance at the 0.05 level is indicated by an **, and at the 0.10 level by an *
[b] – partial η^2 is measured on a scale of 0 to 1 and explains how much variance in the dependent variable is explained by the independent variable
[c] – observed power is also measured on a scale of 0 to 1, and is the ability to detect an effect if there is one. For example, a power of 0.950 suggests there is a 5% chance of failing to detect an effect that actually exists.

Figure 1: Diagram of hypothesized linkages

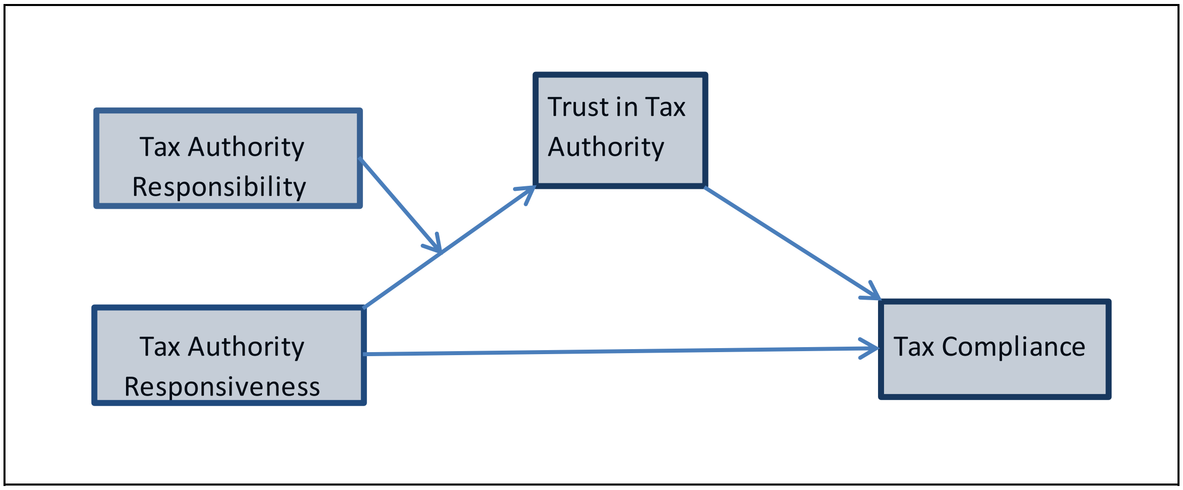


Figure 2: Interactive Effect of Responsibility and Responsiveness on Trust in IRS

Appendix – Experimental Instrument

Part 1 – Basic Tax Scenario, common to all experimental materials

Below is a story about a barber named Jason and his experiences with the IRS. Imagine that you are Jason. Please read it carefully, as you will be asked some follow-up questions.

Jason is a barber, and while he used to work in construction, he decided to open his own barber shop last year. He does not accept credit cards or checks, so his customers pay him in cash only. He keeps records of customers' appointments and haircuts by writing on a calendar with a pencil.

Shortly before the April 15th tax filing deadline, Jason learned that a hacker had broken into the IRS's computer system and accessed confidential taxpayer records, including his. The hacker misused Jason's Social Security Number to file a bogus tax return and claim a fraudulent refund. Jason realized he was a victim of identity theft.

Specific Scenario Information

High responsibility, No follow-up

Jason never received a letter, or any follow-up from the IRS after the identity theft occurred.

Around the same time, Jason learned that the IRS's systems were outdated and did not contain recent anti-hacking technology. Had the IRS's systems been more modern and secure, the identity theft could have been prevented.

High responsibility, Acknowledgement only

Jason received a letter from the IRS after the identity theft occurred, which stated, "The IRS shares the concern and dismay of those individuals whose privacy has been impacted by this malicious act."

Around the same time, Jason learned that the IRS's systems were outdated and did not contain recent anti-hacking technology. Had the IRS's systems been more modern and secure, the identity theft could have been prevented.

High responsibility, Acknowledgement and corrective action

Jason received a letter from the IRS after the identity theft occurred, which stated, "The IRS shares the concern and dismay of those individuals whose privacy has been impacted by this malicious act. The IRS responded aggressively to successfully protect our systems. We have augmented our monitoring and surveillance measures, so that the security of the IRS site continues to meet the highest standards. The IRS is taking a number of steps to help you in this difficult situation, including marking your tax account for protection, offering you a special identity protection PIN and one year of identity protection from Equifax."

Around the same time, Jason learned that the IRS's systems were outdated and did not contain recent anti-hacking technology. Had the IRS's systems been more modern and secure, the identity theft could have been prevented.

Low responsibility, No follow-up

Jason never received a letter, or any follow-up from the IRS after the identity theft occurred.

Around the same time, Jason learned that the IRS's systems were modern and contained recently installed anti-hacking technology. There is little the IRS could have done to prevent the identity theft.

Low responsibility, Acknowledgement only

Jason received a letter from the IRS after the identity theft occurred, which stated, “The IRS shares the concern and dismay of those individuals whose privacy has been impacted by this malicious act.”

Around the same time, Jason learned that the IRS's systems were modern and contained recently installed anti-hacking technology. There is little the IRS could have done to prevent the identity theft.

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Jason received a letter from the IRS after the identity theft occurred, which stated, “The IRS shares the concern and dismay of those individuals whose privacy has been impacted by this malicious act. The IRS responded aggressively to successfully protect our systems. We have augmented our monitoring and surveillance measures, so that the security of the IRS site continues to meet the highest standards. The IRS is taking a number of steps to help you in this difficult situation, including marking your tax account for protection, offering you a special identity protection PIN and one year of identity protection from Equifax.”

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Part 2 - Questions

<u>Dependent variables</u>

Please read the following statements and indicate your level of agreement by clicking on the appropriate response, where 1=strongly agree, and 7=strongly disagree.

<u>Trust</u>

1. Jason trusts the IRS to administer the tax system fairly.
2. Jason thinks the IRS is a trustworthy organization.
3. Jason trusts the IRS to do the right thing.

<u>Tax compliance intentions</u>

1. Jason would be tempted to not report all of his cash earnings on his tax return.
2. Jason is unlikely to report all his cash earnings to the IRS.
3. Under the circumstances, Jason might not report all of his cash earnings on his tax return.

<u>Instructional manipulation checks</u>

1. After Jason learned that his tax information was hacked, how did the IRS respond?

A) Nothing; The IRS never followed-up with Jason
B) The IRS sent Jason a letter in which they expressed concern and dismay over the identity theft
C) The IRS sent Jason a letter in which they expressed concern and dismay over the identity theft, and explained the steps they are taking to help him

2. What did the scenario say could have prevented this identity theft?

A) Nothing; the IRS already had modern and up-to-date anti-hacking technology in place.
B) More modern and secure systems at the IRS.
C) A greater focus on customer service.

Responsibility manipulation effectiveness questions

1. Jason blames the IRS for what happened. (1=strongly agree; 7=strongly disagree)
2. The IRS could have done more to prevent the identity theft. (1=strongly agree; 7=strongly disagree)

Other

1. Once Jason learned of the identity theft, his trust in the IRS was violated. (1=strongly agree; 7=strongly disagree)
2. The way the IRS responded to Jason was fair. (1=strongly agree; 7=strongly disagree)
3. The way the IRS responded to Jason was sincere. (1=strongly agree; 7=strongly disagree)

Demographic Questions

Please answer the following demographic questions.

1) Your sex: male female other

2) Have you ever had a negative experience with the IRS? yes no

3) What is your current age in years?

4) Please enter the number of years of work experience you have: ___________

5) Have you ever been a victim of tax identity theft? Yes no

6) Do you know anyone who has been a victim of tax identity theft? Yes no

7) Please indicate your highest level of education completed:
   Less than High School
   High School
   Associate degree or some college courses
   Bachelor Degree
   Post Graduate Degree or Courses

8) What is your annual income?
   less than $25,000
   between $25,000 and $50,000
   between $50,001 and $75,000
   between $75,001 and $100,000
   ≥ $100,000
   Prefer not to answer

9) How would you categorize your political beliefs?

   Very conservative
   Moderately conservative
   Slightly conservative
   Middle of political spectrum
   Slightly liberal
   Moderately liberal

Very liberal

10. I would be disappointed if my identity were stolen at the IRS. (1=strongly agree; 7=strongly disagree)

11. I would be disappointed if my identity were stolen anywhere else (other than the IRS). (1=strongly agree; 7=strongly disagree)

Thank you for your time in completing this survey. Your responses are very important in our research.