Advances in Accounting, incorporating Advances in International Accounting xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Advances in Accounting, incorporating Advances in International Accounting

journal homepage: www.elsevier.com/locate/adiac

Tax compliance in a social setting: The influence of social norms, trust in government, and perceived fairness on taxpayer compliance

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ARTICLE INFO

Article history:
Received 9 May 2016
Received in revised form 14 July 2016
Accepted 14 July 2016
Available online xxxx

Keywords:
Tax compliance
Social norms
Fairness
Trust

ABSTRACT

Voluntary tax compliance is important for governments around the world as they try to manage budget deficits. Traditional methods to improve tax compliance, such as increased audits, can be costly to implement. The purpose of this study is to examine the influence that social factors have on individuals' tax compliance intentions. Results of a survey of 217 U.S. taxpayers found support for the influence of social factors on tax compliance. This research concludes that social norms influence compliance intentions indirectly through internalization as personal norms. Specifically, as the strength of social norms in favor of tax compliance increases, personal norms of tax compliance also increase, and this leads to a subsequent increase in compliance intentions. We also conclude that trust in government has a significant influence on both perceived fairness of the tax system and compliance decisions. This study adds to current tax research in two important ways. First, the results suggest that the influence of social norms on tax compliance is largely through internalization as personal norms. Second, to the best of our knowledge this is also the first tax compliance study in which perception of fairness is modeled as a function of trust rather than vice-versa. This research may help taxing authorities develop less costly and more effective strategies for increasing taxpayer compliance.

1. Introduction

Many tax systems around the world, including the U.S. income tax system, rely on voluntary compliance of taxpayers. Therefore, factors that influence taxpayer compliance are of interest to the Internal Revenue Service (IRS), policymakers, academics, tax practitioners, and the general public. The individual income tax is the greatest source of revenue for the U.S. Federal Government (IRS.gov, 2012b).[1] Given the recent economic downturn and the looming budget deficit, the federal government (and governments at all levels) is exploring opportunities to increase revenue by reducing tax evasion and increasing taxpayer compliance. Typical efforts include increasing detection risk, levying higher penalties on offenders, etc.; such efforts can be rather expensive. For instance, the IRS spends approximately $28 per tax return on administrative costs (Alm & Yunas, 2009). Despite such costly efforts, the revenue lost due to noncompliance is substantial. The most recent IRS estimate indicates that approximately $385 billion in tax revenues was lost in 2006 due to tax evasion (IRS.gov, 2012a). The need to reduce noncompliance in the face of shrinking enforcement budgets has forced the IRS and U.S. state departments of revenue to better identify factors that influence compliance decisions. Consequently, this study focused on a subset of such factors, namely social factors, and how they influence an individual's tax compliance decisions.

Early theories of tax compliance framed compliance as rational decisions based on expected utility (Allingham & Sandmo, 1972). Behavioral research in tax compliance continued to focus on similar factors while explaining the response in terms of framing (McCaffery & Baron, 2004) and accountability (Sanders, Reckers, & Iyer, 2008). However, other research has found that individuals' compliance decisions are influenced very strongly by social factors as well (Torgler, 2007). That is, taxpayers' compliance intentions are not shaped merely by economic considerations or perceptions of detection risk and severity of sanctions but also their personal norms. However, merely knowing that an individual's personal norm regarding taxation influences his/her compliance behavior does not help improve compliance. Instead, if one can understand how these norms are formed, then perhaps the antecedents of the norms can be affected or shaped in a manner that can impact compliance positively. Consequently, one purpose of the paper is to develop a model that identifies social norms as antecedents of personal norms and how these social norms impact compliance by being fully subsumed by personal norms.

The dominant theory in tax compliance literature is that perception of fairness in the tax system increases an individual's trust in government and consequently, has a positive influence on compliance.

[1] In 2010 gross collections in the U.S. from individual income taxes was $1,163,688 million, whereas gross collections from corporate income taxes was $277,937 million (IRS, 2012b).

http://dx.doi.org/10.1016/j.adiac.2016.07.001

However, in this study we show that trust in government is an antecedent to perception of fairness; and trust influences compliance through the fairness construct. Consequently, another purpose of this paper is to develop a theoretical model that shows that trust is formed *before* fairness, individuals interpret the fairness of a system through the trust lens and subsequently form their compliance intention.

To achieve the two objectives stated above, in this study we developed and tested a comprehensive model of taxpayer compliance behavior that consisted of three major factors: norms, perceptions of tax system fairness, and trust in government. In addition, the model also consisted of three social norms as antecedents of personal norms. To the best of our knowledge this is the first comprehensive model that considers norms, trust and fairness in a single design.

This study found that compliance decisions are a result of many interrelated social factors. Specifically, social norms have an influence on compliance decisions, but only indirectly through internalization as personal norms. Trust in the government and perceived fairness of the tax system also have an interrelated influence on intended tax compliance such that perceived fairness of the tax system fully mediates the influence of trust in the government on compliance decisions.

This is an area where there has been a dearth of research. This understanding of how social factors simultaneously influence compliance with tax laws provides valuable insights on how compliance may be influenced and improved.

The remainder of this paper is organized as follows: the next section outlines the theory and hypothesis development. Data, and research design are described next followed by a presentation of results and analyses. The paper ends with a summary and our conclusions.

2. Background and hypothesis development

In recent years, voluntary tax compliance has been attributed to individual internal motivations to follow tax law, also termed as "tax morale." Tax morale encompasses several factors including social and personal norms, perceptions of fairness, trust in taxing authority, altruism, etc. (Kornhauser, 2007). In this study our goal was to identify social factors that policymakers may be able to take simple actions to influence. We focused on norms, trust in government, and perceived fairness of the tax system as determinants of tax compliance intentions.

2.1. Norms

Social psychology suggests that social interactions can have a significant impact on individuals' behavior. The influence of others is often manifested in the *social norms* of the group. *Social norms* are informal or formal rules of a group that guide the behavior and values of the group (Aronson, Wilson, & Akert, 2010; Cialdini & Trost, 1998). Kallgren, Reno, and Cialdini (2000) noted that norms are present in every social situation, even if their influence is not salient to members of the group. Therefore, social norms have important implications for behavior in any type of situation.

Since social norms are hypothesized to influence behavior in a variety of situations (Kallgren et al., 2000), they may also influence individuals' tax compliance decisions. Davis, Hecht, and Perkins (2003) modeled the determinants of tax compliance behavior and found that social norms,[2] along with enforcement and "others'" behavior, should influence compliance. Alm (1991) found that individuals who internalized a social norm[3] of compliance were more likely to comply. He also noted that individuals that believed others evaded taxes were more likely to evade themselves.

Using archival data, some studies have tested the theory that social norms influence compliance. Alm and Yunas (2009) examined the influence of social norms[4] by examining geographic compliance trends. The influence of social norms may be concentrated geographically since individuals in close proximity to each other are more likely to desire to be a part of the groups within their proximity. They found that geographic location, along with individuals' prior experiences, was a significant predictor of compliance.

Wenzel (2004) considered the influence of educational communications regarding sanctions on compliance. He found that the influence of sanction severity on compliance was moderated by social norms; severe sanctions were more effective at encouraging compliance when social norms favored compliance. This suggested that the public scrutiny threatened by evasion is only an effective deterrent if the social norms encourage compliance.

Prior research has typically considered norms as a single construct. However, social psychology research suggests that there are four different types of norms: (1) personal, (2) descriptive, (3) injunctive, and (4) subjective. These norms differ in their source and the influence they have on individuals' conformity to the group. While social norms are external influences on an individual's pre-disposition towards certain values, personal norms are the internal (hardwired) values. The relationship between social norms and personal norms is interesting because personal norms are likely influenced by social norms. In the tax compliance context, while internal (hardwired) values of an individual may be impossible to change, it may be possible to influence it via social norms.

2.1.1. Personal norms

Personal norms denote an individual's own moral standards and behavioral expectations (Cialdini & Trost, 1998; Wenzel, 2004). Personal norms may develop through internalization of the social norms of the groups an individual identifies with (Wenzel, 2004). That is, some of the most important social norms become part of the individuals' own moral standard. Since personal norms reflect an individual's own beliefs they should have a significant influence on all behavior including tax compliance behavior. Thus the first hypothesis is as follows:

H1. Personal norms of tax compliance have a positive effect on compliance intentions.

Although personal norms may have important implications for compliance decisions, they are difficult to directly influence because they are formed through internalization of experiences. Therefore, we consider the antecedents of personal norms, namely descriptive norms, injunctive norms, and subjective norms. These are the social norms that may influence the formation of personal norms and may also influence compliance decisions.[5]

2.1.2. Social norms

Descriptive social norms are perceptions of how other members of a group *actually* behave (Aronson et al., 2010). These norms influence the behavior of an individual within a social group. Descriptive norms are based on the actual actions of other members of a group and may sometimes conflict with behavior the group approves of (Aronson et al., 2010; Cialdini & Trost, 1998). These social norms provide information to help individuals guide their behavior in a variety of situations.[6]

Descriptive norms can encourage compliance with tax laws or evasion by helping individuals justify their actions. For instance, if

[2] In his analytical model, the concept of social norms was closely related to injunctive and subjective norms, and descriptive norms were captured in the behavior of others.

[3] This internalized social norm may be from descriptive, injunctive, or subjective norms, but Alm's (1991) study did not specifically identify nor study different types of norms.

[4] Alm and Yunas (2009) did not attempt to differentiate the influence of different types of social norms.

[5] Only one study (Bobek et al., 2007) examining the influence of each separate type of norm on tax compliance was found.

[6] Milgram et al. (1969) found that descriptive norms can entice individuals to engage in a behavior that they otherwise would not, such as staring aimlessly up at the sky simply because others stared aimlessly up at the sky.

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taxpayers believe that everyone else evades taxes, then they may be able to rationalize evasion (Pommerehne, Hart, & Frey, 1994). Descriptive norms can also provide information on what behaviors, such as compliance or evasion, were successful for other individuals (Cialdini & Trost, 1998). Therefore, if an individual perceives that others have a low intention to comply or that others have successfully evaded taxes, then he/she will have a lower moral cost relating to evasion, and will be more likely to evade (Torgler, 2003).

2.1.3. Injunctive norms

The second type of social norms is injunctive norm. Injunctive norms are perceptions of what behaviors most people in a group approve or disapprove of (Aronson et al., 2010; Cialdini & Trost, 1998). In contrast to descriptive norms that describe how people *actually act,* injunctive norms represent how people *should act* (Kallgren et al., 2000).[7]

Injunctive norms should influence behavior in a wide variety of situations including tax compliance situations. Bobek, Roberts, and Sweeney (2007) examined the separate influence that injunctive norms had on tax compliance behavior and found that injunctive norms helped predict compliance behavior. Due to individuals' desire for social approval, it is hypothesized that injunctive norms have a significant influence on tax compliance decisions.

2.1.4. Subjective norms

The final social norm is subjective norm. Subjective norms are the perception of how most people important to an individual believe he/she should act (Fishbein & Ajzen, 1975). Subjective norms are a specific type of injunctive norm. Whereas injunctive norms explain what society as a whole approves of, subjective norms explain what those close to an individual approve of. Subjective norms are often referred to as peer pressure. Subjective norms may help individuals determine whether compliance with tax laws or evasion will lead to approval by his/her closest group members (hence, stronger or weaker social relationships with those important to them) (Aronson et al., 2010). Therefore, it is hypothesized that subjective norms have an influence on tax compliance decisions.

2.1.5. Internalization

In addition to the direct effect that these social norms (descriptive, injunctive, and subjective) may have on tax compliance decisions, these social norms may also be internalized by an individual and influence his/her personal morals. Some studies examining social norms as a single construct have found support for the theory that personal norms at least partially mediate the relationship between social norms and evasion (Blanthorne & Kaplan, 2008; Wenzel, 2005). We expected that the mediation relationship observed with a single all-encompassing social norm construct will also be seen with each type of social norm. Therefore we hypothesize the following three relations.

H2A. Descriptive social norms of tax compliance affect compliance intentions positively and indirectly through personal norms of tax compliance.

H2B. Injunctive social norms of tax compliance affect compliance intentions positively and indirectly through personal norms of tax compliance.

H2C. Subjective social norms of tax compliance affect compliance intentions positively and indirectly through personal norms of tax compliance.

[7] Injunctive norms often provide information to individuals on what behavior is required to gain popularity. For instance, Crandall (1988) examined the correlation between binge eating and popularity in two different sororities and found that compliance with socially approved levels of binge eating (injunctive norms) was correlated with popularity. This finding is consistent with the idea that injunctive norms help explain what is socially acceptable within a group, and that individuals seeking social approval will comply with those norms.

2.2. Personal norms and trust in government

In addition to the hypothesized relation between personal norms and compliance intentions, we also expect that personal norms will influence other personal characteristics, such as trust in government. Norms have been shown to have a significant influence on many behaviors and opinions (intention to use public transportation: Bamberg, Hunecke, & Blobaum, 2007; littering intentions: Cialdini et al., 1990; binge eating: Crandall, 1988, etc.). Thus, we hypothesized the following:

H3. Personal norms of tax compliance positively affect trust in government.

2.3. Trust in government, perceptions of fairness and compliance

The trust-as-heuristic theory provides insight into the effects of declining trust and helps explain individuals' support for government action. This theory proposes that individuals use a simple decision rule to decide whether to support a government activity (Hetherington, 2005). It argues that when individuals perceive government as trustworthy they will support actions taken by the government, but when there is a lack of trust they will not support government actions (Rudolph, 2009).

Trust in government can have positive consequences for the regime; one potential positive consequence is increased taxpayer compliance. Torgler (2007) argued that a taxpayer's relationship with government, including their trust in government, was an important consideration when examining voluntary tax compliance. Jackson and Milliron (1986) and Levi (1998) also argued that trust in the government had a significant influence on tax compliance. The political disaffection thesis argues that when citizens lose trust in government, they begin to believe tax liabilities are too high (Rudolph, 2009). Consequently, distrust in government may provide the means whereby taxpayers rationalize evasion. In a series of studies using information from the World Values Survey, Torgler (2003a, 2003b, 2004) found that trust in government is positively related to individuals' willingness to comply with tax laws in various countries. Other studies have confirmed a positive relationship between trust in government and compliance in various countries including Richardson (2008, 47 countries), Song and Yarbough (1978, USA), and Vogel (1974: Sweden). In traditional tax literature, trust is modeled as an outcome of fairness. Lately, however, fairness perceptions are shown to be a result of initial determination of trustworthiness. The theoretical framework for fairness following trust is provided below.[8]

Rousseau, Sitkin, Burt, and Camerer (1998) defined trust as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions of another.” Two important concepts underlie this definition. First, trust requires some acceptance of risk. If there is no risk in an exchange, trust is unnecessary. Second, there is an implicit expectation that the exchange partner will act in a trustworthy manner in future interactions. The dominant research paradigm exploring the link between trust and fairness suggests that trust is a consequence of fairness (Holtz, 2013). Of the thirty-six studies noted in Holtz (2013), thirty-two conceptualized trust as an outcome of fairness. Traditional understanding of the fairness-trust relationship argued that trust developed slowly based on a series of favorable (or fair) interactions with another person (Holmes, 1991, Holtz, 2013, Zand, 1972). The result of many such fair transactions resulted in greater trust in the counterpart. Research within organizations has concluded that perceptions of fairness influence trust. DeConinck (2010) found that employees' perceptions of an organization's future procedural justice were related to the amount of trust they were willing to place in the

[8] Note that the term “fairness” used in this paper denotes “perceived fairness.” For the sake of easier reading, the term “perceived” does not always precede the term “fairness.” Regardless, “fairness” always denotes “perceived fairness.”

organization. At least in the management literature, fairness, specifically procedural justice, was shown to be the strongest predictor of an individual's trust in an organization (Cohen-Charash & Spector, 2001; Hubbell & Chory-Assad, 2005).

For a person to trust an exchange partner, he/she must first evaluate the trustworthiness of the partner. According to McAllister (1995) the foundations of trustworthiness may be affective-based (i.e., the exchange partner cares or is considerate) or cognitive-based (i.e., the exchange partner is competent or is reliable). The three factor trust model (ability, benevolence, and integrity) proposed by Mayer, Davis, and Schoorman (1995) also consists of similar affective and cognitive factors. For instance, ability (skill, expertise) is cognitively based while benevolence (caring, kindness) and integrity (truthfulness, morality) are affectively based. For trust to develop, the exchange partner must first be judged as trustworthy (Holtz, 2013). Most extant research assumed that trustworthiness develops as a result of favorable transactions with the counterpart.

Recent research, however, challenges the notion that trust takes time to develop and that it is a result of a series of favorable exchanges. Instead, based on research in evolutionary theory and neurosciences, Holtz (2013) argues that trust develops quickly. For instance, evolutionary theorists argue that quick inferences of trustworthiness would have been essential for human survival (Holtz, 2013). According to Dunbar (1998, 2007), human ancestors who lived in groups and faced social challenges must have had rapid trust forming mechanisms to navigate social complexities. To enhance their chances of survival, humans had to quickly gauge the intentions of the entities with whom they interacted. That is, over the years, humans were "hardwired" to make decisions regarding trust rapidly even before they engaged in interactions. The human brain has cognitive mechanisms to rapidly assess the trustworthiness of exchange partners (Cosmides & Tooby, 1992). These mechanisms might take into consideration facial expressions, body language, attractiveness, etc., or trust could be based on a person's belief regarding another person's intent or competence based on stereotypes including demographics, education, gender, dress, etc. (Eckel & Wilson, 2003). For instance, people generally believe that medical professionals have high integrity or professors are very knowledgeable.

Holtz (2013) also cites neuro-scientific research that indicates that humans can evaluate the trustworthiness of a potential exchange partner in a matter of milliseconds (Todorov, Pakrashi, & Oosterhof, 2009).[9] Initial conclusions regarding the trustworthiness of a person were accompanied by changes in the amygdala region of the brain. This is often described as a "gut feeling" (Winston, Strange, O'Doherty, & Dolan, 2002). In addition, trust propensity (the degree of trustworthiness feeling) seemed to be enhanced by the presence of oxytocin (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005). Consequently, Holtz (2013), argues that evaluations of trustworthiness, and hence trust, develop *before* exchange transactions actually take place. To reconcile the trust primacy theory with the erstwhile findings that fairness induces trust, Holtz (2013) classifies fairness into two dimensions: entity-based and event-based justice perceptions. Entity-based justice perceptions are impacted by the psychological state of trust. That is, trust impacts how events are interpreted (fair or unfair). Event-based justice perceptions may be related to experiences gathered in prior events. Taken together, one may very well see a reciprocal relationship between trust and fairness over time.

Because trust in government is entity-based, trust forms prior to initiation of social exchange. In this case, Holtz (2013) argues that trust influences fairness perceptions. Based on Folger and Cropanzano's fairness theory (2001) and counterfactuals processing literature (Kahneman, 1995), Holtz (2013) claims that events are not classified as being inherently fair or unfair. Instead, they are interpreted as fair or unfair based upon the trustworthiness of the entity. That is, justice is a subjective phenomenon subject to individual interpretations. According to the counterfactual processing literature, individuals employ a referent standard to which they compare the current event and then decide whether an exchange is just or unjust. Holtz (2013) discusses three counterfactuals: would, could, and should. For instance, an event will be perceived as unfair if a person conceives that (i) they *would* have been better off if the event had been handled differently; (ii) the event *could* have been handled differently; and (iii) the event *should* have been handled differently (Holtz 2013, p. 1900). That is, the initial evaluation of trustworthiness of an entity provides either a "halo" effect or a "negative stereotype" which colors how they interpret the fairness of an exchange with that entity.

In the trust in government context, these counterfactuals are particularly salient because partisan news sources and talking points provide an unending stream of unfavorable counterfactuals for citizens to use referent standards. For example, for citizens whose party is out of power in the White House talking points will continuously stress how outcomes *would* have been better had there been a member of their own party in the White House, how events *could* have been handled better and how events *should* have been handled as against how they were handled by the current government.[10] The counterfactual processing theory also parallels the literature on confirmation bias in that people interpret events in a manner that confirms their prior expectations including attending to and assigning greater importance to information that validates their prior belief and discounting or ignoring information that contradicts their prior belief. Thus, based on the notion of trust primacy (Holtz, 2013), we hypothesized that.

H4. Trust in government has a positive effect on fairness perception.

2.4. Fairness and tax compliance

Perceptions of fairness may be especially important in tax compliance decisions. General theories of tax compliance support the idea that perceptions of fairness influence tax compliance. Torgler's (2007) theory of tax compliance purports that perceptions of fairness are one of three most important determinants of compliance. In Andreoni, Erard, and Feinstein's (1998) review of the tax compliance literature they also observed that perceptions of fairness are important for tax compliance decisions.

For instance, Bordignon (1993) concluded that taxpayers evade taxes when they believe that the level of public goods, the outputs, is not sufficient given their tax liability, or if they believe the tax schedule is unfair. Survey evidence supports this theory by indicating that taxpayers' perceptions of the way they are treated relative to others is significantly correlated with compliance (Alm, 1991). If taxpayers perceive that a tax system lacks fairness they will be able to rationalize evasion (Davis et al., 2003). Overall, these results suggest that perceptions of fairness are positively related to compliance (Falkinger, 1995). Consequently, we hypothesize that

H5. A taxpayer's perception of tax system fairness is positively related to compliance intentions.

3. Method

3.1. Data

A survey was used to collect information on taxpayers' party identification, trust in government, fairness perceptions and compliance intentions. In order to try to determine the social perceptions of many different taxpayers, effort was taken to obtain participants from

[9] Evidence includes fight-or-flight reactions, changes in the amygdala region of the brain that controls emotions, presence of oxytocin.

[10] The in-power partisan news talking points would stress positive counterfactuals as to how events would have been worse, how things *couldn't* have been handled any better, and how things have been handled as best as they *should* have been handled.

different sources. Colleagues and associates were asked to recruit individuals to participate from their own personal and professional networks, thereby creating distance between the researcher and the participants. The number of participants directly recruited by the researcher was significantly less than the total number of participants. The goal of this study was to determine factors that influence tax compliance for the average U.S. taxpayer, so demographic information was collected to determine if this goal is met. The demographic information was general in nature and the surveys remained confidential to encourage honest responses. To encourage participation, participants were informed that they had the option to be entered in a drawing for prizes if they completed the survey.

Data was collected using a questionnaire.[11] All participants completed the questionnaire on-line through Qualtrics. The survey was administered between January 29, 2013 and March 17, 2013. Participants answered questions relating to fairness perceptions and trust in government. Participants were also presented with a hypothetical tax scenario and their compliance intentions were gauged. Finally, participants responded to demographic information.

3.2. Independent factors

3.2.1. Norms

The determining factors were measured first. The order in which these factors were measured corresponds with the proposed model of tax compliance. Scales validated in prior research were used, when available, to measure each of these independent factors and are described in the subsections that follow.

Descriptive norms of tax compliance provide information to individuals relating to what other people in society actually do whereas injunctive norms provide information relating to what society views as the correct actions. Measures of descriptive and injunctive norms were primarily adapted from Bobek et al. (2007). Bobek et al. (2007) measured descriptive norms with two questions. To increase the construct validity of descriptive norms three additional questions relating to descriptive norms were created. Bobek et al. measured injunctive norms with three questions. Three additional questions were added to Bobek et al.'s scale to measure injunctive norms. These two norms, descriptive and injunctive, were measured on a seven-point Likert scale with one being "strongly agree" and seven being "strongly disagree".

Subjective norms are the norms of those close to an individual, such as family and friends. The scale to measure subjective norms was adapted from Blanthorne and Kaplan (2008). This scale uses five participant responses to measure subjective tax compliance norms. This norm was measured on a seven-point Likert scale with one being "discourages underreporting income" and seven being "encourages underreporting income".

The final norm, personal norms, relates to an individual's personal opinions regarding tax compliance and were measured with a four item scale adapted from Bobek et al. (2007) and two additional items created for the present study. Personal norms were measured on a seven-point Likert scale with one being "strongly agree" and seven being "strongly disagree".

Trust in government is the willingness of a citizen to be vulnerable to the actions of the government despite his/her inability to actively control the actions of the government. Miller (1974) measured trust in government using a five-item scale. This scale was adopted for the present study. In this scale participants were asked to read several statements and choose the extent to which they trust their government.

The scale to measure perceptions of tax system fairness was adapted from multiple studies. Nakayachi and Cvetkovich (2010) measured perceptions of fairness with one question: "Does the government propose and implement policies fairly?" Since this question is concerned with two issues (a) the proposal and (b) the implementation of fair policies, we addressed it with two questions in the present study. In order to increase the validity of our fairness measure, two additional questions used by Herda and Lavelle (2011) to measure perceptions of fairness were used. That is, we used a four-item scale used to measure perceptions of fairness. All items were measured on a seven-point Likert scale with one indicating "strongly agree" and seven indicating "strongly disagree."

3.3. Dependent measure

The dependent variable of interest is the likelihood of a taxpayer to comply with tax laws. Based on prior research, this variable was measured by asking participants to respond to a hypothetical tax scenario. The scenario related to a tax compliance issue where the taxpayer may perceive an opportunity to evade taxes, but where the tax law and facts of the situation allowed for a single legal response. Participants were asked to respond to the scenario with a dollar amount and complete a 5-item scale reporting their intended compliance.

The scenario had to meet a couple requirements. First, the scenario needed to be concise so that participants could quickly understand the issues. Additionally, the scenario had to be simple enough so that it did not require advanced tax knowledge on the part of participants to make their compliance decision. These scenarios were designed so that we could survey average U.S. taxpayers. The scenario related to cash income that was received with no paper trail and asked

Table 1
Factor loadings.

Injunctive norms	Loading
Question 1	0.86***
Question 2	0.74***
Question 3	0.61***
Descriptive norms	Loading
Question 1	0.87***
Question 2	0.88***
Question 3	0.59***
Subjective norms	Loading
Question 1	0.55***
Question 2	0.64***
Question 3	0.93***
Question 4	0.75***
Personal norms	Loading
Question 1	0.92***
Question 2	0.92***
Question 3	0.71***
Question 4	0.74***
Trust	Loading
Question 1	0.72***
Question 2	0.79***
Question 3	0.65***
Question 4	0.65***
Question 5	0.61***
Fairness	
Question 1	0.88***
Question 2	0.86***
Question 3	0.75***
Question 4	0.74***
Compliance intention	
Question 1	0.74***
Question 2	0.94***
Question 3	0.87***
Question 4	0.80***

*** P-value < 0.01.

[11] Approval for this study was obtained from the Institutional Review Board at the institution where the study was initiated.

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Table 2
Correlations.

	Compliance intentions	Trust in government	Perceived fairness of tax system	Personal norms	Subjective norms	Descriptive norms	Injunctive norms
Compliance intentions	1.000	0.125**	0.184***	0.562***	0.194***	0.260***	0.156**
Trust in government		1.000	0.634***	0.107*	0.018	0.320***	0.240***
Perceived fairness of tax system			1.000	0.193***	0.045	0.279***	0.209***
Personal norms				1.000	0.372***	0.249***	0.265***
Subjective norms					1.000	0.118**	0.074
Descriptive norms						1.000	0.208***
Injunctive norms							1.000

*P-value < 0.10.
**P-value < 0.05.
***P-value < 0.01.

participants several questions relating to their intention to report the cash income if they were in a similar situation.

Structural equation models in LISREL were used to test our hypotheses. Results are presented in the next section.

4. Results

4.1. Summary statistics

As mentioned earlier, data was collected from January 29, 2013 to March 17, 2013. The researcher e-mailed 42 personal contacts to request participation in the study and help recruiting additional participants. Each personal contact was asked to forward the survey instructions and solicitation to their own diverse contacts. Of the individuals contacted, 30 responded that they would help with the recruiting process. The survey was started by 257 individuals, but 6 participants did not meet the requirements for participation and withdrew from the survey. An additional 28 responses were removed from data analysis because the participants failed to complete questions measuring the dependent variable. In all, there were 217 complete responses.

The use of an on-line survey allowed responses to be obtained from throughout the United States. Responses were obtained from residents of 31 different states; two respondents lived in foreign countries, but paid U.S. taxes. There were 60 democrats (27.6%), 106 republicans (48.8%), and 45 that do not affiliate with a political party (20.7%).

4.2. Tests of hypotheses

Our hypotheses suggest a proposed model of key interrelated social factors that influence tax compliance. To simultaneously test all relationships in the model, we used structural equation modeling (SEM). SEM is the most appropriate analysis for this study for two main reasons. First, SEM has the ability to simultaneously examine the relationship between several different variables. Since the hypotheses proposed that several factors simultaneously influence taxpayer compliance, it is important to measure all variables in a single model. Additionally, SEM is able to effectively capture the influence of latent variables on a dependent variable, and each of the variables of interest in this study is a latent variable.

LISREL was used to perform Structural Equation Modeling (SEM). First, we performed Confirmatory Factor Analysis to construct a measurement model. Items that loaded well were retained to construct the latent variables of interest in this study. The model fit for the measurement model was acceptable (IFI = 0.95, GFI = 0.83, RMSEA = 0.067). Factor loadings and significance levels for each variable are reported in Table 1.

Correlation analysis was performed to gain a preliminary understanding of the relationships between the variables of interest and is

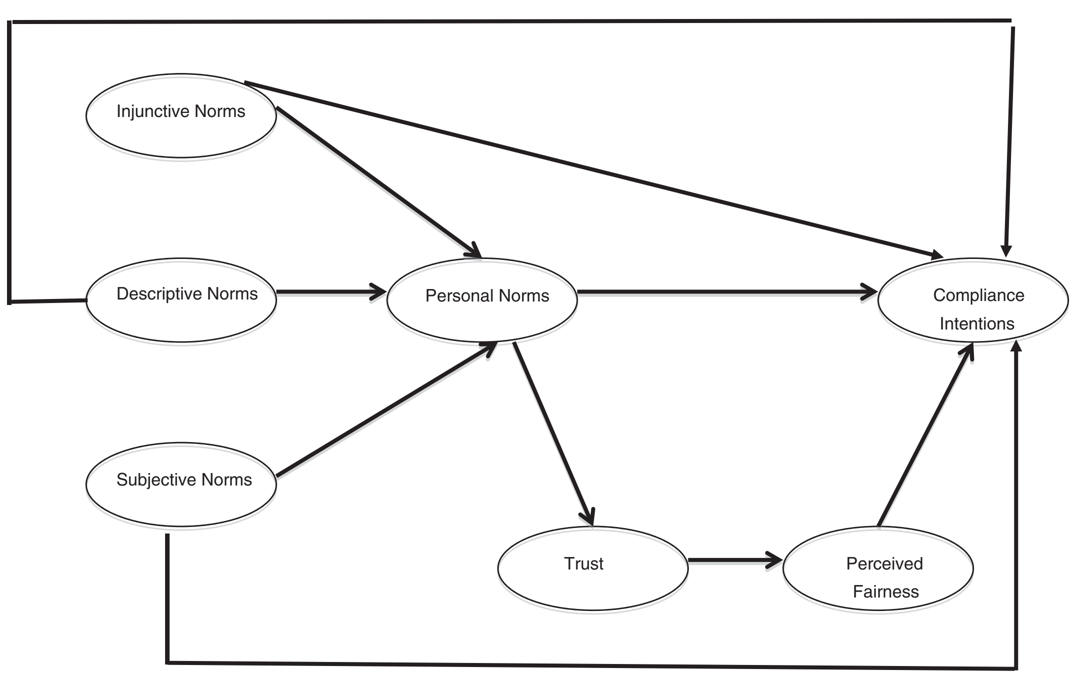

Fig. 1. Proposed model of taxpayer compliance.

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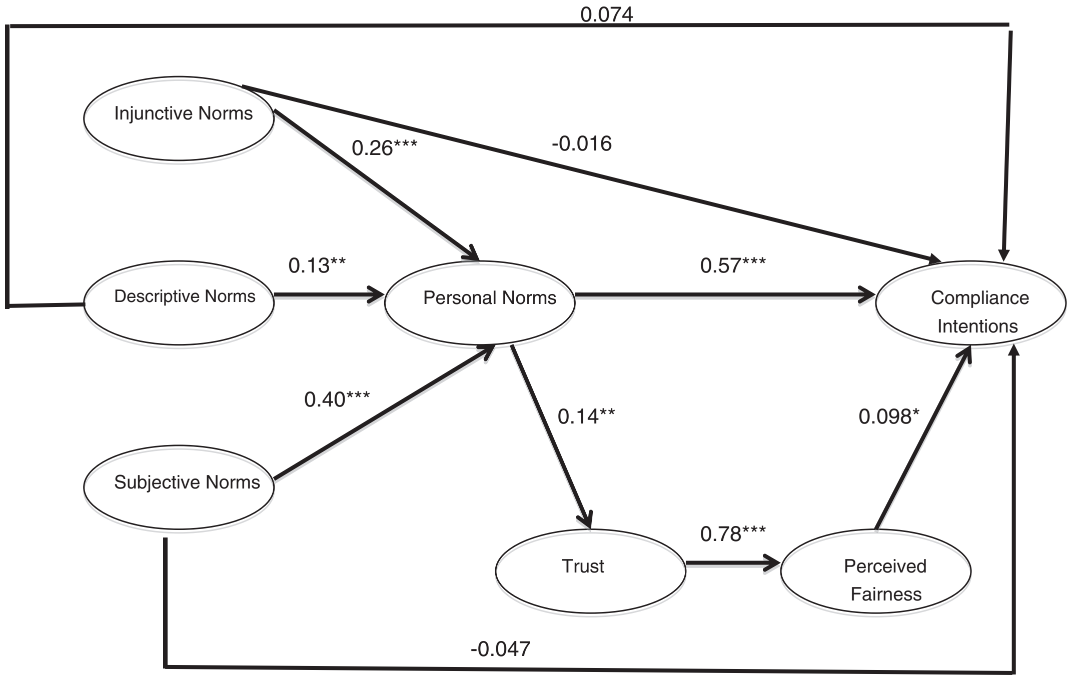


This table reports standardized coefficients for structural model

* P-value < 0.10
** P-value < 0.05
*** P-value < 0.01

Fit Indices:

IFI	0.96
GFI	0.84
RMSEA	0.059
Chi-square	532.28
df	310
SRMR	0.086

Fig. 2. Initial structural model.

reported in Table 2. This analysis indicated that many of the variables of interest were significantly correlated with each other. This highlights the need to simultaneously examine the relationships between these variables using SEM to gain a better understanding of how these variables interact.

Next, a structural model was estimated to test the relationships hypothesized in the proposed model of taxpayer compliance. SEM fit indices were used to assess the model fit. Results of the SEM analysis are shown in Fig. 2. (See Fig. 1.)

H1 predicting that personal norms influence compliance intentions was strongly supported. However, none of the other social norms had a significant direct influence on compliance intentions. Additionally, each hypothesis suggesting that social norms influence personal norms was supported (H2A, H2B, and H2C). We also found support for the hypotheses relating to trust and perceived fairness, specifically personal norms influence trust in government and perceived fairness of the tax system mediates the influence of trust in government on compliance intentions (H3, H4, and H5 respectively). The significant relationship between trust and compliance (indicated in Table 2, correlation) is fully mediated by fairness.[12]

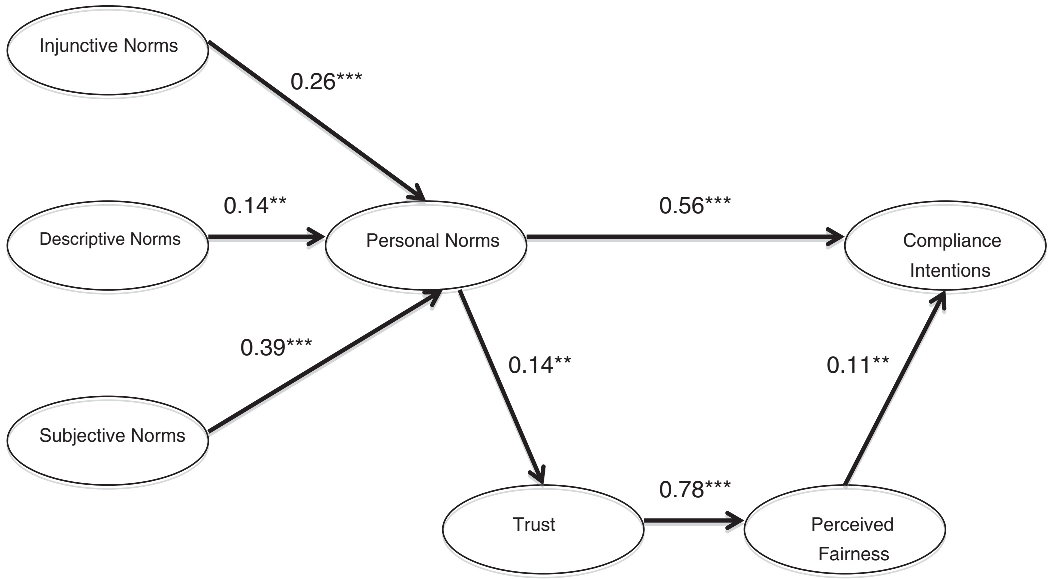
[12] We also ran an SEM model with a direct relationship between trust and compliance. When fairness is included in the model the relationship between trust and compliance is fully mediated. For the sake of better exposition of results, this model is not shown.

4.3. Supplemental analyses

The prior results suggested that social norms largely influence compliance intentions through internalization as personal norms. Therefore, a structural model was estimated where personal norms fully mediated the social norms-compliance intentions relationship. Results of this test are shown in Fig. 3. In this model each social norm had a significant influence on personal norms and personal norms continued to have a significant influence on compliance intentions. The prior hypotheses suggesting that personal norms influence trust in government, and that perceived fairness of the tax system fully mediate the relationship between trust in government and compliance intentions continued to be supported.

Fit indices for the structural model discussed above and shown in Fig. 3 are generally good indicating an acceptable fit (RMSEA = 0.058, Chi-Square 533.79 with 313 degrees of freedom, IFI = 0.96, SRMR = .087, GFI = 0.84). Results of this structural model suggested that social norms, regardless of the type of norm, have a significant influence on personal norms, and personal norms fully mediate the social norms-compliance intentions relation. Personal norms also have a significant influence on trust in government, and perceived fairness of the tax system fully mediates the relationship between trust in government and compliance intentions.

This highlights the importance of simultaneously examining the influence of variables of interest on compliance intentions. Although the



This table reports standardized coefficients for structural model

* P-value < 0.10
** P-value < 0.05
*** P-value < 0.01

Fit Indices:

IFI	0.96
GFI	0.84
RMSEA	0.058
Chi-square	533.79
df	313
SRMR	0.087

Fig. 3. Final structural model.

correlation coefficients indicated that the social norms (subjective, descriptive, and injunctive) were significantly correlated with compliance intentions, SEM analysis that included all social norms and personal norms in the model of compliance intentions indicated that these social norms only indirectly influence compliance intentions through personal norms.

5. Conclusions

Many governments around the world rely on individuals to voluntarily comply with income tax laws. However, revenues lost to individual taxpayers' evasion are substantial. These governments are continually seeking for ways to improve taxpayer compliance. Although increased penalties and increased audit rates can increase tax compliance, these compliance programs are costly to implement. Thus, an understanding of the many different factors that influence tax compliance may help governments develop alternate compliance programs.

Traditionally, individual tax compliance has been modeled using primarily economic factors. Although these studies found that economic factors help explain individual tax compliance behavior, they also suggested that tax compliance decisions are not influenced by economic factors alone. Psychology research argues that social and individual psychological issues can have a significant influence on decisions. This paper reports the results of a survey of 217 U.S. taxpayers designed to examine the influence of norms on individual taxpayer compliance. The results indicated that norms have a significant influence on taxpayers' decisions.

The first type of social norm is injunctive norms. Injunctive norms are the perceptions of what society as a whole believes to be acceptable. Injunctive norms of tax compliance are the degree to which an individual perceives that society believes it is important to comply with tax laws. Descriptive norms of tax compliance also relate to the norms of society as a whole, but relate to how members of the society actually behave as opposed to what they believe is correct. Society may believe that it is immoral to evade taxes (injunctive norm), but they may evade taxes anyways, at least partially, despite their belief. Subjective norms are the norms of those closest to an individual and include the norms of friends, family, and close business associates.

To help gain an understanding of factors that lead to tax compliance, the influence of these social norms and personal norms on compliance intentions was modeled. Simple correlation analyses were consistent with each hypothesis and seemed to suggest that each norm examined (three types of social norms and personal norms) had a positive and significant influence on tax compliance. However, the structural model indicated that social norms only influence compliance indirectly through internalization as personal norms. This is an important finding because it suggests that social norms do not simply influence individuals' compliance decisions, but they also change the way individuals feel about

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the importance of compliance. This suggests that tax compliance may be improved by changing social norms, since norms are internalized as personal norms.

We also examined the influence of trust in government and perceived fairness of the tax system on compliance intentions. We found that personal norms have a significant influence on trust in government suggesting that personal norms have an influence on many individual factors by framing the way an individual views the world. In addition we also found that trust in government is related to fairness perception which in turn is related to compliance intentions.

Traditional fairness-trust models considered trust as a consequence of perceived fairness (i.e., trust forms as a result of a series of favorable exchanges with a partner). In prior tax compliance literature, compliance intention was modeled as a function of trust in the taxing authority. In this study, we introduce the trust primacy model of Holtz (2013) into the tax compliance literature and model fairness as a consequence of trust. That is, actions of an entity are deemed as fair or unfair depending upon how much that entity is trusted.

Some limitations are inherent in this study. Since norms are context specific and difficult to change, a survey was used to measure taxpayers' norms and attitudes. The use of a survey methodology did not allow us to manipulate the independent variables. Although it is expected that these relationships between variables will exist in other countries as well, future research should examine these relations in countries outside the U.S.

The results of this study may inform policymakers of ways to improve tax compliance. For instance, they may find it useful to work to change some social norms. Descriptive norms relate to what taxpayers believe other taxpayers do and may be the easiest norms to change in the short-term. For instance, the IRS could be careful to not over publicize tax evasion and may be able to improve descriptive norms by publicizing the large number of taxes that are paid, the number of taxpayers that do report cash income, the various uses of tax revenue, etc. Tax compliance may also improve if trust in government improves.

This study highlights many opportunities for future research. For instance, future research may examine methods of changing social norms and if the changes in social norms are immediately internalized as personal norms or if the internalization as personal norms lags behind the change in social norms. Additionally, taxation research would benefit from an examination of the influence of other social factors on tax compliance. Governments may be interested in research examining methods of changing norms of tax compliance and the extent to which these changes influence tax compliance.

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