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Towards Integrating Antecedents of Voluntary Tax Compliance



**Towards Integrating Antecedents of Voluntary
Tax Compliance**

Towards Integrating Antecedents of Voluntary Tax Compliance

Naar het integreren van antecedenten van belasting-naleving

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CHAPTER ONE

1 GENERAL INTRODUCTION

"No government can exist without taxation. This money must necessarily be levied on the people; and the grand art consists of levying so as not to oppress."

-Frederick the Great

Governments around the world use tax money to provide common public goods and services that are not provided by private businesses (Huber, Shubik, & Sunder, 2013). Taxes keep roads safe and well-maintained, fund public libraries, keep emergency services like the fire department running, and pay for public parks. Taxes are also used to fund various government programs that help the poor, such as the provision of basic healthcare and education. Most importantly, a nation's defense, security, and policing services are financed primarily by tax money (McGee, 2004). In addition to financing government expenditure, taxation is used to redistribute wealth among citizens (Joumard, Pisu, & Bloch, 2013) and as a fiscal tool. For example, when demand for goods and services plummets the government can reduce the amount of taxes levied so that individuals and firms have increased purchasing power; vice versa, when inflation threatens an economy the government can increase taxation to dampen demand and keep inflation at bay (Mattesini & Rossi, 2012; Ezejiofor, Adigwe, & Echekeba, 2015).

However, despite the important roles played by taxation, almost everyone abhors paying taxes (Ventry, 2011). One popular approach to scientific thinking about stimulating tax compliance (i.e. paying one's taxes) is the economic deterrence approach. A classic theoretical perspective along this line is provided in the work of Allingham and Sandmo (1972), who consider individual taxpayers as selfish individuals who calculate the cost-benefit tradeoff before deciding whether or not to evade taxes. According to this view, taxpayers compare the potential cost of evading taxes (the sum of the taxes due plus any penalty imposed in case of detection) with the potential benefits (the savings from not paying taxes if they manage to escape detection). Following this cost-benefit comparison, and taking into account the likelihood of getting caught, taxpayers decide to pay taxes only if their expected costs outweigh the corresponding expected benefits (see Wenzel, 2003 for an overview).

However, empirical studies show that economic deterrence is inadequate to explain existing compliance levels, given the limited enforcement resources at the disposal of tax authorities (see Alm, Clark, & Leibel, 2016; Alm, Kirchler, & Muehlbacher, 2012; Torgler, 2003, 2008; Wenzel, 2003). In response, scholars have argued that there are a number of limitations to the economic deterrence approach. For instance, some argue that human beings

are not necessarily selfish and calculative of their own benefits and costs. In fact, individuals who strongly identify with a social collective tend to be more concerned with collective interests and may not calculate the personal cost to them of contributing for the collective benefit (see Huo, 2003; Tyler, & Blader, 2001; Wenzel, 2002). Further qualifying the value of the economic deterrence approach, it has been argued that strong reliance on deterrence by tax authorities to enforce tax laws will damage taxpayers' trust in authority and can provoke taxpayers to aggressively evade taxes whenever they see the possibility to do so (Feld & Frey, 2002; Gangl, Hofmann, Pollai, & Kirchler, 2012; Kirchler, Hoelzl, & Wahl, 2008).

Alternative approaches to understanding tax evasion identify social-psychological and normative variables as decisive factors in eliciting voluntary tax compliance, rather than economic deterrent factors (see Alm et al., 2012; Arrington, 1985; Bărbuțămișu, 2011; Bobek et al., 2013; Bobek et al., 2007; Casey & Scholz, 1991). Specifically, procedural justice (e.g. Farrar, 2015; Murphy et al., 2016; Wenzel, 2002), distributive justice (e.g. Saad, 2011; Verboon & Goslinga, 2009; Wenzel, 2003), interactional justice (e.g. Feld & Frey, 2002; Wenzel, 2006), trust in the tax authority (e.g. Scholz & Lubell, 1998; Wahl et al., 2010) and normative constraints (e.g. Bobek et al., 2013; Wenzel, 2004) have all been found to influence voluntary compliance by taxpayers. Such approaches are also less expensive than the deterrent approach, on account of the voluntary cooperation by taxpayers with the tax authority, as opposed to the use of extensive tax audit programs and subsequent penalties, including the jailing of tax evaders (Alm, Kirchler, & Muehlbacher, 2012; Muehlbacher, Kirchler, & Schwarzenberger, 2011; Murphy, 2003).

In this dissertation, I study variables that encourage voluntary (rather than enforced) tax compliance. As noted above, the deterrence approach to enforcing tax compliance is insufficient to explain prevailing tax compliance behavior, whereas research shows that social-psychological factors can help us to understand voluntary compliance. I, therefore, pursue a social-psychological paradigm and explore how some of the best-studied variables actually relate to one another. In the integration process, I also provide a way to connect deterrence and social-psychological approaches. In the following sections I present a brief overview of the social-psychological factors of focus in the present dissertation and how

they affect voluntary tax compliance behavior.

1.1 Distributive Justice

Distributive justice refers to the perceived fairness of the distribution of benefits and burdens among members of a group (Thibaut & Walker, 1975). Individuals judge the fairness of the share of benefits and burdens distributed to them by a system using some implicit norms, such as the equity rule (Adams, 1965; Thibaut & Walker, 1975; Verboon & Van Dijke, 2007). A distributive system is perceived to be just when individuals deem that they are receiving benefits proportional to their contribution (Adams, 1965; Saad, 2011; Thibaut & Walker, 1975). In the tax compliance literature, distributive justice refers to the perceived fairness of the distribution of tax-funded benefits and tax burdens (see Saad, 2011; Verboon & Van Dijke, 2007; Wenzel, 2002, 2003). Because taxpayers do not claim the provision of government-supplied goods and services in exact proportion to the tax money paid—so-called *quid pro quo*—they often focus on vertical and horizontal equities. Vertical equity refers to the relative equitability of the tax burdens of taxpayers with unequal amounts of taxable income, whereas horizontal equity refers to the equitability of the tax burdens of taxpayers with the same amount of taxable income (see Wenzel, 2002; Saad, 2011). When vertical or horizontal equity or both are perceived as low, taxpayers tend not to voluntarily comply with their tax obligations (Saad, 2011, Verboon & Goslinga, 2009; Wenzel, 2003).

1.2 Procedural Justice

Procedural justice refers to the perceived fairness in the decision-making processes that resolve disputes and allocate resources (Leventhal, 1976, 1980; Thibaut & Walker, 1975). The fairness of these processes is evaluated against six criteria—consistency, bias suppression, accuracy, correctability, representativeness and ethicality (Leventhal, 1980). Each criterion is explained briefly here. The consistency criterion requires that allocative procedures be applied consistently among different individuals at all times, allowing no room for anyone person to be given privileges over anyone else. The bias suppression criterion demands that prejudice should be avoided in allocative procedures, as allocative procedures that promote preferential treatment or personal self-interest impair procedural fairness. The

accuracy criterion requires allocative decisions to be based on accurate information. The correctability criterion refers to the revision of faulty decisions through a valid channel. The representativeness rule requires the allocation processes to represent the concerns of all affected to ensure greater acceptance of the procedures. The final criterion, ethicality, demands that allocation procedures be based on prevailing moral and ethical standards. Failure to meet the ethicality criterion might lead to a feeling among those impacted that procedural fairness is not guaranteed and, thus, result in a decline in their perception of fairness. These procedural justice criteria have been empirically supported in various contexts. Colquitt (2001), for instance, developed a measurement scale for procedural justice taking into account the application of these six criteria; this scale has been extensively used in studies of organizational behavior (e.g. Colquitt, 2001; Colquitt, Noe, & Jackson, 2002; Walumbwa, Wu, & Orwa, 2008; Wang, Liu, Luo, Ma, & Liu, 2016).

Authorities that use fair decision-making procedures enjoy more positive responses from their followers (see Brockner & Wiesenfeld, 1996; Heuer, Penrod, Hafer, & Cohn, 2002; Huo, Smith, Tyler, & Lind, 1996; Lind, 2001; Lind & Tyler, 1988; Tyler & Lind, 1992). Empirical studies specifically show that procedural justice leads to positive attitudes and cooperative responses from members of social collectives in many areas, including work relations (e.g. Masterson, Lewis, Goldman, & Taylor, 2000), law enforcement (Barkworth & Murphy, 2015), support for authorities (e.g. Tyler & Degoey, 1995), and cooperative alliances (e.g. Luo, 2005). The tax compliance literature also documents a positive relationship between fair decision-making procedures and taxpayers' compliance with tax laws and regulations (e.g. Farrar, 2015; Hartner et al., 2008; Murphy et al., 2016; Wenzel, 2002).

One influential theory that explains why citizens respond to high procedural justice with voluntary tax compliance is the fairness heuristic theory (Lind, 2001). The fairness heuristic theory holds that people, in their relations with authorities, are faced with a fundamental social dilemma. This is because contributing to a collective (such as by voluntarily paying one's taxes) offers them a sense of identity and belonging and opportunities for improved outcomes (e.g. a better-functioning country), but also possible exploitation and identity damage due to abusive or rejecting authorities (Lind, 2001; Van

Dijk, Parks, & Van Lange, 2013). Procedural justice communicates that authorities can be trusted not to abuse their power and this, in turn, stimulates a willingness to contribute to the collective, for instance, by voluntarily complying with the decisions and goals of the authorities representing the collective (Kugler & Bornstein, 2013; Lind, 2001).

1.3 Mediators and Moderators of the Relationship between Procedural Justice and Voluntary Tax Compliance

Despite its theorized effect on cooperation with authorities representing social collectives, procedural justice does not always predict cooperation. More specifically, our understanding of why and when procedural justice stimulates cooperation with authorities is limited (see Van Dijke et al., 2012; Van Dijke et al., 2015). Integrating the effect of procedural justice on cooperative behaviors with other theoretically-sound instrumental and psychological variables can uncover the reason why procedural justice does not always predict cooperation with authorities (Bradford, Hohl, Jackson, & MacQueen, 2015; Kirchler, 2007; Van Dijke et al., 2010). In the context of tax compliance behavior, the need for integrating the effect of procedural justice on voluntary compliance has recently received the attention of scholars (Gangl, Hofmann, & Kirchler, 2015; Gangl, Hofmann, Pollai, & Kirchler, 2012; Kirchler et al., 2008; Van Dijke & Verboon, 2010). Although there have been integration endeavors in the West, to my knowledge, there has not been any study in developing countries that integrates the effects of the various factors that influence tax compliance behavior.

This dissertation attempts to fill two gaps in the extant tax compliance literature: First, most integrative tax compliance studies (see Alm, Kirchler, & Muehlbacher, 2012; Lisi, 2014; Van Dijke & Verboon, 2010; Wenzel, 2002) focus on developed economies such as the US, Australia, and Europe, making it difficult to compare the situation in developing economies with those in developed ones. Second, some important theories and models—such as the fairness heuristic theory (Lind, 2001), relational models of procedural justice (Lind and Tyler, 1988), the slippery slope framework of tax compliance (Kirchler et al., 2008), and the sense-making analysis of justice (Brockner & Wiesenfeld, 1996)—were tested in developed countries and their propositions have not been checked in developing country contexts. To address these two gaps, I have included samples of taxpayers from a

developing country (Ethiopia) and a developed country (the US) and conducted standalone analyses, as well as a comparison of the situations, in both countries. In order to examine the interrelationships between procedural justice, legitimate (and coercive) power, trust, identification with the nation, distributive justice and voluntary tax compliance, this dissertation describes five field surveys, three of which were conducted in a developing country (Ethiopia) and two in a developed country (the US).

In response to the need for such integration, I propose some intervening variables in relation to the effect of procedural justice on voluntary tax compliance in two empirical studies and in relation to the effect of distributive justice on voluntary tax compliance in one study. In separate studies I: (1) identify the power wielded by the tax authority (both legitimate and coercive) as a moderating variable on the effect of procedural justice on voluntary tax compliance (I also include trust in the tax authority as a mediator of the interactive effect of procedural justice with legitimate and coercive power on voluntary tax compliance behavior); (2) identify identification with the nation as a boundary condition for the already-established interactive effect of procedural justice and trust in the tax authority (Van Dijke & Verboon, 2010); and (3) identify the legitimate power of the tax authority as a boundary condition for the interactive effect of the procedural and distributive justice of the tax authority in shaping voluntary tax compliance. The first and third studies integrate the roles of social-psychological factors and economic deterrence factors and the second integrates the roles of social-psychological factors.

1.4 Overview of the Dissertation

The reasons why taxpayers comply with their tax obligations are largely unclear. Considered individually, economic deterrence, social-psychological factors, and normative factors do not sufficiently explain the number of taxpayers that voluntarily comply with tax authorities in different countries, particularly given the limited enforcement resources at the disposal of such authorities (Kirchler et al., 2008; Torgler, 2003; Van Dijke & Verboon, 2010; Verboon & Van Dijke, 2007; Wenzel, 2003). This is because integrative effects of these factors sometimes explain a much higher proportion of tax compliance than their main effects (Braithwaite & Braithwaite, 2001; Wenzel, 2002).

Chapter 2 explores how and when the legitimate and coercive power of the tax authority moderates the effect of procedural justice on voluntary tax compliance and the mediating role of trust on the interactive effect of procedural justice and both (legitimate and coercive) forms of power. This study integrates a pervasive instrumental variable, namely, the power of the tax authority, with the two most established psychological variables, the procedural justice of the tax authority and trust in the authority, in shaping voluntary tax compliance behavior. This research builds on the fairness heuristic theory (Lind, 2001) and the slippery slope framework of tax compliance (Kirchler et al., 2008). Based on these frameworks, I predicted that procedural justice fosters voluntary tax compliance, particularly when the legitimate power of the tax authority is low and when the coercive power of the authority is high, and that these interactive effects are mediated by (cognition-based) trust. I also predicted that the coercive power of the tax authority is positively related to enforced tax compliance. A field study among Ethiopian business owners was devised to test these predictions. As such, this research is among the first to integrate social-psychological and deterrence-related factors to understand tax compliance behavior in a developing country.

Chapter 3 investigates the three-way interaction between procedural justice, trust and identification with the nation, thus using identification as a boundary condition for the already documented interactive effect of trust in the tax authority and procedural justice of the authority on voluntary tax compliance (Van Dijke & Verboon, 2010). Previous studies viewed the moderating role of trust in authority on the procedural justice effect differently. One study by Van Dijke & Verboon (2010) found that low (rather than high) trust moderates the role of procedural justice on tax compliance. The second, by De Cremer & Tyler (2007), found support for high (rather than low) trust as a moderator of the positive effect of procedural justice on levels of cooperation. The present study builds on the interaction pattern documented by Van Dijke & Verboon (2010) and integrates ideas from the fairness heuristic theory (Lind, 2001) and relational models of procedural justice (Lind & Tyler, 1988; Tyler & Lind, 1992) as frameworks of analysis. Accordingly, I predicted that the relationship between procedural justice and voluntary tax compliance, which has been found particularly among citizens with low (rather than high) trust in tax authorities, is restricted to citizens who weakly (rather than strongly) identify with the nation. A field study with

samples of Ethiopian and US taxpayers was devised to test this prediction. As a result, this research integrates the role of important social-psychological factors that shape voluntary tax compliance and obtains support for the arguments in a developing nation (Ethiopia) and a developed nation (US)—both of which have strongly divergent tax climates.

Chapter 4 examines the legitimacy of the tax authority as a boundary condition for the interactive effect of procedural and distributive justice on voluntary tax compliance. The interactive effect of procedural and distributive justice has been widely studied in organizational behavior (see Brockner & Wiesenfeld, 1996 for an overview). Most studies document that high procedural justice *or* high distributive justice suffices to predict positive reactions to authorities' decisions. The present study builds on sense-making analysis of justice (Brockner & Wiesenfeld, 1996; De Cremer, Brockner, Fishman, Van Dijke, Van Olffen, & Mayer, 2010) as a framework for to extend the abovementioned interactive effect of the two components of justice to tax compliance behavior. I predicted that the legitimate power of the tax authority moderates the interactive effect of the procedural and distributive justice of the tax authority on voluntary tax compliance, such that the Procedural Justice \times Distributive Justice interaction will be restricted to authorities who have high (rather than low) legitimate power. Two field studies among Ethiopian (Study 1) and US (Study 2) taxpayers were devised to test this prediction. This research integrates the roles of two often-studied social-psychological antecedents of tax compliance (i.e. distributive and procedural justice) with that of a deterrent factor (i.e. legitimate power) and obtains support for the psychological process underlying the Procedural Justice \times Distributive Justice interaction in two diverging tax environments.

In the final chapter I discuss the findings of the empirical studies. It should be noted that all empirical chapters are written as scientific papers, of which the first and second have been published, and the third is under review. Thus, they can be read independently of each other. However, there is some overlap between the different theoretical introductions. These chapters were the result of collaborative research efforts by myself and my two co-authors. As such, the papers are formulated in the first person plural (i.e. “we”) rather than first person singular (i.e. “I”).

1.5 Declaration of Contributions

Chapters 2–4 of this dissertation are co-authored. In all the three empirical chapters, the manuscripts have been reported in their entirety, because the author was involved in all aspects of the studies. Below, I declare my contribution to each chapter.

Chapter 2 – Power, Justice, and Trust: A Moderated Mediation Analysis of Tax Compliance among Ethiopian Business Owners: I designed the methodology, prepared the survey, collected data from Ethiopian taxpayers, analyzed the data, and wrote the manuscript. My co-author assisted me by re-writing the manuscript wherever improvements were needed.

Chapter 3 – Fear and Caring: Procedural Justice, Trust, and Collective Identification as Antecedents of Voluntary Tax Compliance: As in chapter 2, I designed the methodology, prepared the survey, collected data from Ethiopian taxpayers, analyzed the data, and wrote the manuscript. My co-author collected data from US taxpayers via Amazon Mechanical Turk (AMT) and assisted me by re-writing the manuscript wherever improvements were needed.

Chapter 4 – Does Legitimacy Matter? A Three-way Interaction between Procedural Justice, Distributive Justice, and Legitimate Power on Voluntary Tax Compliance: I designed the methodology, prepared the survey, collected data from Ethiopian taxpayers in person and US taxpayers via AMT, analyzed the data, and wrote the manuscript. My co-authors assisted me by re-writing the manuscript wherever improvements were needed.

CHAPTER TWO

**2 POWER, JUSTICE, AND TRUST: A
MODERATED MEDIATION ANALYSIS OF TAX
COMPLIANCE AMONG ETHIOPIAN
BUSINESS OWNERS¹**

¹ Gobena, L. B. & Van Dijke, M.

2.1 Introduction

Ideally, taxation is the most reliable source for financing government expenditure (Blöchliger & Petzold, 2009; Dziobek et al., 2011). While other sources for financing government expenditure have various constraining conditions attached to them, the government is free to spend the proceeds from taxation in ways it deems necessary (Blöchliger & Petzold, 2009). A worrying fact in this respect is that while the government budget in many countries is overwhelmed by deficit financing, many citizens continually evade taxes (Alm, Kirchler, & Muehlbacher, 2012; Asaminew, 2010; Waud, 1986). Consequently, taxpayers' adherence to applicable taxation laws is something all governments throughout the world aim to secure (Bobek et al., 2007). Therefore, understanding what drives tax compliance is an important topic for scientific study.

Nevertheless, the literature on tax compliance of the past 50 years or so suffers from two important limitations. First, research has revealed that tax compliance is attributable to a range of factors that are economic or social-psychological in nature (Muehlbacher et al., 2011). Yet these various factors are usually studied separately. The economic model or deterrence approach to tax compliance (Allingham & Sandmo, 1972) assumes that the threat of sanctions (i.e. the probability of detection and subsequent penalties) shapes taxpayers' behavior. Many empirical studies support this claim (for a review, see Fischer et al., 1992), although some studies do not (Alm, Kirchler, & Muehlbacher, 2012; Andreoni et al., 1998; Torgler, 2003a, 2003b). Social psychologists, on the other hand, attribute tax compliance to an array of noneconomic factors such as taxpayers' trust in authorities (Feld & Frey, 2002; Scholz & Lubell, 1998; Van Dijke & Verboon, 2010) and in other taxpayers (Alm, Kirchler, & Muehlbacher, 2012; Frey & Torgler, 2007), how taxpayers perceive the legitimacy of authorities (Kogler et al., 2013; Wahl et al., 2010; Wenzel & Jobling, 2006), the manner in which tax authorities treat taxpayers (Feld & Frey, 2002, 2007), and personal and social norms (Edling et al., 2006; Lederman, 2003; Wenzel, 2004). Regretfully, there is at present little integration of deterrence-based and social-psychological perspectives, and hence we lack a clear understanding of factors that drive tax compliance (Kirchler, 2007; Kirchler et al., 2008). One reason for this lack of integration may be that deterrence-based perspectives have usually focused on enforced tax compliance, whereas social psychological perspectives

focused on voluntary compliance (Alm, Kirchler, & Muehlbacher, 2012; Alm, Kirchler, Muehlbacher, Gangl, Hofmann, Kogler, & Pollai, 2012).

A second limitation of the current tax compliance literature is that the vast majority of studies have been conducted in developed nations in Europe, Australia, and the United States (for reviews see Doyle, Frecknall-Hughes, & Summers, 2009; Palil, 2010). Tax compliance has been studied far less often in developing countries (for exceptions see Abdul-Razak & Adafula, 2013; Smulders & Naidoo, 2013), and no research in developing countries has integrated deterrence-based and social-psychological perspectives on tax compliance. Yet the tax environment in many developing countries differs in important ways from those in Europe and the US. In developing countries, taxpayers usually do not see paying taxes as a contribution towards building common public goods, but rather as a burden imposed on them by government (Asaminew, 2010). Moreover, tax authorities often show little trust in taxpayers and seem to believe that deterrent actions can solve all problems related to tax (non-)compliance. Therefore, taxation environments in developing countries often feature so-called “cops and robbers” relationships between taxpayers and the tax authority (Kirchler et al., 2008).

In this article, we will address the two above-mentioned limitations of the tax compliance literature. We will integrate the role of the most relevant deterrence factor – that is, the power of the tax authority – with a core social psychological antecedent of voluntary tax compliance, namely, the procedural justice of the authority. Drawing from the slippery slope framework of tax compliance (Kirchler, 2007; Kirchler et al., 2008), we distinguish between legitimate and coercive power on the part of the tax authority. Based on fairness heuristic theory (Lind, 2001), we argue that procedural justice influences voluntary tax compliance particularly when legitimate power of the tax authority is *low* (vs. high) and when coercive power is high (vs. low). To explicitly ground our argument in relevant theory, we will also argue that the interaction effects of procedural justice with both types of power wielded by the tax authority on voluntary tax compliance are mediated by trust in the tax authority. Figure 2.1 visually represents our proposed model. We test our model among business owners in Ethiopia—a country that is characterized by the type of strained relationship between citizens and the tax authorities sketched above (Asaminew, 2010;

Vadde & Gundarapu, 2012).

2.2 Theoretical Background

2.2.1 Procedural Justice and Tax Compliance

Procedural justice (i.e. the perceived fairness of decision-making processes and procedures) results from a variety of factors (Leventhal, 1980). Typically, procedures are perceived as fairer when they are applied consistently over time and across the individuals or groups affected (Van den Bos et al., 1996); when they are applied accurately and are not motivated by authorities' self-interest (De Cremer, 2004; Saad, 2011); and when they allow those affected to voice their opinions (Lamberton et al., 2014; Tyler et al., 1985; Van den Bos, 1999).

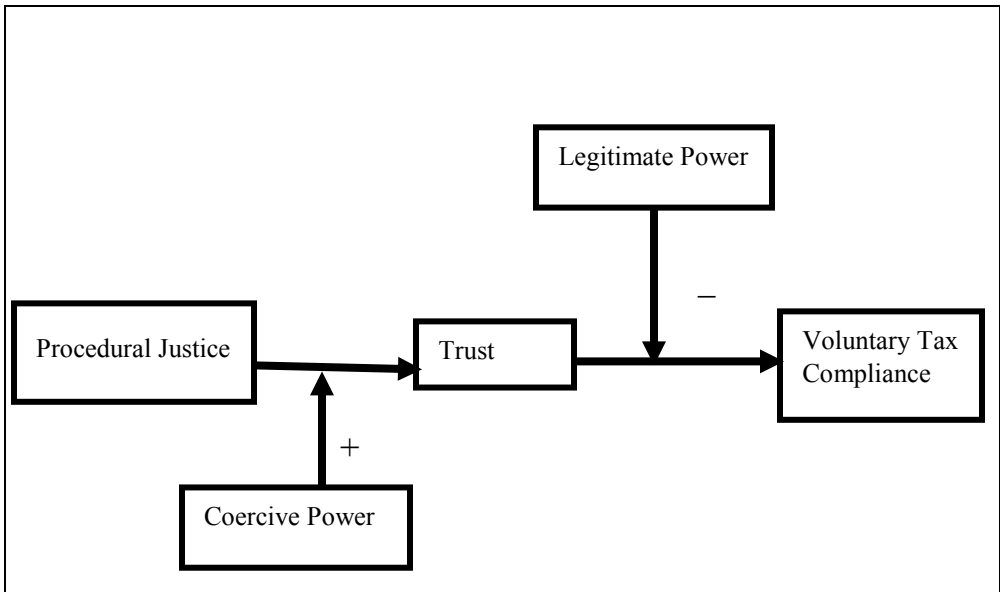


Figure 2.1. A Visual Representation of How the Legitimate and Coercive Power of the Tax Authority Moderate the Effect of Low (vs. High) Procedural Justice on Voluntary Tax Compliance

Empirical studies show that authorities who enact procedures in a fair manner gain more positive responses from members of the collective than authorities who enact

procedures in an unfair manner (Van Dijke et al., 2010; Walker, 1989). One form that responses to procedural justice may take is voluntary compliance of the members of the collective with the authority. In the context of tax administration, tax authorities that are viewed by taxpayers as enacting decision-making procedures in a fair way have been shown to enjoy more voluntary tax compliance than authorities that are perceived to be unfair (Feld & Frey, 2007; Feld & Tyran, 2002; Van Dijke & Verboon, 2010).

One influential theory that explains why citizens respond to high procedural justice with tax compliance is fairness heuristic theory (Lind, 2001). Fairness heuristic theory notes that people, in their relations with authorities, are faced with a fundamental social dilemma. This results because contributing to a collective (such as by voluntarily paying one's taxes) offers a sense of identity and belonging and opportunities for improved outcomes (e.g. a better functioning country), but also possible exploitation and identity damage due to abusive or rejecting authorities (Lind, 2001; Van Dijk et al., 2013). Procedural justice communicates that authorities can be trusted not to abuse their power. Consequently, it stimulates a willingness to contribute to the collective, such as by voluntarily complying with the authorities representing the collective (Kugler & Bornstein, 2013; Lind, 2001).

Fairness heuristic theory proposes an episodic sequence of justice judgments. During the "judgmental phase," individuals observe fairness information (e.g. of procedures) in order to assess whether authorities are high in integrity and can thus be trusted not to exploit them. In the "use phase," they use their fairness judgment as input in their decision to respond with positive behavior like compliance (Bordignon, 1993; Kugler & Bornstein, 2013; Lind, 2001; Saad, 2011; Van den Bos et al., 1998; Van Dijke & Verboon, 2010). In support of fairness heuristic theory, research shows that procedural information (e.g. receiving versus not receiving voice in the decisions of an authority) influences perceptions of procedural justice, particularly when it is unclear whether an authority can be trusted (versus when it is clear that an authority either can or cannot be trusted) (Van den Bos et al., 1998). Studies also show that procedural justice increases trust in the enacting authority (Aryee et al., 2002; Hough et al., 2010). Finally, the effect of procedural justice on outcome variables, including voluntary tax compliance, has been shown to be mediated by trust (Murphy, 2004).

Another framework that is useful to understand the effects of trust and procedural justice on tax compliance is the “slippery slope framework,” which was developed within the tax compliance literature (Kirchler et al., 2008). This framework notes that the tax environment can vary on a continuum between an antagonistic climate (i.e. where taxpayers and the tax authority work against each other) and a synergistic climate (i.e. where taxpayers and the tax authority work together). In antagonistic climates the tax authorities believe that taxpayers evade taxes whenever they can and they should be closely followed up; taxpayers, for their part, believe that they are persecuted by the tax authority and it is right to hide. In synergistic climates taxpayers perceive tax authorities as performing a service for the community, and as being part of the same community the individual taxpayers belong to. The framework considers tax compliance as being influenced by two major dimensions: trust in authorities and power of authorities. Trust (and presumably also its antecedent, procedural justice) begets voluntary tax compliance, while power secures enforced compliance.

2.2.2 Legitimate and Coercive Power, Procedural Justice, and Tax Compliance

Power is often defined as the ability to realize one’s goals through others (Van Dijke & Poppe, 2006). Broadly, there are two possible reasons why people comply with power holders. First, they may want to avoid the punishment that power holders can inflict upon them (Ariel, 2012). Second, there may be a role division between power holders and subordinates that is accepted by both parties. In the second scenario, people perceive the authority’s power as legitimate, and hence that power is grounded in a shared reality (Kastlunger et al., 2013; Muehlbacher et al., 2011). The distinction between legitimate and coercive power is arguably relevant for our understanding of tax compliance and, more specifically, our understanding of how power interacts with the procedural justice of the tax authority to shape taxpayers’ voluntary compliance.

In its original formulation, the slippery slope framework distinguished legitimate from coercive power on the part of the tax authority, but without offering a clear explanation of the effect of each type of power on either voluntary or enforced tax compliance. Studies have found inconsistent results with regard to the effect of legitimate power on tax compliance, some reporting a positive effect on enforced compliance and a negative effect on voluntary

compliance (Kastlunger et al., 2013), and others finding no effect on enforced compliance and a positive effect on voluntary compliance (Gangl et al., 2015; Hofmann et al., 2014). In this paper, we do therefore not predict any effect of legitimate power on voluntary or enforced compliance.

However, as noted, legitimate power may be relevant as a boundary condition to the relationship between procedural justice and voluntary tax compliance. Tyler (1997) notes that legitimate power is the power of an accepted authority to which individuals voluntarily defer. A high level of legitimate power thus implies that the tax authority is perceived as deserving compliance. In terms of fairness heuristic theory (Lind, 2001) this means that when authorities are seen as having legitimate power, they ought to be complied with regardless of the tax authority's level of procedural justice. As a consequence, high levels of legitimate power on the part of the tax authority should make procedural justice less relevant in shaping citizens' decisions on whether or not to voluntarily comply with the tax authority. This argument culminates in the following hypothesis:

Hypothesis 1. Procedural justice is related to voluntary tax compliance, but this effect should be found only when the tax authority wields low (vs. high) legitimate power.

Coercive power, on the other hand, is the power on the part of tax authorities that compels taxpayers to pay taxes not out of the belief that taxes help to finance common public goods, but out of fear of tax audits and consequent punishments (Feld & Frey, 2002, 2007; Kastlunger et al., 2013; Kirchler et al., 2008). In other words, coercive power is power that directs individuals against their will (Kirchler et al., 2008: 213). This form of power is needed to enforce tax laws in a hostile tax climate where there is no mutual understanding between the tax authority and taxpayers. Prior research has consistently found a positive relationship between coercive power and enforced tax compliance, but no relationship between coercive power and voluntary compliance (Gangl et al., 2015; Hofmann et al., 2014; Kastlunger et al., 2013). In line with this prior work, we argue:

Hypothesis 2. Coercive power of the tax authority is associated with an increase in enforced tax compliance.

Important for the present purposes, we argue that coercive power also plays a role in the relationship between procedural justice and voluntary tax compliance. Specifically,

coercive power implies a lack of reciprocal respect and sympathy between taxpayers and tax authorities (Font & Blanco, 2007; Muehlbacher et al., 2011). Therefore, from the perspective of fairness heuristic theory, a high level of coercive power of the tax authority may lead to the fear that the authority may abuse its power. In this situation, citizens are likely to consider the fairness of organizational procedures to assess whether they should comply with the authority or not. This should lead to relatively strong effects of procedural justice on voluntary compliance when authorities have high (vs. low) coercive power. This argument leads to the following hypothesis:

Hypothesis 3. *Procedural justice is related to voluntary tax compliance, but this effect is pronounced particularly when the tax authority has high (vs. low) coercive power.*

2.2.3 Trust as a Mediator of the Effect of Procedural Justice on Voluntary Tax Compliance, Moderated by the Power of Tax Authority

To better ground our predictions in relevant theory, i.e. fairness heuristic theory and the slippery slope framework, we address the role of trust in the tax authority in mediating the proposed unique interaction effects of coercive power and legitimate power with procedural justice on voluntary tax compliance. Trust is defined as the “willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (Mayer, Davis, & Schoorman, 1995, p. 712). Taxpayers who perceive the tax authority as being high in procedural justice are more likely to trust the authority, and this increases compliance (Murphy, 2004).

The slippery slope framework considers trust as one of the major factors that shape voluntary tax compliance (Kirchler et al., 2008). Recent refinements of the framework, however, distinguish between reason-based and implicit trust (Gangl et al., 2015; Gangl et al., 2012). Reason-based trust results from a deliberate decision grounded in goal achievement (i.e. the trustor evaluates whether the trustee pursues a goal that is important to him/her), dependency (i.e. the trustor is dependent, in some way, on the trustee), internal factors (e.g. the trustor evaluates the trustee as competent, willing, and harmless), and external factors (e.g. perceived opportunities and dangers of the trustor in the relationship).

Implicit trust is an automatic, unintentional, and unconscious reaction to stimuli originating from associative and conditioned learning processes in which shared social identities are likely to arise. These two types of trust, respectively, mirror the established distinction in the trust literature between cognition- and affect-based trust (McAllister, 1995; Ng & Chua, 2006).

Whereas cognition-based trust involves a rational and conscious assessment of the trustee's track record and reputation for dependability, reliability, and professionalism (Colquitt et al., 2012), affect-based trust is a feeling towards another party that goes beyond rational assessments and consequently entails emotional investments and genuine care and concern (Johnson & Grayson, 2005; Schaubroeck et al., 2011). Because validated scales are readily available to measure cognition- and affect-based trust, we will focus on these types of trust in this paper. We argue that affect-based trust is unlikely to be relevant in explaining compliance in the context of the relationship between governments and their citizens in a developing country such as Ethiopia with a "cops and robbers" relationship between authorities and taxpayers (Kastlunger et al., 2013; Muehlbacher et al., 2011). Even in developed nations, taxation continues to be perceived as a burden rather than a contribution to societal welfare, as it increases costs and lowers business profits or individual income (Alm, Kirchler, & Muehlbacher, 2012; Alm & McClellan, 2012; Torgler, 2011). However, cognition-based trust may play a clear role in the relationship between governments and taxpayer citizens in situations where the track records of government performance convince the taxpayers to view their government as competent and concerned about their welfare.

As noted, fairness heuristic theory predicts that taxpayers will attend to the fairness of decisions enacted by the tax authority in order to assess whether this authority can be trusted not to take advantage of them (Murphy & Tyler, 2008; Van Dijke & Verboon, 2010). This assessment of the authority's trustworthiness is then used as information in deciding whether or not to comply with the authority. In line with this argument, Gangl et al. (2015) and Hofmann et al. (2014) found that reason-based trust leads to voluntary tax compliance. We articulated this proposed relationship into an effect of procedural justice on voluntary tax compliance mediated by cognition-based trust and moderated by legitimate power, as prior studies focused only on the main effects of these variables. More specifically, in line with the

dynamics proposed by Gangl et al. (2015) and Gangl et al. (2012), we argue that (cognition-based) trust in the tax authority (resulting from procedural justice) should lead to voluntary tax compliance; but this effect of trust on voluntary tax compliance will be found only when the tax authority is perceived to wield low (vs. high) legitimate power. When authorities are seen as being high in legitimate power, they ought to be complied with regardless of the level of cognition-based trust one has in this authority. The above arguments result in the following hypothesis:

Hypothesis 4. *Procedural justice is related to voluntary tax compliance via the mediating mechanism of (cognition-based) trust in the tax authority. Yet cognition-based trust is related to voluntary tax compliance only when the tax authority wields low (vs. high) legitimate power.*

We also predict that trust is relevant as a mediator in the effect of procedural justice of the tax authority on voluntary tax compliance, moderated by coercive power. Drawing on fairness heuristic theory (Lind, 2001) we argue that citizens will observe procedural justice information to assess whether the tax authority can be trusted not to abuse its power, particularly when this authority has high coercive power. This is because high coercive power makes it more likely that the authority actually can damage the interests and identity of citizens (Gangl et al., 2015; Kastlunger et al., 2013). This argument culminates in the following hypothesis:

Hypothesis 5. *Procedural justice is related to voluntary tax compliance via the mediating mechanism of trust in the tax authority. Yet the relationship between procedural justice and trust should be pronounced particularly when the tax authority has high (vs. low) coercive power.*

2.3 Method

2.3.1 Respondents

We gathered data from 231 small and large business owners and/or their accountants in the Ethiopian capital, Addis Ababa.

Of the respondents, 134 reported their gender as male, 83 as female, and 14 did not indicate their gender. With regard to age, 47% were between 20 and 30 years old; 31% between

31 and 40; 14% between 41 and 50; 1% between 51 and 60; 1% above 60 years old; and 6% did not indicate their age. Two percent of the respondents had completed an elementary education only, 7% had completed a high school education, 28% had a (2-year) college diploma, 50% had a bachelor's degree, and 9% had completed a master's degree. With respect to their annual company earnings, 33.5% of the respondents reported to have had an annual earnings of 50,000–100,000 Ethiopian Birr (1 Birr = approximately USD .55); 13.7% had earned 100,000–300,000 Birr; 13.3% had earned 300,000–500,000 Birr; 3.8% had earned 500,000–700,000 Birr; 10.4% had earned 700,000–1,000,000 Birr; 25.3% had earned more than 1,000,000 Birr. Sixteen percent of the respondents reported to have had less than 2 years of experience with the tax authority; 46.4% had 2–6 years; 19.6% had 6–10 years; 12.4% had 10–20 years; 5.6% had greater than 20 years of experience.

2.3.2 Procedure

A printed questionnaire was used to collect data for this study. The items were translated into the Amharic language to enhance ease of understanding by our respondents using a translation-back-translation procedure. A total of 300 questionnaires were distributed to business owners and/or their accountants on a random selection basis (i.e. a questionnaire was given to every fourth taxpayer who came to four different branches of the tax authority to pay business income tax, while awaiting their turns). Of these, 241 questionnaires were returned by the respondents. Some respondents skipped a few questions, and those unanswered questions were considered as missing data. Accordingly, a total of 231 usable questionnaires could be included in the analyses.

2.3.3 Measures

We measured *procedural justice* with an 11-item scale from Murphy (2004). Item examples are “The tax authority gives equal consideration to the views of all Ethiopians” and “The tax authority considers the concerns of average citizens when making decisions” (*1 = completely disagree, 5 = completely agree*). We averaged these items into a procedural justice scale.

We included cognition- as well as affect-based trust as a strong test of our prediction that coercive power and legitimate power moderate the effect of procedural justice on

voluntary tax compliance as mediated by cognition- rather than affect-based trust. We measured *cognition-based trust* with the 6-item scale developed by McAllister (1995). We slightly adapted the items to fit the context of trust in the tax authority. Item examples are “The tax officials approach their job with professionalism and dedication” and “Given these officials’ track record, I see no reason to doubt their competence and preparation for their job” ($1 = \text{completely disagree}$, $5 = \text{completely agree}$). Based on the results of a reliability analysis, we removed the item “If people knew more about these officials and their background, they would be more concerned and monitor their performance more closely.” (Doing this resulted in α improving from .67 to .72.) We averaged the remaining five items into one scale. We measured *affect-based trust* with the 5-item scale from McAllister (1995). We slightly adapted the items to fit the context of trust in the tax authority. Item examples are “The tax officials and I have a sharing relationship; we can both freely share our ideas, feelings, and hopes” and “I can talk freely to these officials about difficulties I am having regarding tax and know that they will want to listen” ($1 = \text{completely disagree}$, $5 = \text{completely agree}$). We averaged the items into one scale.

We measured *voluntary tax compliance* with the 10-item scale² from Kirchler and Wahl (2010). Item examples (preceded by the stem “When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so...”) are “...because to me it’s obvious that this is what you do” and “...to support the state and other citizens” ($1 = \text{completely disagree}$, $5 = \text{completely agree}$). We averaged the items to create a voluntary tax compliance index.

We measured *enforced tax compliance* with the 8-item scale from Kirchler and Wahl (2010). Item examples (preceded by the stem “When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so...”) are “...because a great many tax audits are carried out” and “...because the tax office often carries out audits” ($1 = \text{completely disagree}$, $5 = \text{completely agree}$). We averaged the items to create an enforced tax compliance index.

We measured the tax authority’s *legitimate power* with a 5-item scale from Kastlunger et al. (2013). Item examples are “Tax evasion is detected in a high percentage of the cases”

² Using the abridged 5-item scales for voluntary and enforced tax compliance (Kirchler & Wahl, 2010) revealed results that were essentially the same to the results presented in this chapter.

and “Tax authorities combat tax crimes in an efficient way” ($1 = \textit{completely disagree}$, $5 = \textit{completely agree}$). Based on the results of a reliability analysis, we decided to drop the following item: “Tax authorities control frequently and profoundly.” (Doing this resulted in α improving from .44 to .67). We averaged the items into a legitimate power scale.

We measured the tax authority’s *coercive power* with a 5-item scale taken from Kastlunger et al. (2013). Item examples are “Tax authorities primarily aim to punish” and “Tax authorities’ interventions are too severe” ($1 = \textit{completely disagree}$, $5 = \textit{completely agree}$). We averaged the items into a coercive power scale.

2.4 Results

Table 2-1. The Study Variables' Means, Standard Deviations, Correlations, and Reliabilities

	Mean (SD)	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender													
2. Age Group	1.71 (.85)	-.24**											
3. Highest Level of Education	3.59 (1.47)	-.05	-.02										
4. Aggregate Annual Income	3.20 (2.05)	-.06	.20**	.13									
5. Years of Business Experience	2.46 (1.09)	-.14	.38**	.02	.30**								
6. Procedural Justice	2.83 (.85)	-.04	-.09	-.11	-.01	-.04	.91						
7. Legitimate Power	3.17 (.88)	.08	-.06	-.17*	-.09	-.01	.39**	.67					
8. Coercive Power	3.15 (.94)	-.01	.05	.05	-.03	.05	-.30**	.08	.82				
9. Cognition-based Trust	2.87 (.90)	-.12	-.06	-.10	.03	.03	.64**	.33**	-.18**	.72			
10. Affect-based Trust	2.93 (.95)	-.19	.01	-.15	.06	-.02	.67**	.24**	-.27**	.63**	.82		
11. Enforced Tax Compliance	2.32 (.86)	-.11	.08	.09	.01	.05	-.15	-.06	.33**	-.12	-.11	.76	
12. Voluntary Tax Compliance	3.90 (.78)	.05	-.02	-.10	-.04	.03	.07	.06	-.03	.20**	.17**	-.35**	.78

N = 231

Reliabilities (Cronbach's α coefficients) are on the main diagonal for multi-item measures.*. $p < .05$. **. $p < .01$.

We tested Hypotheses 1, 2, and 3 with hierarchical regression analyses³. In step 1, we entered the main effects of procedural justice, legitimate power, and coercive power. In step 2, we entered the Procedural Justice x Legitimate Power interaction and the Procedural Justice x Coercive Power interaction. (We standardized procedural justice, legitimate power, and coercive power before calculating the interaction terms.) Table 2.2 presents the results of the analysis.

Table 2.1. Regression Results of the Study for the Procedural Justice x Power Interactions

	Voluntary Tax Compliance	Enforced Tax Compliance
Step 1, R^2 , R^2_{adj}	.01, -.01	.12*, .10*
Step 2, R^2 , R^2_{adj} , R^2_{change}	.04*, .02*, .04*	.13, .11, .01
Procedural justice	.08 (1.11)	-.04 (-.49)
Legitimate Power	.04 (.56)	-.07 (-1.01)
Coercive Power	.002 (.02)	.33** (4.65)
Legitimate Power x Procedural Justice	-.15* (-2.18)	.11 (1.72)
Coercive Power x Procedural Justice	.14* (2.03)	.003 (.04)

$N = 231$

Table presents β coefficients at step 2 and t values in parentheses.

*: $p < .05$.

** : $p < .01$.

The Procedural Justice x Legitimate Power interaction significantly predicted

³ We did not include demographic variables as controls in our analyses following Carlson and Wu's (2012) guide that suggests excluding control variables when a clear argument cannot be offered as to why including these controls would improve the estimation of effects of theoretical interest ("when in doubt, leave them out"), such as is the case when they are not significantly correlated with the independent variables. Analyses in which we included the demographic variables as controls revealed results that are essentially the same as those reported in this chapter.

voluntary tax compliance. Figure 2.2 visually depicts this effect. We further probed this interaction effect with simple slopes analyses (Aiken & West, 1991). In support of Hypothesis 1, these analyses showed that the relation between procedural justice and voluntary tax compliance was significant when legitimate power was low (at 1 *SD* below the mean), $\beta = -1.01$, $F(1, 209) = 4.76$, $p = .04$. However, the relationship between procedural justice and voluntary tax compliance was not significant when legitimate power was high (at 1 *SD* above the mean), $\beta = -.01$, $F(1, 209) = 4.76$, $p = .26$. Figure 2.2 shows the shape of this interaction.

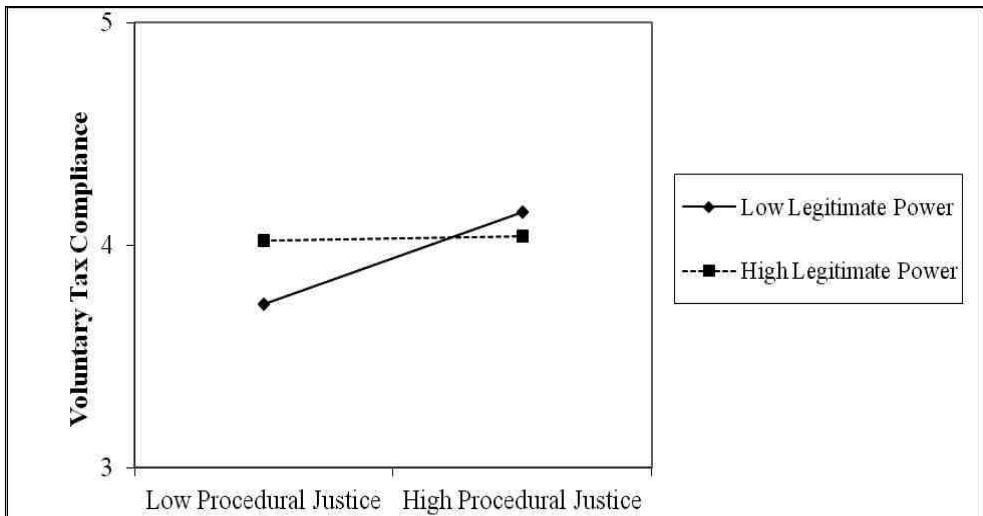


Figure 2.2. The Relation between Procedural Justice and Voluntary Tax Compliance as a Function of the Legitimate Power of the Tax Authority

Furthermore, as predicted in Hypothesis 2, coercive power of the tax authority is associated with enhanced enforced tax compliance. However, legitimate power of the tax authority did not significantly influence enforced tax compliance.

The Procedural Justice x Coercive Power interaction also significantly predicted voluntary tax compliance. Figure 2.3 visually depicts this effect. Subsequent simple slopes analyses showed that the relation between procedural justice and voluntary tax compliance was significant when coercive power was high (at 1 *SD* above the mean), $\beta = .99$, $F(5, 209) = 1.93$, $p = .05$. However, the relationship between procedural justice and voluntary tax

compliance was not significant when coercive power was low (at 1 *SD* below the mean), $\beta = .003$, $F(5, 209) = 1.93$, $p = .27$.

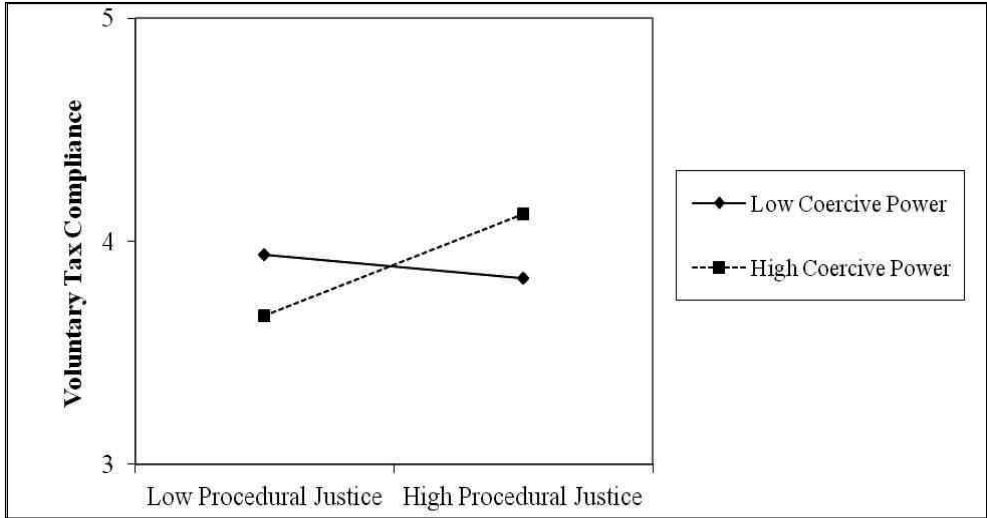


Figure 2.3. The Relation between Procedural Justice and Voluntary Tax Compliance as a Function of the Coercive Power of the Tax Authority

We used the PROCESS macro (Hayes, 2010; model 21) to test our moderated mediation model implied in Hypotheses 4 and 5 (see Figure 2.1). We included procedural justice as independent variable and voluntary tax compliance as a dependent variable. We included both cognition- and affect-based trust as potential mediators of the relationship between procedural justice and voluntary tax compliance. We included coercive power as a moderator of the path from procedural justice to cognition- and affect-based trust and legitimate power as a moderator of the path from cognition- and affect-based trust to the voluntary tax compliance in the model. Table 2.3 provides these results.

Table 2.2. Moderated Mediation Analysis with Legitimate and Coercive Power as Moderators and Voluntary Compliance as a Dependent Variable (N =231)

Mediator Variable Model						
	Outcome Variable: Cognition-based Trust			Outcome Variable: Affect-based Trust		
	<i>B (SE)</i>	<i>t</i>	<i>p</i>	<i>B (SE)</i>	<i>t</i>	<i>p</i>
Procedural Justice	.67 (.05)	12.38	.00	.67 (.05)	12.21	.00
Coercive Power	.03 (.05)	.50	.62	-.07 (.05)	-1.33	.19
Procedural Justice x Coercive Power	.04 (.05)	.86	.39	.01 (.05)	.03	.98
Dependent Variable Model						
Outcome Variable: Voluntary Compliance						
	<i>B (SE)</i>	<i>t</i>	<i>p</i>			
Cognition-based Trust	.17 (.08)	2.19	.03			
Affect-based Trust	.09 (.08)	1.19	.24			
Procedural Justice	-.09 (.08)	-1.12	.26			
Cognition-based Trust x Legitimate Power	-.17 (.08)	-2.19	.03			
Affect-based Trust x Legitimate Power	.06 (.07)	.84	.40			
Conditional Indirect Effect at Specific Levels of the Moderator						
Mediator	Moderator: Legitimate Power		Indirect Effect	LL 95% CI	UL 95% CI	
Cognition-based Trust	-1.01 (-1 SD from the mean)	.21	.04	.42		
	-.01 (0 SD from the mean)	.11	-.01	.22		
	1.0 (+1 SD from the mean)	.01	-.20	.22		

As can be seen in Table 2.3, procedural justice affected both cognition-based trust and affect-based trust. Coercive power did not moderate the effect of procedural justice on cognition- and affect-based trust. However, in support of our prediction, legitimate power moderated the path from cognition-based (but not affect-based) trust to voluntary tax compliance.

A bootstrapped 95% confidence interval (CI) confirmed that the indirect effect of procedural justice on voluntary tax compliance via cognition-based trust was significant when the legitimate power of the tax authorities was low (at 1 *SD* below the mean), but not when it was high (at 1 *SD* above the mean). This supports Hypothesis 4. As can be seen in Table 2.3, we found no evidence that coercive power moderates the path from procedural justice to either of the two types of trust. Hence, Hypothesis 5 was not supported.

2.5 Discussion

In this study we investigated the unique moderating roles of two types of power of the tax authority and the mediating mechanism of trust in the tax authority in the relationship between the procedural justice of the authority and voluntary tax compliance. We also examined the effects of the power of the tax authority (i.e. legitimate and coercive power) on enforced tax compliance. We tested our hypotheses in a unique sample of Ethiopian business owners. We showed that procedural justice was associated with voluntary tax compliance only when legitimate power of the tax authority was low and when coercive power of the authority was high. We also showed that the moderating role of legitimate (but not coercive) power of the tax authority on voluntary tax compliance occurs because procedural justice leads to voluntary compliance via the mediating mechanism of cognition-based (but not affect-based) trust, and the relationship between cognition-based trust and voluntary tax compliance is moderated by legitimate power. Finally, we showed that only coercive power predicts enforced tax compliance. In the following sections, we discuss the implications and limitations of this research.

2.5.1 Theoretical Implications

Our research is, first of all, relevant to the slippery slope framework of tax compliance. This

framework and subsequent empirical studies claim that trust in authorities generally affects voluntary tax compliance, whereas the power of the tax authority affects enforced compliance (Alm, Kirchler, & Muehlbacher, 2012; Kastlunger et al., 2013; Kirchler et al., 2008; Muehlbacher et al., 2011). The framework also posits that power and trust moderate each other's effect on compliance. Trust should matter most when power is low; when power is at its maximum, trust is less relevant because authorities can enforce maximum compliance. Conversely, power should matter most when trust is low; when trust is at its maximum, variations in power are less relevant because citizens contribute their share voluntarily, regardless of the level of power. Independent from this claim, scholars have distinguished legitimate from coercive power. These studies have found that coercive power predicts enforced compliance (Hofmann et al., 2014; Kastlunger et al., 2013). Yet, results for legitimate power have been inconsistent, with some studies reporting a positive effect on enforced compliance and a negative effect on voluntary compliance (Kastlunger et al., 2013), and others finding no effect on enforced compliance and a positive effect on voluntary compliance (Gangl et al., 2015; Hofmann et al., 2014). Our research connects these various claims in a theoretically meaningful way. We show that coercive and legitimate power both have a role to play in shaping voluntary compliance by oppositely moderating the effect of an established antecedent of trust, procedural justice, on this type of compliance.

Our research is also relevant to fairness heuristic theory. This theory has found broad application outside of the tax compliance literature (mostly in organizational psychology). As noted, Lind (2001) argued that in the judgment phase, fairness judgments and the resulting trustworthiness assessments are formed. Subsequently, in the use phase, these assessments are used to decide whether or not to cooperate with the authority. Prior studies that tested fairness heuristic theory focused on the judgment phase (e.g. Van den Bos et al., 1998), including studies that applied fairness heuristic theory to tax compliance (Van Dijke & Verboon, 2010). However, unlike our work, prior work did not focus on the use phase in fairness heuristic theory. Showing that trust (as resulting from procedural justice) interacts with legitimate power to relate to voluntary tax compliance thus clearly extends the scope of application and testing of fairness heuristic theory.

More generally, this research contributes to integrating the deterrence and social

psychological approaches to tax compliance by testing our prediction that the main deterrence tool (i.e. power of tax authority) and a pervasive element of justice (i.e. procedural justice) interact with each other in shaping voluntary tax compliance. Procedural justice has been studied previously as an antecedent of voluntary tax compliance (Murphy, 2004; Murphy & Tyler, 2008). However, a nuanced perspective is presented on integration between the two literatures by the unique moderating roles of legitimate and coercive power on the part of the tax authority in the relationship between procedural justice and voluntary tax compliance.

Finally, unlike most of the tax compliance literature, which has usually addressed developed nations (Doyle, Frecknall-Hughes, & Summers, 2009; Palil, 2010), we conducted this study in a developing country. It is, in this respect, worth noting that the mechanisms proposed in fairness heuristic theory (e.g. the fundamental social dilemma in which procedural justice is used as heuristic information) are framed as culturally invariant, as are the prime mechanisms in the slippery slope framework. We are the first to show that the workings of some of these proposed mechanisms do generalize to a developing nation.

2.5.2 Practical Implications

Developing countries in general and Sub-Saharan African countries in particular are characterized by weak tax administration, extensive tax evasion, corruption, and coercion (Fjeldstad & Therkildsen, 2008; McKerchar & Evans, 2009). Ethiopia is one of the Sub-Saharan African countries that are characterized by coercive authorities (including tax authorities) and citizens with low tax morale (Bahl & Bird, 2008). The country secures the lowest tax to GDP ratio (about 10%) in the region (Daba, 2014). The size of the underground economy, which most often is taken as a proxy for the level of tax morale of citizens (Torgler & Schneider, 2007), has been estimated to be about 36% of the country's GDP in the year 2010 (Asaminew, 2010). One thing that is likely to make tax evasion even worse in Ethiopia is the fact that most business transactions are effected in cash, leaving no evidence for an audit trail. Cash economies are known to make enforcement of tax laws more difficult compared to those where transactions can be traced electronically after they have occurred (Benshalom, 2012; Devos, 2014). Therefore, taxation environments in developing countries

like Ethiopia often feature so-called “cops and robbers” relationships between taxpayers and the tax authority (Kirchler et al., 2008).

In the context of these characteristics of the taxation climate in Ethiopia, we believe that our research has distinct practical implications. First, we find that justice plays a pivotal role in nurturing voluntary tax compliance specifically when the tax authority’s legitimacy is low. In developing nations such as Ethiopia, authorities usually are low in legitimate power (Van de Walle, 2011). Therefore, our findings highlight the need for tax authorities to be procedurally just, especially in those developing countries where legitimacy is known to be low.

Furthermore, prior work identified the limitations of a repressive approach (i.e. based on coercive power). Trying to stimulate tax compliance by means of coercion is costly (Kirchler et al., 2008; Murphy, 2004; Scott & Grasmick, 1981), as the majority of the taxpayers will look for all possible loopholes for evasion. Moreover, taking legal actions against a large number of tax evaders drains government revenue. This is probably especially the case in countries such as Ethiopia. Interestingly, our research shows that a strong focus on coercive power in fact makes procedural justice more effective in stimulating voluntary tax compliance (and injustice more effective in undermining voluntary compliance). It is therefore advisable for tax authorities to invest in creating a procedurally just tax environment; this is particularly true for authorities in developing nations, which tend to focus on coercion in their relationship with their citizens.

Finally, a more general observation is that most of the predictions of both fairness heuristic theory and the slippery slope framework were supported in the context of a developing country. Therefore, policy makers in developing countries may take account of the relationships that are proposed in and the assumptions underlying fairness heuristic theory and the slippery slope framework in their policy design.

2.5.3 Limitations and Suggestions for Future Research

As with all research, the present study is not without limitations: First, the design of the study was cross-sectional. Therefore, the results should be interpreted cautiously. Future research is warranted to clarify the causal links between the variables using experimental or

longitudinal designs. Yet it should be noted that experimental (e.g. Doyle, Gallery, Coyle, & Commissioners, 2009; Van Dijke & Verboon, 2010) and longitudinal (Murphy & Tyler, 2008) studies already revealed the causal effect of procedural justice on voluntary tax compliance.

Another limitation is that we did not measure characteristics of the company that the respondents owned, such as their size (e.g. the number of employees). Owning (and being responsible for) a large company may be a different experience psychologically than owning a small company (in which tax compliance at least is based more on the owner's own intentions and behavior). Future research should include more extensive measures of the taxpayers' background, including company characteristics.

We learned only during the process of getting back the filled-out questionnaires that a small minority of questionnaires were filled out by accountants of the firms. Yet we did not measure this and thus could not analyze the differences in results when the questionnaires were completed by owners and accountants. We therefore suggest for future research to focus on addressing the need to analyze what differences could arise as a result of owners vs. accountants filling out surveys of our type.

It was impossible to randomly sample taxpayers from a list of income taxpayers owing to refusal of the tax authority to share taxpayers' records with us. We therefore resorted to systematic sampling of taxpayers, who were in the queue for paying their income taxes at four different branches of the tax authority over three months (January-March, 2013). The fact that those taxpayers filled out the questionnaire while at the tax authority for tax payment does not imply that they are more honest taxpayers than those who were not in this queue, as a majority of the taxpayers pay their taxes in fear of perceived subsequent measures taken by the tax authority (Abdella & Clifford, 2010). We admit, though, that our sampling strategy may limit the external validity of our results.

Finally, our findings are based only on data from a developing country. Hence, we suggest that future research test hypotheses *both* in developing and developed nations, in order to arrive at a more complete understanding of cross-cultural dynamics underlying tax compliance. We also suggest specific cultural variables that may be included in this research to understand the potential difference between countries, such as power distance and

individualism-collectivism (Hofstede, 2011; Schwartz, 1994).

2.6 Concluding Remarks

The current study is the first to find that coercive and legitimate power may play unique and even opposite moderating roles in the relationship between procedural justice and voluntary tax compliance. In taking this approach, our findings contribute to integrating economic and social-psychological approaches to the study of tax compliance. Furthermore, testing our proposed moderated mediation model in a developing country, rather than—as most prior work has done—among taxpayers in Western countries, contributes to developing literature on tax compliance that is more ecologically valid.

Appendix

Below is a complete list of the measures used in this paper. All responses were on a Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *neither*, 4 = *agree*, 5 = *strongly agree*).

Procedural Justice (Murphy, 2004)

Neutrality (Bias Suppression)

1. The tax authority gives equal consideration to the views of all Ethiopians.
2. The tax authority gets the kind of information it needs to make informed decisions.
3. The tax authority is generally honest in the way it deals with people.

Fairness of Tax Authority

1. The tax authority considers the concerns of average citizens when making decisions.
2. The tax authority cares about the position of taxpayers.
3. The tax authority tries to be fair when making their decisions.

Respect

1. The tax authority respects the individual's rights as a citizen.
2. The tax authority is concerned about protecting the average citizen's rights.

Trustworthy Treatment from the Tax Authority

1. The tax authority treats people as if they can be trusted to do the right thing.

Consultation

1. The tax authority consults widely about how they might change things to make it easier for taxpayers to meet their obligations.
2. The tax authority goes to great lengths to consult with the community over changes to their system.

Affect-based Trust (McAllister, 1995)

1. The tax officials and I have a sharing relationship; we can both freely share our ideas, feelings, and hopes.
2. I can talk freely to these officials about difficulties I am having regarding tax and know that they will want to listen.
3. We would both feel a sense of loss if we could no longer work together.

4. If I shared my problems with these officials, I know they would respond constructively and caringly.
5. I would have to say that we have both made considerable emotional investments in our working relationship.

Cognition-based Trust (McAllister, 1995)

1. The tax officials approach their job with professionalism and dedication.
2. Given these officials' track record, I see no reason to doubt their competence and preparation for their job.
3. I can rely on these persons not to endanger my business by careless work.
4. Most taxpayers, even those who aren't close friends of these officials, trust and respect them as officials.
5. Other taxpayers I know who must interact with these officials consider them to be trustworthy.
6. If people knew more about these officials and their background, they would be more concerned and monitor their performance more closely.

Legitimate Power of Tax Authority (Kastlunger et al., 2013)

1. Tax evasion is detected in a high percentage of the cases.
2. Tax authorities combat tax crimes in an efficient way.
3. Tax evasion is likely to be detected.
4. Tax authorities control frequently and profoundly.
5. Due to their knowledge and competence, tax authorities are able to detect quite every act of tax evasion.

Coercive Power of Tax Authority (Kastlunger et al., 2013)

1. Tax authorities primarily aim to punish.
2. Tax authorities investigate as long as they find something.
3. Tax authorities' interventions are too severe.
4. Tax authorities nurture hostile feelings towards taxpayers.

5. Tax authorities interpret tax laws in order to punish the highest number of taxpayers.

Voluntary Tax Compliance (Kirchler & Wahl, 2010)

When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so...

1. ... because I pay my taxes voluntarily.
2. ... without spending a long time thinking how I could reduce them.
3. ... because to me it's obvious that this is what you do.
4. ... even if tax audits did not exist.
5. ... to support the state and other citizens.
6. ... because I like to contribute to everyone's good.
7. ... because for me it's the natural thing to do.
8. ... because I regard it as my duty as a citizen.
9. ... even though I know that others do not.
10. ... because I am sure I am doing the right thing.

Enforced Tax Compliance (Kirchler & Wahl, 2010)

When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so....

- 1.... because I feel forced to pay my taxes.
- 2.... because a great many tax audits are carried out.
- 3.... although I would really prefer not to pay any taxes.
- 4.... because the tax authority often carries out audits.
- 5.... because I know that I will be audited.
- 6.... because the punishments for tax evasion are very severe.
- 7.... because I do not know exactly how to evade taxes without attracting attention.
- 8.... after putting a lot of thought into how I could legally save taxes.

CHAPTER THREE

**3 FEAR AND CARING: PROCEDURAL JUSTICE,
TRUST, AND COLLECTIVE IDENTIFICATION
AS ANTECEDENTS OF VOLUNTARY TAX
COMPLIANCE⁴**

⁴ Gobena, L. B. & Van Dijke, M.

3.1 Introduction

Tax revenue constitutes the lion's share of funds governments use to finance public expenditure. For tax revenue to yield the maximum possible benefit to the public, it must be collected in an efficient way – spending as little of the tax revenue as possible in collection costs (Bird & Zolt, 2008; Serra, 2003; Slemrod, 1990). In order for tax collection to be efficient, authorities need to secure taxpayers' voluntary compliance with tax laws (Alm, Kirchler, & Muehlbacher, 2012). Securing voluntary tax compliance is much more efficient than relying on enforced compliance (i.e. threatening citizens with punishment upon tax non-compliance), as this latter option is very costly, if it can be achieved at all (Alm, Kirchler, Muehlbacher, Gangl, Hofmann, Kogler, & Pollai, 2012; Kirchler et al., 2008). One of the most important tools that tax authorities have at their disposal to promote voluntary tax compliance is to ensure that citizens perceive decision-making procedures related to tax collection as fair (Farrar, 2015; Hartner et al., 2008; Murphy & Tyler, 2008).

Unfortunately, our understanding of when and why such fairness perceptions (i.e. the procedural justice of tax authorities) promote voluntary tax compliance is severely limited for three reasons. First, prior work addressing this relationship has not always revealed consistent results. Some studies revealed that high procedural justice promotes voluntary tax compliance (e.g. Alm et al., 1993; Farrar, 2015; Murphy, 2004; Murphy & Tyler, 2008); yet other studies did not reveal such an effect (e.g. Porcano, 1988; Worsham, 1996) or found it on some indices of tax compliance but not on others (Wenzel, 2002). Second, our understanding of the processes that may explain the positive effect of procedural justice on voluntary tax compliance is incomplete. Some scholars focused on the role of taxpayers' trust in the tax authority in this process, noting that high procedural justice communicates the information that authorities can be trusted not to abuse their power, which makes citizens more willing to contribute to the collective by voluntarily paying their taxes (Murphy, 2004; Van Dijke & Verboon, 2010). Yet other researchers linked the effect of procedural justice on voluntary (tax) compliance with citizens' identification with the nation (e.g. Hartner-Tiefenthaler et al., 2013; Hartner et al., 2010; Wenzel, 2002). Unfortunately, it is as yet unclear how trust and identification processes may relate to one another to explain the relationship between procedural justice and voluntary tax compliance.

Third, virtually all studies so far on the relationship between procedural justice and tax compliance have been conducted in developed nations in Europe, Australia, and the US (see Gobena & Van Dijke, 2016 for an exception). This reflects the more general trend in the tax compliance literature that almost all research addressing antecedents of tax compliance has been conducted in developed nations (see Doyle, Gallery, Coyle, & Commissioners, 2009; Palil, 2010, for reviews; for exceptions, see Abdul-Razak & Adafula, 2013; Smulders & Naidoo, 2013). This is problematic because the tax environment in developing countries differs strongly from that in developed countries. For instance, in contrast to the situation in developed countries, in developing countries taxpayers and tax authorities often show less mutual understanding. Tax authorities in these countries tend to be less sympathetic of taxpayers' difficulties; taxpayers on their part feel persecuted by those authorities and are more likely to evade taxes when they see an opportunity to do so (Fjeldstad, 2001; Gangl et al., 2015).

In the present paper, we address these three limitations to our understanding of the relationship between the procedural justice of the tax authority and citizens' voluntary tax compliance. Specifically, to understand when procedural justice may predict voluntary tax compliance and when this will not be the case, we take a moderator approach and thus focus on identifying critical boundary conditions to this effect (Vancouver & Carlson, 2015). As moderator variables, we simultaneously consider trust in the tax authority and identification with the nation. Integrating arguments from fairness heuristic theory (Lind, 2001) and relational models of procedural justice (Blader & Tyler, 2015), we argue that the relationship between procedural justice and voluntary tax compliance is most pronounced among citizens with low (vs. high) trust in the tax authorities who at the same time weakly (vs. strongly) identify with their nation.

We test this proposed three-way interaction effect of procedural justice, trust in the tax authority, and identification with the nation on voluntary tax compliance among taxpayers in a developing country (Ethiopia) and in a developed country (the US). The tax environment in Ethiopia constitutes a typical "cops and robbers" type of climate, whereby the tax authority holds the belief that all taxpayers strive to evade taxes whenever situations allow them and taxpayers reciprocate by hiding their genuine income and taxable

transactions from tax officials (Bekana et al., 2014; Debere, 2014; Gobena & Van Dijke, 2016; Yesegat & Fjeldstad, 2016). The tax environment in the US is a more advanced setting in which the interaction between the tax authority and the taxpayers is undeniably smoother than that in developing countries (Alm, 2012; Alm et al., 1993; Alm et al., 1999). Though we do not claim that Ethiopia and the US are representatives, respectively, of developing and developed economies, they are examples of such economies, and finding support for our prediction in both of these distinct tax environments arguably boosts the ecological validity of our conclusions. Evidence of the countries' distinct taxation climates is found in the size of the shadow economy as a percentage of GDP, which is cited as a proxy for citizens' tax morale (Torgler & Schneider, 2007). This percentage averages 45% for developing countries and was estimated at 35.1% for Ethiopia in 2007; it averages 19% for member countries of the Organization for Economic Co-operation and Development (OECD) (Schneider & Enste, 2013) and was estimated at 8.4% for the US in 2015 (Schneider, 2015).

3.2 Related Literature and Hypothesis

3.2.1 Procedural Justice and Voluntary Tax Compliance

Procedural justice refers to the perceived fairness of the decision-making procedures that authorities follow to arrive at resource allocation decisions (Leventhal, 1980). It is shaped by a multitude of factors, such as the consistent application of procedures over time and across all affected, the use of accurate information for decision-making, decisions being free from decision-makers' self-interest, and allowing those affected to voice their opinion in the authority's decisions (Colquitt, 2001; Leventhal, 1980; Thibaut & Walker, 1975; Walker, 1989). Procedural justice leads to positive attitudes and cooperative responses among members of social collectives in a variety of settings, such as law enforcement (Barkworth & Murphy, 2015), work relations (e.g. Masterson et al., 2000), and educational settings (e.g. Ereş et al., 2014). As noted, procedural justice has also been shown to predict voluntary compliance with tax laws (Farrar, 2015; Hartner et al., 2008; Murphy & Tyler, 2008), although this relationship has not always been found (e.g. Porcano, 1988; Wenzel, 2002; Worsham, 1996).

An influential theory that explains why procedural justice promotes voluntary tax

compliance is fairness heuristic theory (Lind, 2001). This theory notes that investing in a collective (such as by voluntarily paying one's taxes) confers a sense of identity and belonging, along with opportunities for improved outcomes (e.g. a better functioning country) but also possible exploitation when authorities abuse or reject citizens. Individuals respond positively (e.g. with elevated tax compliance) to high procedural justice because it informs them that authorities can be trusted not to abuse their power (Lind, 2001; van Dijk et al., 2013). Trust is defined as the "willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995, p. 712).

Prior studies have tested predictions derived from fairness heuristic theory in the area of tax compliance. Gobena and Van Dijke (2016) predicted and found that the relationship between procedural justice and tax compliance should be pronounced particularly when the tax authority is perceived as having high (rather than low) coercive power or low (rather than high) legitimate power because the possibility of exploitation should be particularly salient in these situations. Moreover, they also found that the relationship between procedural justice and tax compliance, as moderated by legitimate power, was mediated by trust in the authority, thus suggesting that procedural justice is considered informative of the tax authority's trustworthiness (see also, e.g. Murphy, 2004; Yang et al., 2009, for other research showing that the relationship between procedural justice and cooperative responses is mediated by trust in the authority). Other work provided evidence for fairness heuristic theory by zooming in on the role of trust in the authority as a *moderator* of the effect of procedural justice on tax compliance. Van Dijke and Verboon (2010) showed that citizens with low (vs. high) trust in the tax authority – and who thus particularly fear exploitation by the authority – respond more strongly with tax compliance to procedural justice information (see also De Cremer & Tyler, 2007; van den Bos et al., 1998, for other work that considered trust as a moderator of procedural justice effects).

The effects of procedural justice on compliance with authorities have also been explained in terms of identification with the nation. Identification with the nation is defined as the "belief in a shared culture, history, traditions, symbols, kinship, language, religion,

territory, founding moments, and destiny” (Guibernau, 2004, p. 134). Identification with the nation stimulates commitment to the welfare of the nation through internalization of the collective benefits (Wenzel & Jobling, 2006), and this enhances voluntary cooperation (van Dijk, De Cremer, & Handgraaf, 2004; Huddy & Khatib, 2007; Schatz & Lavine, 2007), including payment of one’s taxes as they come due (Wenzel, 2007). The group-value model (Lind & Tyler, 1988) and the relational model of cooperation (Tyler & Blader, 2003) assert that people consider fair decision-making by authorities representing the collective as identity information; being treated fairly tells people that they are respected members, whereas unfair treatment tells them that they are less valued, less respected members (Tyler, 1989; Tyler & Blader, 2000).

In support of these models, some studies show that the identity information that is communicated by decision-making procedures is most impactful among group members caring most about the group. For instance, people who are strongly committed to an organization react more strongly to perceived fairness than less committed organization members (Brockner et al., 1992). Moreover, the support for procedurally fair, rather than unfair, authorities is more pronounced among people who strongly identify with the relevant collective (Tyler et al., 1996; Tyler & DeGoey, 1995), and the effect of procedural justice on self-perceived respect is restricted to people who identify strongly with the relevant collective (Van Dijke & De Cremer, 2008). Within the tax compliance literature, procedural justice has also been shown to be particularly effective in promoting tax compliance among citizens who strongly identify with their country (Wenzel, 2002).

3.2.2 Integrating the Roles of Trust and Identification

As noted, the extant literature documents trust as both a mediator (e.g. Murphy, 2004; Yang et al., 2009) and a moderator (e.g. De Cremer & Tyler, 2007; Van Dijke & Verboon, 2010) of the relationship between procedural justice and cooperative responses such as voluntary compliance with authorities. The present research extends work that has viewed trust as a moderator of procedural justice effects on cooperative responses. From the perspective of fairness heuristic theory, trust is relevant to consider as a moderator of procedural justice effects, as low trust in an authority implies fear of exploitation. This makes individuals focus

more strongly on procedural justice (as an indicator of authority integrity), consequentially making procedural justice effects stronger (Van Dijke & Verboon, 2010). In the present paper we argue that this Procedural Justice \times Trust interaction on voluntary tax compliance is further moderated by citizens' level of identification with the nation. Specifically, we argue that the fear of being taken advantage of (as implied by low trust) may be less relevant to individuals who identify strongly with the collective. We expect this because such individuals have internalized collective goals and want to support the collective, irrespective of the costs to themselves and their personal gains (De Cremer, 2005; van Lange, 1999). Among citizens who strongly identify with the nation, low trust should be less likely to strengthen the effect of procedural justice on voluntary compliance, as high identifiers care less about their own interests (De Cremer, 2005; Frey & Meier, 2004). (Figure 3.1 visually presents the conceptual model of our study.) These arguments culminate in our hypothesis:

Identification with the nation moderates the interaction effect of procedural justice of the tax authorities and trust in these authorities on voluntary tax compliance, such that procedural justice is positively related with voluntary tax compliance primarily when trust is low (vs. high) and, simultaneously, identification is low (vs. high).

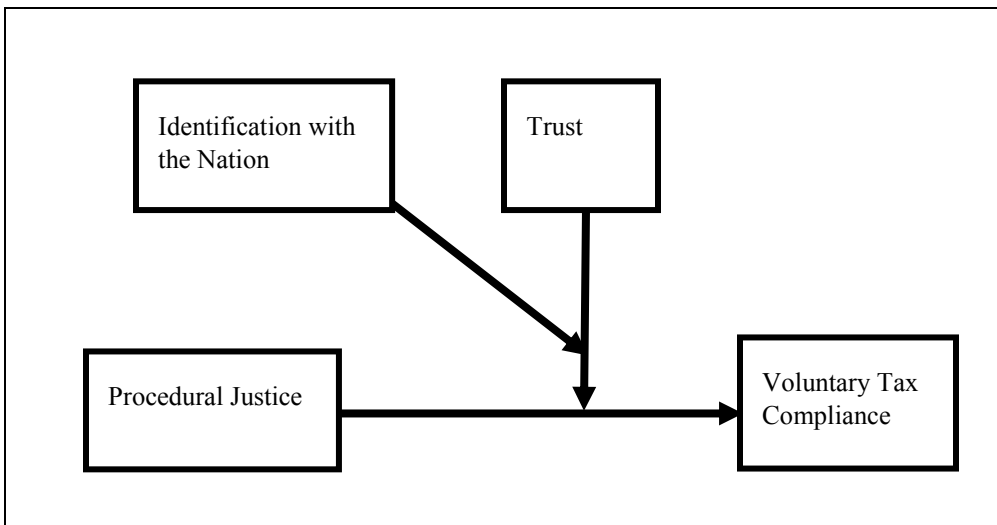


Figure 3.1. Conceptual Model of How Identification with the Nation Moderates the Interaction Effect of Procedural Justice and Trust on Voluntary Tax Compliance

3.3 Study Overview

As noted, we tested our hypothesis in a sample of Ethiopian working professionals and a sample of US working professionals. We conducted a cross-sectional survey in which we measured our predictor variables – procedural justice, trust, and identification with the nation – as well as the criterion variable – voluntary tax compliance – at a single point in time. To establish the discriminant validity of our findings, we also included enforced tax compliance as a criterion variable (in addition to voluntary tax compliance). We did this because procedural justice and trust both overlap somewhat with the perceived competence of the tax authority in collecting taxes (e.g. by increasing perceived detection probability; see Gangl et al., 2015; Gangl et al., 2012; Kirchler et al., 2008; Weiner et al., 1997). Perceptions of competence can be associated with higher levels of enforced tax compliance (Devos, 2014; Hartl et al., 2015; Hofmann et al., 2014). However, our argument about the role of identification with the nation in moderating the Procedural Justice \times Trust interaction assumes that identification makes individuals voluntarily contribute to the collective, regardless of the cost for themselves. Therefore, finding that the hypothesized three-way interaction between procedural justice, trust in the tax authority, and identification predicts voluntary, rather than enforced, tax compliance will boost our confidence in the conclusions that we draw.

3.4 Method

3.4.1 Respondents and Procedure

We determined the appropriate size of our samples with power analysis using the G*Power (Faul et al., 2009). Power analysis is used to calculate the minimum sample size required so that one is reasonably likely to detect an effect of a given size (Abraham & Russell, 2008). Interaction effects are usually small in size in survey designs (in terms of Cohen's (1988) rules of thumb, $f^2 = .03-.04$; Aguinis et al., 2005; Shieh, 2010). With a desired power of .80 (i.e. an 80% probability of detecting a true effect with effect size of .035), $\beta = .20$, and $\alpha = .05$ (i.e. a 5% chance of incorrectly concluding an effect exists in the population when it does not), power analysis yielded a minimum sample size of 179. Our sample sizes ($N = 217$ for

the Ethiopian sample and $N = 200$ for the US) are thus appropriate to draw reliable conclusions.

In the Ethiopian Civil Service University, Tilburg University, and Erasmus University, with which we are affiliated, a researcher is not required to obtain ethics approval for data collection using surveys for which responding is highly unlikely to affect the psychological or physical well-being of respondents. Furthermore, filling in our survey was based on voluntary participation, indicated in a letter accompanying the questionnaire (Ethiopian sample) or communicated in the recruitment message (US sample), and hence we did not seek ethics approval.

The first sample consisted of 217 working professionals (i.e. taxpayers who were engaged primarily in business consulting activities with accounting, economics, management, and engineering backgrounds; some engaged in tertiary-level teaching; and only a few with a lower level of academics working as clerks and secretaries) in the Ethiopian capital, Addis Ababa. We administered a questionnaire prepared in English. Of the respondents, 83.6% were male, 14.2% were female, and 2.2% did not indicate their gender. Respondents were between 20 and 60 years of age ($M_{\text{age}} = 36.3$, $SD_{\text{age}} = 8.04$). With regard to the highest level of education, 0.5% had completed elementary education only, 4.1% had a 2-year college diploma, 20.1% had a bachelor's degree, 60.3% had completed a master's degree, 11.9% had completed a PhD, and 3.1% did not indicate their highest level of education. With respect to their annual earnings, 7.1% of the respondents reported that they had annual earnings of 20,000–40,000 Ethiopian Birr (1 Birr = approximately USD .05), 11.8% had earned 40,000–60,000 Birr, 16.6% had earned 60,000–80,000 Birr, 29.9% had earned 80,000–100,000 Birr, 10.9% had earned 100,000–120,000 Birr, and 23.7% had earned more than 120,000 Birr. Among the respondents, 3.3% reported that they had less than 2 years of experience with the tax authority, 12.6% had 2–6 years, 25.1% had 6–10 years, 36.7% had 10–20 years, and 22.3% had more than 20 years of experience. In terms of ethnicity, 32% of the respondents described themselves as Oromo, 21.9% as Amhara, 14.2% as Tigray, 5.9% as Gurage, 10.5% as “other,” and 15.5% did not report their ethnic background. The ethnic composition of the Ethiopian respondents within the total number of respondents in this sample roughly mirrors the ethnic groups' composition in the Ethiopian population; that is,

34.4% Oromos, 27% Amharas, 6.1% Tgrians, 2.5% Gurage, and 30% other. The “other” 30% comprises the remaining 76 ethnic groups. We coded income range of respondents as 1 = 20,000-40,000 Birr, 2 = 40,000-60,000 Birr, 3 = 60,000-80,000 Birr, 4 = 80,000-100,00 Birr, 5 = 100,000-120,000 Birr, and 6 = more than 120,000 Birr; years of experience with the tax authority as 1 = less than 2 years, 2 = 2-6 years, 3 = 6-10 years, 4 = 10-20 years, and 5 = more than 20 years; highest level of education attained as 1 = completed elementary school, 2 = completed high school, 3 = completed college diploma, 4 = completed first degree, 5 = completed master’s degree, and 6 = completed a PhD; ethnicity as 1 = Amhara, 2 = Tigray, 3 = Oromo, 4 = Gurage, and 5 = Other.

For the Ethiopian sample, we used a printed questionnaire to collect the data. We collected the data over a period of three months, February-April, 2015. We distributed a total of 300 questionnaires to working professionals. Accompanying the questionnaire was a cover letter and a pre-paid reply envelope for enclosure of the filled-out questionnaire. The cover letter explained the intent of the study and guaranteed strict confidentiality of responses. Two hundred and twenty-three questionnaires were returned (a response rate of 74%). Of these, six respondents skipped a significant number of questions and were therefore removed from the dataset. Accordingly, a total of 217 usable questionnaires were included in the analysis.

The US sample consisted of 200 US income taxpayers. Respondents were invited online to participate in the study. All respondents responded to all questions, and hence there were no dropouts or missing values. We introduced the study as being about “how and why people decide to voluntarily comply with taxation or evade it.” Of the 200 respondents, 56.5% were male and 43.5% were female. Respondents were between 19 and 75 years of age ($M_{age} = 37.90$, $SD_{age} = 12.34$). In terms of their highest level of education, 0.5% had completed elementary school only, 18% had a high school diploma, 19% had completed vocational education, 50% had a bachelor’s degree, 10.5% had completed a master’s degree, and 2% had completed a PhD. With respect to their annual earnings, 20.3% of the respondents reported having annual earnings less than 20,000 USD, 41.8% had earned 20,000–40,000 USD, 15.9% had earned 40,000–60,000 USD, 13% had earned 60,000–80,000 USD, 5.6% had earned 80,000–100,000 USD, and 3.4% had earned more than 100,000 USD. Among the respondents, 4% reported that they had less than 2 years of experience with the tax authority,

17.5% had 2–6 years, 13.5% had 6–10 years, 33% had 10–20 years, and 32% had more than 20 years of experience. Regarding ethnic background, 79.5% of respondents identified themselves as White/Caucasian, 3% as Hispanic American, 10% as African American, 5.5% as Asian American, 0.5% as Native American, and 1.5% as “other” than those listed. Like in the Ethiopian sample, we coded income range of respondents as 1 = less than 20,000 USD, 2 = 20,000-40,000 USD, 3 = 40,000-60,000 USD, 4 = 60,000-80,000 USD, 5 = 80,000-100,000 USD, 6 = more than 100,000 USD; years of experience with the tax authority as 1 = less than 2 years, 2 = 2-6 years, 3 = 6-10 years, 4 = 10-20 years, and 5 = more than 20 years; highest level of education attained as 1 = completed elementary school, 2 = completed high school diploma, 3 = completed vocational education, 4 = completed bachelor’s degree, 5 = completed master’s, and 6 = completed a PhD; ethnicity as 1 = White/Caucasian, 2 = Hispanic American, 3 = African American, 4 = Asian American, and 5 = Native American, and 6 = Other.

For the US sample, we recruited participants via Amazon’s Mechanical Turk (AMT) over a period of one week in May (13-21), 2015. AMT is an online community designed to bring researchers in contact with respondents who are willing to participate in research. AMT has become a popular platform for collecting data across the social sciences (Berinsky et al., 2012; Rand et al., 2012). For instance, studies have used AMT to address issues as diverse as generosity (Cryder et al., 2013), cross-cultural variations in work outcomes (Uhlmann et al., 2013), and procedural justice enactment (van Houwelingen et al., 2014). Studies evaluating the validity of AMT have shown that the data obtained are reasonably reliable (Behrend, Sharek, & Meade, 2011; Buhrmester, Kwang, & Gosling, 2011; Paolacci & Chandler, 2014), while representativeness of such samples requires close scrutiny by recruiters (see Goodman & Paolacci, 2017). We return to this in the general discussion.

3.4.2 Measures

We used scales developed for developed countries to collect data in a developed (i.e. the US) and a developing county (i.e. Ethiopia). We did this because the scales are not specific to the context of developed countries; they have been utilized across cultures before; and most importantly, this makes comparison of results for developing and developed countries sensible.

We measured *procedural justice* with a 7-item scale⁵ developed and validated by Colquitt (2001). We used this scale rather than scales that have been used before in the tax compliance literature because these scales include items that do not refer to aspects of decision-making procedures, and they overlap with other constructs. For instance, Murphy's (2004) measure of procedural justice of the tax authority contains items that measure trust. An example item that overlaps with trust is "The tax office treats people as if they can be trusted to do the right thing." The Colquitt (2001) measure, on the other hand, is solely based on Leventhal's (1980) and Thibaut & Walker's (1975) concept of procedural justice and measures the most common procedural justice criteria: voice, bias suppression, accuracy, consistency, and norm adherence. Therefore, we argue that this measure is an improvement over existing procedural justice measures in the tax compliance literature. We slightly adapted the Colquitt (2001) items to fit the context of procedural justice of the tax authority. Item examples (preceded by the stem "The following items refer to the procedures used to arrive at tax-related decisions.") are "I have been able to express my views and feelings during those procedures" and "Those procedures have been free of bias" (*1 = strongly disagree, 7 = strongly agree*). We averaged these items into a procedural justice scale. The

⁵ Items 2 and 6 from the Colquitt (2001) measure refer to "outcomes" of the authority's decision. We assumed that respondents in both samples would understand what such outcomes can be (e.g. individual taxpayers winning a tax refund claim, adjustments made to tax rates, or selection of taxpayers for tax audit). The Ethiopian sample consisted of business owners who likely had experience in interacting with the tax authority. The US respondents would have also had experience in interacting with the tax authority, as the United States federal and state income tax systems are self-assessment systems requiring that taxpayers must declare, file, and pay taxes without assessment by the taxing authority; the relevant tax authority later decides on which taxpayers to audit (see Roach, 2010). Analyses showed that in both samples the Procedural Justice \times Trust and Trust \times Identification was similar in shape and significance regardless of whether the two items containing a reference to "decision outcomes" were included or not.

complete adapted scale is found in Appendix A.

Following Gobena and Van Dijke (2016; see also Gangl et al., 2015; Gangl et al., 2012), we measured *trust* with the 6-item cognition-based trust scale developed by McAllister (1995). We used this scale rather than other scales that have been used before in the tax compliance literature because these scales include items that overlap with items of procedural justice of the tax authority. Murphy's (2004) measure of institutional trust in the tax authority, for instance, contains items that measure the fairness of the tax authority's decision-making procedures. We slightly adapted the McAllister (1995) items to fit the context of cognition-based trust in the tax authority. Item examples are "The tax officials approach their job with professionalism and dedication" and "Given these officials' track record, I see no reason to doubt their competence and preparation for their job" (*1 = strongly disagree, 7 = strongly agree*). We averaged the items into one scale. The complete scale is found in Appendix A of Gobena and Van Dijke (2016).

We measured *voluntary tax compliance* with a 10-item scale from Gobena and Van Dijke (2016) adapted from Kirchler and Wahl (2010). Item examples (preceded by the stem "When I pay my taxes as required by the [Ethiopian/US] tax laws and regulations, I do so...") are "...because I pay my taxes voluntarily" and "...without spending a long time thinking how I could reduce them" (*1 = strongly disagree, 7 = strongly agree*). We averaged the items to create a voluntary compliance index. The complete scale is found in Appendix A of Gobena and Van Dijke (2016).

We measured *enforced tax compliance* with an 8-item scale from Gobena and Van Dijke (2016) adapted from Kirchler and Wahl (2010). Item examples (preceded by the stem "When I pay my taxes as required by the [Ethiopian/US] tax laws and regulations, I do so...") are "...because I feel forced to pay my taxes" and "...because a great many tax audits are carried out" (*1 = strongly disagree, 7 = strongly agree*). We averaged the items to create an enforced tax compliance index. The complete scale is found in Appendix A of Gobena and Van Dijke (2016).

We measured *identification with the nation* with a 10-item scale from Tyler and Blader (2001). We slightly adapted the items to fit the current context. Item examples are "My nation is important to the way I think of myself as a person" and "When someone praises the

accomplishments of my nation, it feels like a personal compliment to me” (*1 = strongly disagree, 7 = strongly agree*). We averaged the items to create an identification index. The complete scale is found in Appendix A.

3.5 Results

3.5.1 Descriptive Statistics and Correlations

Table 3.1 and Table 3.2 present means, standard deviations, Cronbach alpha coefficients, and correlations between the variables in the Ethiopian and US samples, respectively.

Table 3.1. Descriptive Statistics, Correlations, and Reliabilities of an Ethiopian Sample

	Mean (SD)	1	2	3	4	5	6	7	8	9	10
1. Voluntary Tax Compliance	4.51 (1.58)	.92									
2. Enforced Tax Compliance	3.49 (1.41)	-.42**	.85								
3. Procedural Justice	2.95 (1.29)	.17*	-.01	.78							
4. Trust	3.17 (1.23)	.22**	.03	.44**	.84						
5. Identification	4.86 (1.28)	.28**	-.02	.12	.12	.88					
6. Gender		-.08	-.01	.03	.09	.06					
7. Age	36.3 (8.04)	.14	-.08	-.02	.07	.03	-.21**				
8. Education	4.81 (.74)	-.01	-.14*	.06	-.11	.08	-.02	.24**			
9. Income	2.16 (.72)	.18**	-.12	.01	.01	-.05	-.15*	.29**	.21**		
10. Business Years	9.72 (1.06)	.17*	-.18**	.03	.02	.03	-.27**	.71**	.27**	.32**	

N = 217

Reliabilities (Cronbach's α coefficients) are on the main diagonal for multi-item scales.* : $p < .05$, ** : $p < .01$, *** : $p < .001$

Table 3.2. Descriptive Statistics, Correlations, and Reliabilities of a US Sample

	Mean (SD)	1	2	3	4	5	6	7	8	9	10
1. Voluntary Tax Compliance	4.95 (1.19)	.90									
2. Enforced Tax Compliance	4.34 (1.28)	-.24**	.87								
3. Procedural Justice	3.71 (1.32)	.36**	-.14	.92							
4. Trust	3.74 (1.32)	.43**	-.20**	.69**	.89						
5. Identification	4.49 (1.31)	.39**	.08	.29**	.25**	.93					
6. Gender		.29	-.07	-.07	-.05	.01					
7. Age	37.90 (12.34)	.16	-.09	-.09	-.12	.01	.10				
8. Education	3.58 (.98)	.01	-.07	-.04	.03	.01	.04	.12			
9. Income	1.47 (.66)	.02	.09	.01	.06	.06	-.21**	.13	.41**		
10. Business Years	17.37 (11.91)	.15	-.07	-.14*	-.16*	-.01	.06	.90**	.06	.16*	

N = 200

Reliabilities (Cronbach's α coefficients) are on the main diagonal for multi-item scales.

* $p < .05$, ** $p < .01$, *** $p < .001$

As can be seen in Table 3.1 and 3.2, in both samples, in line with prior work, all predictor variables, namely procedural justice (e.g. Van Dijke & Verboon, 2010; Wenzel, 2002), trust in the tax authority (e.g. Gobena & Van Dijke, 2016; Scholz & Lubell, 1998; Van Dijke & Verboon, 2010), and identification with the nation (e.g. Wenzel, 2002), had significant positive associations with voluntary tax compliance. Also in line with prior work, none of these variables were significantly associated with enforced tax compliance (Gobena & Van Dijke, 2016), apart from trust in the US sample. This latter correlation is, in fact, in line with the slippery slope framework of tax compliance (Kirchler et al., 2008), which assumes that trust in and power of the tax authority are critical dimensions in understanding tax compliance. Specifically, while power of the tax authority elicits enforced compliance, trust in the authority leads to voluntary compliance (see Kirchler, 2007). The framework argues that if taxpayers' perception of the potential of tax officials to detect and punish tax evasions is interpreted as coercive (vs. legitimate) power, the level of enforced tax compliance increases, but the same interpretation damages trust in the tax authority. Consequently, trust in the tax authority and enforced tax compliance are argued to be negatively correlated.

Tables 3.1 and 3.2 also show that trust, procedural justice, and identification are intercorrelated (as they were in all prior field studies that included trust or identification as moderator of procedural justice effects; e.g. see De Cremer & Tyler, 2007; Van Dijke & Verboon, 2010 for procedural justice and trust correlation; Wenzel, 2002; De Cremer, 2005 for procedural justice and identification correlation). However, these correlations are clearly lower than the threshold (i.e. .8 or .9) where multicollinearity issues can arise in the analyses that we used to test our hypothesis, that is regression analyses (see Mela, 2002; Tu et al., 2005).

Tables 3.1 and 3.2 also show that the US sample scored higher than the Ethiopian sample on voluntary tax compliance (4.95 vs. 4.51; $t(199) = 3.52, p < .01$), procedural justice (3.71 vs. 2.95; $t(198) = -6.18, p < .01$), and trust (3.74 vs. 3.17; $t(198) = -4.53, p < .01$). The higher scores on these variables are in line with the difference in the tax environments between these countries, with the Ethiopian tax environment, as noted earlier, sometimes being referred to as a “cops and robbers” type (see Bekana et al., 2014; Gobena & Van Dijke,

2016). Identification was higher for the Ethiopian sample than the US sample (4.86 vs. 4.49; $t(198) = 2.50, p = .01$). This may reflect nationalism that has served to transcend political, social, economic, and cultural challenges in Ethiopia, which is argued to have resulted from Ethiopian nationalists' continual attempts to harness national cohesion against threats from both within and outside of Ethiopia (see Gebrewold, 2009).

3.5.2 Regression Analyses

Because our research question pertains to establishing boundary conditions to known effects, we used moderated regression (Dawson & Richter, 2006; Hayes & Matthes, 2009; Rosnow & Rosenthal, 1995). We used this approach (i.e. the three-way analysis) rather than other options (e.g. splitting the sample at the mean of various variables and ANOVA) that are clearly suboptimal as they lead to loss of a lot of information (see Irwin & McClelland, 2003; Royston et al., 2006). Unlike the vast majority of studies in the tax compliance literature that used ordinary least squares (OLS) regression (e.g. Murphy, 2004; Murphy & Tyler, 2008; Van Dijke & Verboon, 2010), we used linear regression with robust standard errors. Robust standard errors help overcome the limitations of OLS⁶ regression that it is very sensitive to the presence of outliers and that it can easily inflate the standard errors of the slope coefficients when the criterion variable contains measurement error (see Adedia et al., 2016; Alma, 2011).

⁶ We conducted OLS regression analyses in addition to the robust regression results reported in this chapter. We did this to see if our results differ when OLS regression is used. We opted to not report OLS regression results in the main text because OLS regression is sensitive to the presence of outliers. Besides, when the criterion variable contains errors (such as those occurring when it is measured with self-report scales), the standard errors of the slope coefficients become inflated (although the estimation of the slopes is unbiased) when OLS regression is used. The OLS regression revealed results that were almost identical to the results presented in the main text. There were two differences. First, short of supporting our hypothesis, in the Ethiopian sample, the simple slope for the effect of procedural justice on voluntary compliance when identification was low (1 *SD* below the mean) and trust was also low (1 *SD* below the mean) was not significant ($\beta = .20, t = .91, p = .36$). Second, contrary to the result in linear regression with robust standard errors and in support of our hypothesis, in the Ethiopian sample, the simple slope for the effect of procedural justice on compliance when identification was low (1 *SD* below the mean) and trust was high (1 *SD* above the mean) was not significant ($\beta = -.28, t = -1.60, p = .11$).

Demographic variables did not significantly correlate with the predictor variables except business years with procedural justice and trust in the US sample. Therefore, we decided to not include them as controls in the regression analyses (Carlson & Wu, 2012).

Table 3.3. Regression Results of Ethiopian and US samples with Voluntary Tax Compliance as a Criterion Variable

	Voluntary Tax Compliance			US Sample		
	Ethiopian Sample			US Sample		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Procedural Justice	0.12 (0.12)	0.13 (0.12)	0.11 (0.12)	0.07 (0.10)	0.11 (0.10)	0.07 (0.10)
Trust	0.25 (0.14)	0.23 (0.12)	0.17 (0.13)	0.37** (0.09)	0.32** (0.10)	0.25* (0.11)
Identification	0.39** (0.12)	0.44** (0.11)	0.36** (0.11)	0.36** (0.09)	0.34** (0.07)	0.24** (0.09)
Procedural Justice × Trust		-0.07 (0.10)	-0.10 (0.09)		-0.03 (0.09)	-0.10 (0.09)
Procedural Justice × Identification		0.23* (0.09)	0.15 (0.10)		-0.24** (0.09)	-0.15 (0.09)
Trust × Identification		-0.05 (0.10)	0.05 (0.09)		0.17* (0.08)	0.18* (0.08)
Procedural Justice × Trust × Identification			0.14* (0.06)			0.13** (0.08)
<i>N</i>	214	214	214	200	200	200
<i>R</i> ²	0.12	0.14	0.16	0.27	0.29	0.31
<i>ΔR</i> ²		0.02	0.02*		.02	0.02**

Table reports β coefficients and robust standard errors in parentheses* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3.3 presents the results of the regression analyses. As Table 3.3 shows, the R^2 of the regression result is higher in the US than in the Ethiopian sample for step 1 of the regression. This likely occurs because trust has stronger main effect in the US sample in step 1 (and subsequent steps, of course) than in the Ethiopian sample. This difference could be caused by the difference in the tax environments – specifically, the Ethiopian respondents evaluating their relationship with the tax authority as antagonistic, which leads to lowered value of trust in the tax authority (see Bekana et al., 2014; Gobena & Van Dijke, 2016). However, for steps 2 and 3, R^2 changes are similar for both samples. Importantly, the interaction of theoretical interest that we focused on in this paper is comparable across the two samples.

In step 1, in both the Ethiopian and the US sample, identification predicted voluntary tax compliance significantly, while procedural justice did not. In this step, trust predicted voluntary tax compliance only in the US sample. In step 2, the same main effect patterns as in step 1 prevailed in both samples. Furthermore, in both samples, while the Procedural Justice \times Identification interaction predicted voluntary tax compliance, the Procedural Justice \times Trust interaction did not. The Trust \times Identification interaction predicted voluntary tax compliance in the US sample, but not in the Ethiopian sample in step 2. We note that the sign of the Procedural Justice \times Identification interaction was positive in the Ethiopian sample and negative in the US sample. Thus, in the Ethiopian sample, procedural justice is more strongly related to voluntary tax compliance among high (rather than low) identifiers; in the US sample, procedural justice is more strongly related to tax compliance among low (rather than high) identifiers.

This difference may result from the difference in the tax climates from which the respondents were drawn. As noted, the Ethiopian tax climate is a typical “cops and robbers” type whereby the tax authority and the taxpayers work against each other (see Abdella & Clifford, 2010; Gobena & van Dijke, 2016). In such an environment, justice may make sense only among those who strongly identify with the nation; weakly identifying citizens may consider all authorities’ decisions and procedures in a negative light (Lipponen, Wisse, & Perälä, 2011; Wenzel, 2002). On the other hand, in the more cooperative environment of the “client and service” tax climate in the US, high identifiers may not be as concerned about

the fairness of authorities as low identifiers because high identifiers perceive authorities' actions in a positive light regardless of their actions; low identifiers attend to procedural justice information to avoid abuse of power by the authorities (see Huo, Smith, Tyler, & Lind, 1996).

In step 3, the main effects of procedural justice, trust, and identification were similar to those in step 2. Furthermore, the Procedural Justice \times Trust and Procedural Justice \times Identification interactions did not predict voluntary tax compliance in both samples, whereas the Trust \times Identification interaction continued to predict voluntary compliance only in the US sample. However, as predicted, the Procedural Justice \times Trust \times Identification interaction predicted voluntary tax compliance in both samples. Figure 1 visually presents the shape of this interaction for the Ethiopian sample; Figure 2 presents the shape of this interaction for the US sample.

Because the variables were each measured on a 7-point scale, we treated the data as continuous and applied parametric tests without using dummy variables. In creating the categories in Figures 3.2 and 3.3, we used the Excel facility provided by Dawson (2014) that automatically yields coefficients used in plotting the interaction graphs. For this plotting, the criterion was always 1 *SD* below/above the mean.

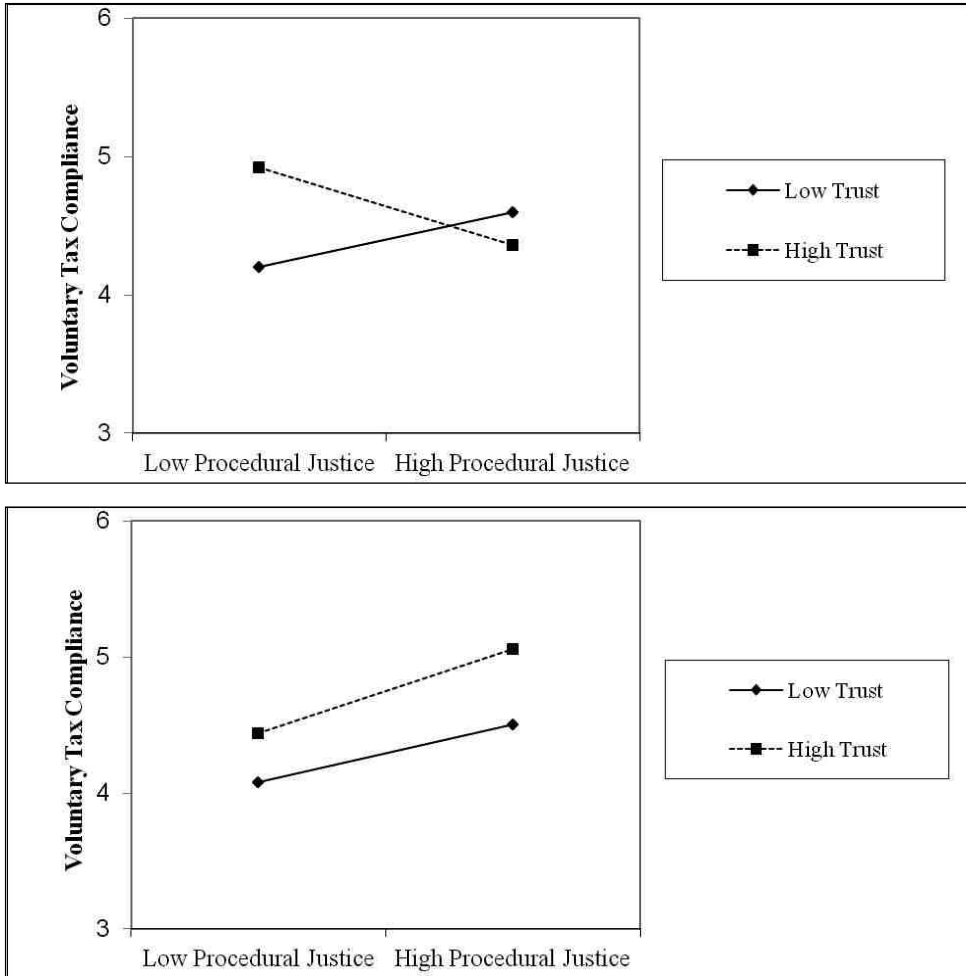


Figure 3.2. The Significant Procedural Justice \times Trust Interaction on Tax Compliance When Identification with the Nation is Low (Upper Panel) and the Non-Significant Procedural Justice \times Trust Interaction on Tax Compliance When Identification with the Nation is High (Lower Panel) (Ethiopian Sample)

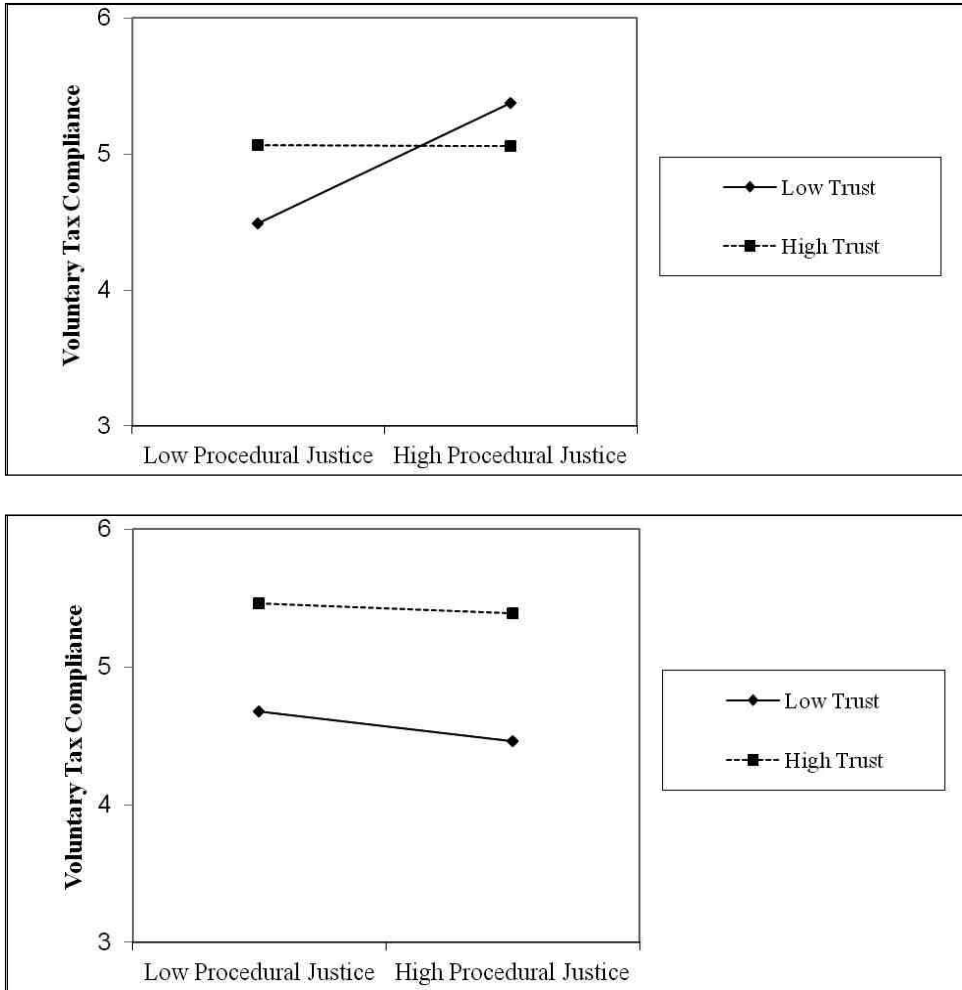


Figure 3.3. The Significant Procedural Justice \times Trust Interaction on Tax Compliance When Identification with the Nation is Low (Upper Panel) and the Non-Significant Procedural Justice \times Trust Interaction on Tax Compliance When Identification with the Nation is High (Lower Panel) (US Sample)

We proceeded to test our hypothesis with simple slopes analyses (Aiken & West, 1991). Simple slopes analysis is a follow-up analysis that shows whether a specific effect (i.e. the Procedural Justice \times Trust interaction, and the main effect of procedural justice) is significantly different from zero as a function of the moderator value, something that

moderated regression itself cannot tell (see Aiken & West, 1991; Dawson & Richter, 2006; Robinson et al., 2013). In support of our hypothesis, this analysis showed that the Procedural Justice \times Trust interaction significantly predicted voluntary tax compliance when identification was low (1 *SD* below the mean) in the Ethiopian sample ($\beta = -.20$, $t = -2.00$, $p = .04$) and the US sample ($\beta = -.22$, $t = -2.00$, $p = .04$). However, when identification was high (1 *SD* above the mean), the Procedural Justice \times Trust interaction did not significantly predict voluntary compliance in the Ethiopian sample ($\beta = .04$, $t = .46$, $p = .65$) or the US sample ($\beta = .03$, $t = .45$, $p = .65$). Thus, among citizens who weakly identify with the nation, the relationship between procedural justice and voluntary tax compliance varied significantly as a function of their level of trust in the authority. However, for citizens who strongly identify with the nation, the relationship between procedural justice and voluntary tax compliance did not significantly vary as a function of their level of trust in the tax authority.

We proceeded with further simple slopes tests to decompose the simple Procedural Justice \times Trust interaction among low and high identifiers. In line with our argument, for the Ethiopian sample, the results of this analysis showed that when identification was low (1 *SD* below the mean) and trust was low (1 *SD* below the mean), the relationship between procedural justice and compliance was positive and significant ($\beta = .31$, $t = 2.01$, $p = .04$). When identification was low (1 *SD* below the mean) and trust was high (1 *SD* above the mean), the relationship between procedural justice and compliance was significant and negative ($\beta = -.28$, $t = -2.50$, $p = .01$). A potential explanation for this unpredicted relationship could be the “cops and robbers” climate that the Ethiopian respondents have become used to. These respondents may value a match between the actions of the tax authority represented by low procedural justice and their experience with the authority. This perceived match (while trust is high, suggesting respondents believe they will not be taken advantage of) may have resulted in positive responses to low (compared to high) procedural justice. However, this is speculation and we leave open the possibility that this specific simple relationship between low (vs. high) procedural justice and high tax compliance is a statistical fluke, as it did not also replicate in the US sample (see below).

In the US sample, when identification was low and trust was low (1 *SD* below the

mean), the relationship between procedural justice and compliance was positive and significant ($\beta = .45, t = 2.72, p = .01$). When identification was low (1 *SD* below the mean) and trust was high (1 *SD* above the mean), the relationship between procedural justice and compliance was not significant ($\beta = -.01, t = -.02, p = .98$).

Although at high levels of identification the simple slopes of the relationship between procedural justice and voluntary compliance did not significantly differ as a function of the level of trust, we nevertheless conducted simple slopes analyses to test if, among highly identifying citizens, the simple slopes may be significantly different from 0. In the Ethiopian sample, these analyses showed that, when identification was high, procedural justice did not predict voluntary tax compliance at both low ($\beta = .21, t = .93, p = .36$) and high ($\beta = .26, t = 1.61, p = .11$) levels of trust. Similarly, in the US sample, when identification was high, procedural justice did not predict voluntary compliance regardless of whether trust was low ($\beta = -.11, t = -.74, p = .46$) or high ($\beta = -.04, t = -.23, p = .82$).

Table 3.4 (see Appendix B) shows that trust was significantly and negatively associated with enforced tax compliance in the US but not the Ethiopian sample. Furthermore, the three-way interaction that we predicted for voluntary tax compliance was not significant with enforced tax compliance as a criterion variable in both samples. This boosts our confidence in our specific argument that addresses fear of exploitation and identification and subsequent goal internalization as precursors of voluntary tax compliance. We also note that the sample of origin (Ethiopia vs. US) did not moderate our results⁷.

3.6 General Discussion

We showed that procedural justice of the tax authority is positively related to voluntary tax compliance particularly among citizens with low (vs. high) trust in this authority. However, this Procedural Justice \times Trust interaction was limited to citizens who weakly (vs. strongly) identify with their country. More specifically, high (vs. low) procedural justice predicts

⁷ To test whether any of the results differed significantly between the two samples, we combined the two datasets and tested if sample of origin (i.e. Ethiopian vs. US sample) moderated any of the main effects, simple interactions, or the three-way interaction of procedural justice, trust, and identification. We found no evidence that the sample moderates any of these effects.

increased voluntary compliance only when identification is low and trust is simultaneously low. We obtained this effect in two samples, one of income taxpayers in a developing country (Ethiopia) and one of income taxpayers in a developed country (the US). In line with our expectations, we found no interactive effect of procedural justice, trust, and identification on enforced tax compliance. In the following sections we discuss the implications and limitations of these findings.

3.6.1 Theoretical Implications

Procedural justice is one of the most often studied and most established antecedents of voluntary compliance with the tax authority (e.g. Doyle, Gallery, Coyle, & Commissioners, 2009; Hartner et al., 2008). However, as noted, prior studies have not always revealed consistent results. Some studies showed that high procedural justice is positively related to voluntary tax compliance (e.g. Alm et al., 1993; Farrar, 2015; Hogan et al., 2012; Murphy, 2004; Murphy & Tyler, 2008). But other studies did not consistently show such a relationship (e.g. Porcano, 1988; Wenzel, 2002; Worsham, 1996). By identifying boundary conditions to the effect of procedural justice on voluntary compliance, we increase our understanding of when procedural justice can be expected to promote voluntary compliance and when this cannot be expected. Our research thus also suggests why prior research sometimes succeeded and sometimes failed in revealing a significant relationship between procedural justice and voluntary tax compliance. Of course, the inconsistency in prior findings might also be (partly) attributable to the way procedural justice of the tax authority was operationalized, as we highlighted in the measures part of our study.

Second, prior work has identified trust in the tax authority and identification with the nation as factors that explain why procedural justice leads to voluntary tax compliance. However, until now, no work has considered how trust and identification processes may relate to each other. By including both variables as moderators of the relationship between procedural justice and voluntary compliance, the present research reveals how these two processes interrelate. Individuals respond positively (i.e. with increased tax compliance) to high procedural justice when they have low (vs. high) trust in the tax authority. In other words, low trust makes individuals focus on procedural justice information to assess whether

they want to contribute to the collective. However, strong identification with the nation overrides these concerns, as identification implies that one internalizes collective goals, thus making one care less about one's own personal outcomes. Our research thus suggests that the processes described in fairness heuristic theory (Lind, 2001) are fundamentally self-focused in nature; they disappear under strong identification with the nation.

By being the first to test a tax compliance hypothesis in a developing as well as a developed nation, our research also contributes to the tax compliance literature more broadly. One important limitation of the extant literature is that little research has explored tax compliance in developing countries, in contrast to the extensive studies conducted in Western nations (see Doyle, Frecknall-Hughes, & Summers, 2009; Saad, 2011; Torgler & Schneider, 2007). Because of this scarcity of tax compliance studies in developing countries (for exceptions, see Abdul-Razak & Adafula, 2013; Alabede et al., 2011; Gobena & Van Dijke, 2016; Smulders & Naidoo, 2013), there is virtually no comparison of results across cultures. Yet, as noted, the tax environment in many developing countries differs in important ways from that in Europe and the US, as in developing countries (more than in developed nations), taxpayers usually do not view paying taxes as a contribution to the buildup and maintenance of common public goods (Asaminew, 2010; Fjeldstad & Semboja, 2001; Gangl et al., 2014). Of course, taxpayers' determination to evade taxes in developing countries seems to reciprocate the actions of tax authorities, who often show little trust in taxpayers as reasonable citizens and seem to believe that coercion can solve all problems related to tax (non-) compliance, contrary to the relations in developed countries. This is also illustrated in our research, in which we found that the level of trust of taxpayers in tax authorities, the level of perceived procedural justice, and the level of voluntary compliance are higher in the US than in Ethiopia. Our tests of the hypothesis in two samples that are very divergent in terms of their tax environments and tax morale clearly contribute to the confidence that we can have in these findings and, more generally, contribute to our confidence in the social psychological approach to stimulate voluntary tax compliance across the world.

3.6.2 Practical Implications

We contribute to the practice of tax administration in two ways. First, the most important policy alternatives to deal with self-focused taxpayers who weakly identify with the nation are for the tax authority to either work in a way that it would be perceived by those taxpayers as being high in procedural justice or to be sufficiently coercive as to deter tax evasion. This last alternative is being followed by most authorities in developing countries, who have not worked hard to build mutual trust with their citizens (Bekana et al., 2014; Fjeldstad, 2001). However, it is a costly approach (Alm, Kirchler, & Muehlbacher, 2012; Alm, Kirchler, Muehlbacher, Gangl, Hofmann, Kogler, & Pollai, 2012; Gangl et al., 2015; Murphy & Tyler, 2008) that likely drains the meager tax money that authorities in these countries collect. Our findings highlight that procedural justice is particularly important in order to foster voluntary tax compliance for authorities who are not trusted by citizens who weakly identify with their nation.

Second, we contribute to the manner in which tax authorities may have to administer taxation in order to initiate and sustain a high level of voluntary compliance with taxation through an interaction between procedural justice, trust, and identification with the nation. We found that identification with the nation, in its own right, significantly predicts voluntary tax compliance in both samples. This implies that individuals internalize the values and norms of the group with which they identify and voluntarily cooperate with the authorities that represent the group. Therefore, it is important to work on policies and procedures that beget citizens' identification with the nation (De Cremer & Tyler, 2005; van den Bos et al., 1996).

3.6.3 Limitations

Our study is not without limitations. A first limitation results from the cross-sectional nature of our study, which does not allow drawing causal conclusions. Future studies should clarify the causal links between the study variables using experimental or longitudinal designs. Yet it should be noted that prior experimental studies (e.g. Doyle, Gallery, Coyle, & Commissioners, 2009; Van Dijke & Verboon, 2010), including field experiments (Wenzel, 2006), provided causal support for the effect of procedural justice on voluntary tax compliance. Future research should address the causal roles of trust in authorities and identification with the nation in experimental settings, for instance, using bogus pipeline

procedures (e.g. Doosje et al., 1995; Van Dijke & De Cremer, 2010).

A second limitation is that our nonrandom sampling technique in both studies likely hampered the representativeness of our respondents for the populations from which they were drawn. The use of AMT is particularly criticized on the ground that the sample recruited does not represent the US population (see Goodman and Paolacci, 2017). Nevertheless, since our intent is testing theory rather than generalizing the finding to a specific population, the use of nonrandom samples does not limit our conclusions. This is because while testing theory, all measures are indirect indicators of theoretical constructs, and no methodological procedures taken alone can produce external validity (see Lucas, 2003). We also argue that our studies are high in ecological validity (see Leary, 2012) relative to prior field studies, which were conducted almost solely in Western countries. That is because the dissimilarity of the two samples provides strength to the conclusions we draw, as replication of results over distinct nonrandom samples implies dependability of the results.

3.7 Concluding Remarks

Procedural justice is one of the most useful and practical tools that have been identified by social-psychological research to stimulate voluntary tax compliance. The present research helps us to understand why this effect is not always found, what the processes are that underlie this effect, and how general the effect is across different taxation climates. Investigating interactions between established antecedents of voluntary tax compliance can thus result in theoretical progress as well as practically useful results that are applicable in both developing and developed nations.

Appendix A

Below is a list of two of the measures used in this paper. All responses were on a Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *moderately disagree*, 4 = *neither agree nor disagree*, 5 = *moderately agree*, 6 = *agree*, 7 = *strongly agree*).

Procedural Justice (Colquitt, 2001)

The following items refer to the procedures used to arrive at tax-related decisions.

1. I have been able to express my views and feelings during those procedures.
2. I have had influence over the (outcomes) arrived at by those procedures.
3. Those procedures have been applied consistently.
4. Those procedures have been free of bias.
5. Those procedures have been based on accurate information.
6. I have been able to appeal the (outcomes) arrived at by those procedures.
7. Those procedures have upheld ethical and moral standards.

Identification with the Nation (Tyler & Blader, 2001)

1. My nation is important to the way I think of myself as a person.
2. When someone praises the accomplishments of my nation, it feels like a personal compliment to me.
3. When I talk about my nation I usually say “we” rather than “they.”
4. I feel a sense that I personally belong to Ethiopia/the US.
5. I feel that the problems of my nation are my own personal problems.
6. When someone from outside criticizes my nation, it feels like a personal insult.
7. I feel like a valued member of my nation.
8. When something goes wrong in my nation, I feel a personal responsibility to fix it.
9. My nation says a lot about who I am as a person.
10. I do not feel like an important part of my nation (reverse coded).

Appendix B

Table 3.4. Regression Results of Ethiopian and US samples with Enforced Tax Compliance as a Criterion Variable

	Enforced Tax Compliance			US Sample		
	Ethiopian Sample			US Sample		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Procedural Justice	-0.04 (0.13)	-0.09 (0.12)	-0.09 (0.12)	-0.04 (0.12)	0.01 (0.12)	0.01 (0.12)
Trust	0.07 (0.14)	0.10 (0.12)	0.10 (0.13)	-0.29* (0.13)	-0.30* (0.12)	-0.29* (0.12)
Identification	-0.03 (0.11)	-0.03 (0.10)	-0.02 (0.10)	0.19 (0.12)	0.16 (0.12)	0.18 (0.13)
Procedural Justice × Trust		0.13 (0.10)	0.13 (0.10)		0.06 (0.09)	0.07 (0.11)
Procedural Justice × Identification		-0.03 (0.10)	-0.03 (0.11)		-0.17 (0.14)	-0.18 (0.14)
Trust × Identification		0.14 (0.10)	0.14 (0.09)		0.07 (0.14)	0.06 (0.14)
Procedural Justice × Trust × Identification			-0.01 (0.06)			-0.02 (0.10)
<i>N</i>	214	214	214	200	200	200
<i>R</i> ²	0.002	0.04	0.04	0.06	0.07	0.07
ΔR^2		0.04	0.00		0.01	0.00

Table reports β coefficients and robust standard errors in parentheses* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

CHAPTER FOUR

**4 DOES LEGITIMACY MATTER? A THREE-
WAY INTERACTION BETWEEN
PROCEDURAL JUSTICE, DISTRIBUTIVE
JUSTICE, AND LEGITIMATE POWER ON
VOLUNTARY TAX COMPLIANCE⁸**

⁸ Gobena, L. B., Verboon, P., & Van Dijke, M.

4.1 Introduction

Complying with tax laws and regulations involves an ethical dilemma where the personal gains that result from non-compliance come at a cost for society and its individual, impersonal members (Chung and Trivedi, 2003; Dowling, 2014; Gangl et al., 2015; Kaplan et al., 1997; Maciejovsky, et al., 2012; McGee, 2006; Molero and Pujol, 2012). This dilemma facing taxpayers has captured the attention of scholars from various disciplines for at least half a century (see Kirchler, 2007 for an overview). As part of scientific investigation into tax compliance, social psychologists have identified various factors that predict voluntary compliance with taxation laws and regulations (i.e. voluntary tax compliance). Two of the most important antecedents of voluntary tax compliance that research has identified are the distributive justice of the tax authority (e.g. Cowell, 1992; Saad, 2011; Wenzel, 2002, 2003) and the procedural justice of this authority (Farrar, 2015; Hartner et al., 2008).

Surprisingly, tax compliance researchers have so far not considered if (and when) these two justice dimensions may *interact* to predict tax compliance. This is despite extensive investigation of the Procedural Justice \times Distributive Justice interaction effect on responses to authorities and social systems (e.g. on organizational commitment; Brockner et al., 1994; and trust in the authority; Brockner et al., 1995) in social and applied psychology (e.g. see Brockner and Wiesenfeld, 1996 for an overview). Specifically, the interactive effect of procedural and distributive justice on responses to authorities and the social collectives that they represent has often been shown to take a form in which high procedural justice *or* high distributive justice is sufficient to lead to positive responses to the authority. Put differently, less positive responses result only when procedural justice *and* distributive justice are both low.

The lack of understanding of how (and when) procedural and distributive justice interact in shaping tax compliance is unfortunate for theoretical and practical reasons. Theoretically, without understanding how and when these justice variables interact, it is difficult to fully understand why these justice dimensions shape tax compliance in the first place. And practically, distributive justice is often perceived as low by taxpayers, for various reasons (Alm et al., 1993; Bobek et al., 2007; Saad, 2011; Trivedi et al., 2003). Taxpayers may, for instance, view their exchange with the government as unfair (i.e. they feel that they

are not enjoying the benefits of tax-funded public goods and services as much as they think they deserve); or they may view that they are paying too much in taxes, but benefiting less in terms of the returns on their tax money compared with other taxpayers (see Alm et al., 1993; Alon and Hageman, 2013; Dowling, 2014; Fjeldstad et al., 2012; Wenzel, 2003). High (vs. low) procedural justice may thus counteract or buffer the undermining effect of low (vs. high) distributive justice on voluntary tax compliance.

In the present article, we test the process that may underlie the interaction between procedural and distributive justice in predicting voluntary tax compliance by considering a boundary condition to this effect that is highly relevant from an ethical as well as a tax compliance perspective. Specifically, drawing on a sense-making analysis of justice (Brockner and Wiesenfeld, 1996; De Cremer et al., 2010), we will argue that the Procedural Justice \times Distributive Justice interaction predicts voluntary compliance in particular with tax authorities who are perceived to be high (rather than low) in legitimate power. Legitimate power of the tax authority is a relevant boundary condition to consider because changes along the continuum of legitimacy of the (tax) authority affects whether individual taxpayers care about justice enacted by the authority (Fields, Pang, and Chiu, 2000; Kirchler et al., 2008; Tyler, 1997; Tyler and Fagan, 2008). This holds presumably because citizens want to make sense of the manner in which the (tax) authority exercises its power before they judge the authority as just to consequently decide to cooperate or not (Hechter, 2009; Tyler & Fagan, 2008; Tyler et al., 2010). Accordingly, we test a three-way interaction between distributive justice of the tax authority, procedural justice of the authority, and legitimate power of the tax authority on voluntary tax compliance. We test this proposed interaction using two samples of taxpayers—an Ethiopian sample and a US sample.

This research makes two contributions to the literature. First, the interaction between procedural and distributive justice has been shortlisted as a highly relevant conceptual and empirical contribution to the justice literature (Colquitt et al., 2005). However, notwithstanding its obvious relevance resulting from the fact that so many taxpayers perceive distributive justice of taxation to be low, it has not been considered in a tax compliance context. We introduce this interaction to the tax compliance literature and also identify a theoretically and practically relevant boundary condition—legitimate power

wielded by the tax authority—to its effectiveness in predicting voluntary tax compliance. This boundary condition is a novel addition to the literature, even beyond the tax compliance context. Second, almost all tax compliance studies have been conducted in developed nations (i.e. Europe, Australia, and the United States), with developing countries being neglected. Yet, tax environments in developing countries differ from those in Europe and the US. Taxation environments in developing countries are often characterized as so-called “cops and robbers” relationships between taxpayers and the tax authority, in which taxpayers view taxation as a burden, rather than a contribution to a common good, and authorities show little trust in taxpayers (Abdella and Clifford, 2010; Asaminew, 2010; Gobena and Van Dijke, 2016; Kirchler et al., 2008). In developed countries, relations between taxpayers and tax authorities are often more harmonious (see Alm and Torgler, 2011; Alon and Hageman, 2013; Bobek et al., 2013; Hansen et al., 1992; Hume et al., 1999; Maciejovsky et al., 2012; McGee, 2006; Molero and Pujol, 2012; Trivedi et al., 2003). We contribute to the ecological validity of the tax compliance literature by testing our predictions in both a developing and a developed nation (i.e. Ethiopia and the US).

4.2 Related Literature and Hypothesis

4.2.1 Distributive Justice, Procedural Justice and Voluntary Tax Compliance

Distributive justice refers to the extent to which outcomes of a process that distributes rewards and burdens are perceived as matching implicit norms such as the equity rule (Adams, 1965; Thibaut and Walker, 1975; Verboon and Van Dijke, 2007). The equity rule requires that individuals should receive benefits proportional to their contributions. Research has shown that individuals react more positively when decision outcomes are perceived as fair, rather than unfair (e.g. Bianchi et al., 2015; Brockner, 2002; Leventhal, 1976). More specific to the tax compliance literature, studies have shown that individuals voluntarily comply with tax laws when they perceive the distribution of tax burdens and benefits across individuals, groups, and the society as a whole as fair (e.g. Saad, 2011; Verboon and Goslinga, 2009; Wenzel, 2002, 2003).

However, scholars have realized that the fairness of outcomes (i.e. distributive justice) is insufficient to understand the behavior of members of social collectives. In

particular, it is also relevant to consider the perceived fairness of the decision-making procedures that authorities apply in enacting rules, resolving disputes, and allocating resources (i.e. procedural justice; Leventhal, 1980; Thibaut and Walker, 1975). Various factors affect the perceived fairness of procedures. Some of these factors include consistent application of the procedures across time, absence of decision-makers' self-interest in the process, decisions being based on accurate information, and allowing decision recipients to voice their opinions in the decision-making processes (Leventhal, 1980; Thibaut and Walker, 1975; van den Bos et al., 1996). Authorities' procedural justice is known to beget positive attitudes and cooperative behaviors from followers (Thibaut and Walker, 1975; Tyler and Blader, 2000). Some examples of such effects of procedural justice in various settings include rule-following (e.g. Tyler, 2009), and public support for police (e.g. Jason and Tyler, 2003). In the tax compliance literature also, studies show that procedural justice stimulates voluntary compliance with tax laws (Farrar, 2015; Hartner et al., 2008; Murphy and Tyler, 2008).

However, scholars have recognized that distributive justice and procedural justice should not be studied in isolation, but rather as interactive predictors of responses to authorities and the system they represent (e.g. Bianchi et al., 2015; Brockner and Wiesenfeld, 1996; De Cremer, 2005). The Procedural Justice \times Distributive Justice interaction has been studied from different angles. Some researchers showed that procedural justice is more likely to influence peoples' reactions to a decision when distributive justice is low (vs. high; e.g. Shapiro, 1991). Others showed that distributive justice is more likely to predict individuals' reactions when procedural justice is low (vs. high; e.g. Brockner et al., 1994). However, both ways of zooming in on the Procedural Justice \times Distributive Justice interaction imply, as noted earlier, that high procedural justice *or* high distributive is sufficient to lead to positive responses to the authority. Put differently, negative responses result only when procedural justice *and* distributive justice are both low.

The effect of the Procedural Justice \times Distributive Justice interaction on responses to authorities and the collective they represent has been explained in terms of various theories, including referent cognitions theory (Folger, 1987), the instrumental model of justice (Thibaut and Walker, 1975), and the group value model (Lind and Tyler, 1988). Brockner

and Wiesenfeld (1996) and De Cremer et al. (2010) argued that all of these explanations can be understood as emphasizing a sense-making process: Individuals interpret and assign meaning to events and encounters, particularly in response to negative, unexpected, or ambiguous circumstances (see Jones and Skarlicki, 2013; Weick, 1995). To assign meaning, people consider other aspects of the situation. For example, unfair (vs. fair) outcomes are perceived as negative; this makes people want to make sense of their surroundings: “Can I understand something about why this negative experience materialized and how bad the future will look?” Procedural justice provides a partial answer to this question, in the sense that low procedural justice communicates that unfair outcomes result from an unfair decision-making procedure and are thus likely to continue into the future. Fair procedures, on the other hand, suggest that the unfair outcomes result from chance, or at least from a less stable factor, and are therefore less likely to continue into the future. This results in a relatively strong positive effect of distributive justice on responses to authorities when procedural justice is low (vs. high).

4.2.2 The Role of Legitimate Power

The sense-making process described above suggests a role for the legitimate power of the enacting authority. In the tax compliance literature, legitimate power of the tax authority has been conceptualized as a form of power wielded by the authority that is adopted to protect cooperative citizens from exploitation by free-riding ones (see Kastlunger et al., 2013). This conceptualization echoes views of legitimate power in social psychology as implying that an authority has a stable position from which (s)he can serve the social system that (s)he leads (see Van Dijke et al., 2010). Because fair (vs. unfair) procedures are taken by individuals as communicating a positive future (and are therefore particularly effective in the face of low, rather than high distributive

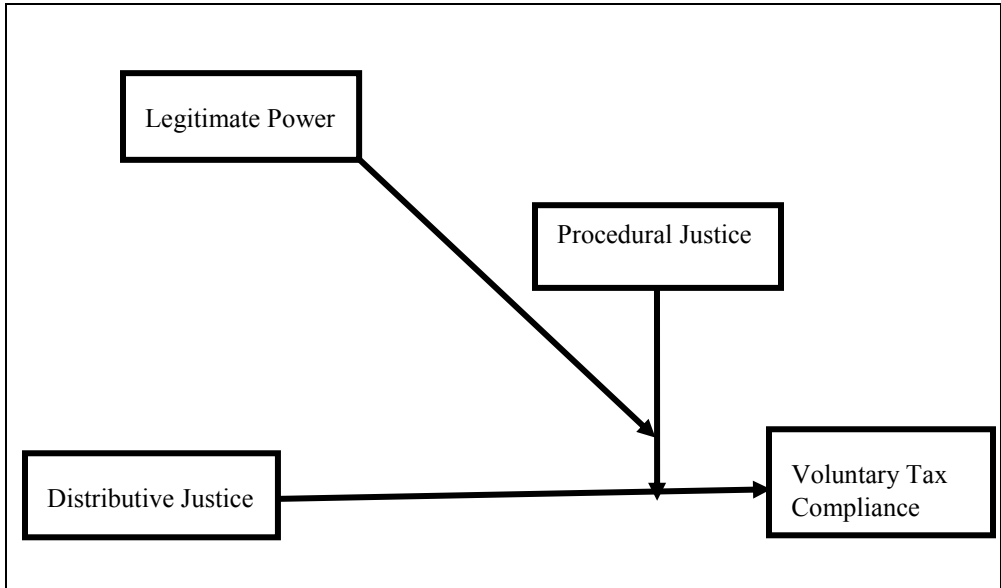


Figure 4.1. How Legitimate Power Moderates the Interaction Effect of Procedural Justice and Distributive Justice on Voluntary Tax Compliance

justice), we expect that the Procedural Justice \times Distributive Justice interaction materializes only when the enacting authority has high, rather than low, legitimate power. When the authority is low in legitimate power, procedural justice is less likely to be viewed as communicating a positive future in the face of low distributive justice. The above argument results in our hypothesis:

Legitimate power of the tax authority moderates the interaction effect of procedural and distributive justice of the tax authority on voluntary tax compliance, such that the Procedural Justice \times Distributive Justice interaction will be restricted to authorities who have high (vs. low) legitimate power.

4.3 Overview of Studies

We tested our hypothesis in two field studies. Study 1 is a survey undertaken in Ethiopia in which we collected data from working professionals in the capital, Addis Ababa. We used existing and validated scales for all the variables of our study. Study 2 is a survey in which we obtained data from US taxpayers. Our hypothesis concerns the effect of the interaction

between procedural and distributive justice (as further moderated by legitimate power) on voluntary tax compliance. For discriminant validity purposes, we therefore also included enforced tax compliance as a criterion variable. Enforced tax compliance refers to the extent to which citizens comply with tax rules and regulations because they feel forced to do so (i.e. out of fear of being punished upon non-compliance; Gangl et al., 2015; Gobena and Van Dijke, 2016; Kirchler et al., 2008). Neither the Procedural Justice \times Distributive Justice interaction nor the Procedural Justice \times Distributive Justice \times Legitimate Power interaction should predict enforced tax compliance.

As a further test of the unique role of legitimate power in moderating the Procedural Justice \times Distributive Justice interaction on voluntary tax compliance, in Study 2 we added coercive power of the tax authority as an additional moderator. Coercive power refers to authorities' ability to inflict punishment upon taxpayers (Kastlunger et al., 2013). If our argument is valid that legitimate power further moderates the Procedural Justice \times Distributive Justice interaction because it reflects the extent to which the authority is viewed as having the best interests of the collective at heart (rather than only as the extent to which the authority has power), the moderating role of legitimate power should not generalize to coercive power.

4.4 Study 1

4.4.1 Method

4.4.1.1 Respondents

We gathered data from 273 working professionals in the Ethiopian capital, Addis Ababa, over three months (March-May, 2016). Of the respondents, 88% were male and 12% were female. As for their age categories, 41% were between 20 and 30 years, 41% between 31 and 40, 16% between 41 and 50, 1% between 51 and 60, and 1% above 60 years of age. In terms of educational status, 1% of the respondents had completed elementary education only, 5% had a (2-year) college diploma, 52% had a bachelor's degree, 35% had completed a master's degree, and 7% had completed a PhD. With respect to their annual earnings, 31% of the respondents reported to have had annual earnings of 20,000–40,000 Ethiopian Birr (1 Birr =

approximately USD .05), 25% had earned 40,000–60,000 Birr, 8% had earned 60,000–80,000 Birr, 20% had earned 80,000–100,000 Birr, 5% had earned 100,000–120,000 Birr, and 11% had earned more than 120,000 Birr. Asked about their experiences with the tax authority, 7% of the respondents reported to have had less than 2 years of experience with the tax authority, 20% had 2–6 years, 35% had 6–10 years, 29% had 10–20 years, and 9% had greater than 20 years of experience. With regard to their ethnicity, 29% of our respondents reported being Amhara, 16% as Tigray, 34% as Oromo, 3% as Gurage, 18 as “other.”

4.4.1.2 Procedure

We used a printed questionnaire to collect data for this study. We distributed a total of 487 questionnaires to respondents. Accompanying the questionnaire were a cover letter and a return postage-paid envelope for enclosing the filled-out questionnaire. The cover letter explained the purpose of the study and assured strict anonymity of responses. With a few lagging respondents, assistant data collectors repeatedly made visits to their offices, met them on streets, and made phone calls to remind them of the questionnaire (to ensure a reasonable response rate for a questionnaire on a sensitive issue). The role of the assistant data collectors was restricted to transferring enclosed, filled-in questionnaires to the researchers; they could in no way endanger the anonymity of the respondents. Eventually, 284 questionnaires were returned (a response rate of 58%). Of these, eleven respondents skipped a significant number of questions and were therefore removed from the dataset. Consequently, a total of 273 usable questionnaires were included in the analyses.

4.4.1.3 Measures

We measured *procedural justice* with a 7-item scale developed and validated by Colquitt (2001). We used this scale rather than scales that have been used before in the tax compliance literature because the former scale includes items that measure strictly procedural justice factors (see e.g. Leventhal, 1980). Other procedural justice measures in the tax compliance literature such as Murphy’s (2004) measure contain items that measure the trustworthiness of the tax authority rather than procedural justice features proper. We slightly adapted the Colquitt (2001) items to fit the context of procedural justice of the tax authority. Item examples

(preceded by the stem “The following items refer to the procedures used to arrive at tax-related decisions.”) are “I have been able to express my views and feelings during those procedures” and “Procedures have been applied consistently” ($1 = \textit{strongly disagree}$, $7 = \textit{strongly agree}$). We averaged these items into a procedural justice scale.

We measured *distributive justice* of the tax authority with a 5-item scale from Verboon and Van Dijke (2007). Item examples are “The use I make of all kinds of social services reflects in a proper way the taxes I pay” and “Regarding social services I get little return for my tax money” (reverse coded) ($1 = \textit{strongly disagree}$, $7 = \textit{strongly agree}$). We averaged these items into a distributive justice scale.

We measured the tax authority’s *legitimate power* with a 5-item scale from Kastlunger et al. (2013). Item examples are “Tax evasion is detected in a high percentage of the cases” and “Tax authorities combat tax crimes in an efficient way” ($1 = \textit{strongly disagree}$, $7 = \textit{strongly agree}$). We averaged the items into a legitimate power scale.

We measured *voluntary tax compliance* with a 5-item scale from Kirchler and Wahl (2010). Item examples (preceded by the stem “When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so...”) are “... because to me it’s obvious that this is what you do” and “... to support the state and other citizens” ($1 = \textit{strongly disagree}$, $7 = \textit{strongly agree}$). We averaged the items to create a voluntary tax compliance index.

We measured enforced tax compliance with the 5-item scale from Kirchler and Wahl (2010). Item examples (preceded by the stem “When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so. . .”) are “. . . because a great many tax audits are carried out” and “. . . because the tax office often carries out audits” ($1 = \textit{strongly disagree}$, $7 = \textit{strongly agree}$). We averaged the items to create an enforced tax compliance index.

4.4.2 Results

Table 4.1 presents means, standard deviations, Cronbach alpha coefficients, and correlations between the study variables.

Table 4.1. Study 1 Variables' Means, Standard Deviations, Correlations, and Reliabilities

	Mean (SD)	1	2	3	4	5	6	7	8	9
1. Gender	0.12 (.33)									
2. Age Range	1.79 (.80)	-.18**								
3. Education	4.42 (.71)	-.00	.50**							
4. Annual Income	2.75 (1.68)	-.12	.40**	.48**						
5. Years of Experience	3.15 (1.06)	-.17**	.75**	.45**	.37**					
6. Distributive Justice	3.10 (1.18)	.01	.10	.08	-.05	.11	.70			
7. Procedural Justice	3.78 (1.43)	-.01	.01	.04	-.12*	.02	.34**	.93		
8. Legitimate Power	3.77 (1.34)	.03	-.01	.08	-.07	-.04	.54**	.14*	.87	
9. Enforced Tax Compliance	3.53 (1.48)	-.01	-.07	-.11	-.05	-.08	.30**	.08	.03	.80
10. Voluntary Tax Compliance	4.82 (1.49)	-.03	.01	.04	-.09	-.03	.45**	.42**	.22**	-.01

N = 273

Reliabilities (Cronbach's α coefficients) are on the main diagonal for multi-item scales.*, $p < .05$.**, $p < .01$.

Before testing our hypothesis, we conducted confirmatory factor analyses (CFA) to assess whether the scale items adequately represent their intended underlying constructs (Anderson and Gerbing, 1988; Bandalos, & Finney, 2001). We estimated a model with five latent variables (voluntary tax compliance, enforced tax compliance, procedural justice, distributive justice, and legitimate power) as well as a one-factor model in which all items loaded on to one factor. We also fitted a six-factor model, which included the five latent variables together with a common method factor that was uncorrelated to the theoretically derived factors (see Podsakoff et al., 2003). To judge the goodness of fit of the models, we relied on the root-mean-square error of approximation (RMSEA; Steiger, 1990), the comparative fit index (CFI; Bentler, 1990; Hu & Bentler, 1999), and the parsimony adjusted comparative fit index (PCFI; Byrne, 2016). The fit of the five-factor model was acceptable ($\chi^2(318) = 642.74$, RMSEA = .061 (90% CI = .054 – .068), CFI = .92, PCFI = .83) after allowing the error terms of item 1 and 2 of the procedural justice scale (see Appendix A) to covary. This covariation of the first two procedural justice items reflects prior research showing that the procedural justice scale has two components, that is, follower control (reflecting these two items) and leader benevolence (Van Dijke & De Cremer, 2010). The fit of the one-factor model was clearly insufficient ($\chi^2(325) = 2309.79$, RMSEA = .15 (90% CI = .144 – .156), CFI = .52, PCFI = .48). The six-factor model (adding a common method factor to the five-factor model), also fitted the data well ($\chi^2(292) = 518.71$, RMSEA = .053 (90% CI = .046 – .061), CFI = .95, PCFI = .78). Although some fit indices indicate a slightly better fit for the six-factor model (i.e. CFI, RMSEA), the PCFI for this model is clearly lower than for the five-factor model and, in fact, below the accepted threshold of .80 (Byrne, 2016). Thus, the CFAs support the validity of our specified measurement model. In fact, even if we accept the weak evidence for common method variance from the six-factor model, this does not preclude testing our hypothesis, as this concerns an interaction effect, which cannot be explained by common method variance (Evans, 1985).

We tested our hypothesis using hierarchical regression analyses. In step 1, we entered the main effects of distributive justice, procedural justice, and legitimate power. In step 2, we entered the Procedural Justice \times Distributive Justice interaction, the Procedural Justice \times Legitimate Power interaction, and the Distributive Justice \times Legitimate Power interaction.

In step 3, we entered the Procedural Justice \times Distributive Justice \times Legitimate Power interaction. (We standardized distributive justice, procedural justice, and legitimate power before calculating the interaction terms.) Table 4.2 presents the results of the regression analyses.

Table 4.1. Regression Results of Study 1

Dependent Variable	Voluntary Tax	Enforced Tax
	Compliance	Compliance
Step 1, R^2, R^2_{adj}	.28***, .27***	.05**, .04**
Distributive Justice	.30 (5.50)***	.01 (.16)
Procedural Justice	.34 (5.29)***	.25 (3.33)**
Legitimate Power	-.004 (-.06)	-.10 (-1.46)
Step 2, R^2, R^2_{adj}, R^2_{change}	.29, .27, .01	.06, .03, .01
Distributive Justice	.31 (5.54)***	.002 (.03)
Procedural Justice	.33 (4.87)***	.27 (3.57)***
Legitimate Power	-.003 (-.05)	-.11 (-1.53)
Distributive Justice \times Procedural Justice	-.09 (-1.37)	.12 (1.57)
Distributive Justice \times Legitimate Power	.05 (.81)	-.07 (-.92)
Procedural Justice \times Legitimate Power	.05 (.90)	-.02 (-.38)
Step 3, R^2, R^2_{adj}, R^2_{change}	.30*, .29*, .02*	.06, .03, .001
Procedural Justice	.31 (4.62)***	.27 (3.49)**
Distributive Justice	.39 (6.14)***	.02 (.24)
Legitimate Power	.04 (.55)	-.10 (-1.38)
Distributive Justice \times Procedural Justice	-.12 (-1.88)	.11 (1.44)
Distributive Justice \times Legitimate Power	.06 (.94)	-.07 (-.89)
Procedural Justice \times Legitimate Power	.02 (.31)	-.03 (-.48)
Distributive Justice \times Procedural Justice \times	-.16 (-2.55) *	-.03 (-.46)
Legitimate Power		

$N = 273$; Table presents standardized β coefficients and t values in brackets; * $p < .05$, ** $p < .01$, *** $p < .001$

As shown in Table 4.2, consistent with prior findings, the main effects of procedural and distributive justice on voluntary tax compliance are significant; the main effect of legitimate power did not significantly predict voluntary tax compliance.

In line with our hypothesis, in step 3, the three-way interaction between procedural justice, distributive justice, and legitimate power was significant. Figure 4.2 visually presents the shape of this interaction. We proceeded to decompose this interaction with simple slopes analyses (Aiken and West, 1991). These analyses showed that the Procedural Justice \times Distributive Justice interaction significantly predicted voluntary tax compliance when legitimate power of the tax authority was high (1 *SD* above the mean; $\beta = -.35$, $t = -2.77$, $p = .01$). However, when legitimate power was low (1 *SD* below the mean), the Procedural Justice \times Distributive Justice interaction did not significantly predict compliance ($\beta = .002$, $t = .02$, $p = .99$).

Because the two-way Procedural Justice \times Distributive Justice interaction significantly predicted compliance, we proceeded with further simple slopes tests to decompose this interaction. The results of this analysis showed that when legitimate power was high (1 *SD* above the mean) and procedural justice was low (1 *SD* below the mean), the relationship between distributive justice and voluntary tax compliance was positive and significant ($\beta = .49$, $t = 4.67$, $p < .01$). When legitimate power was low (1 *SD* below the mean) and procedural justice was high (1 *SD* below the mean), the relationship between procedural justice and voluntary tax compliance was also positive, albeit not significant ($\beta = .23$, $t = 1.42$, $p = .16$).

However, our argument implies that when legitimate power of the tax authority is high, lowered voluntary tax compliance results only when procedural justice and distributive justice are *both* low. Figure 4.2 appears to be in line with this predicted pattern. To formally test this pattern, we tested the simple slopes of procedural justice on voluntary tax compliance when distributive justice was high (vs. low) and when the legitimate power of the tax authority was perceived to be high (vs. low). The results of this analysis showed that when legitimate power was high (1 *SD* above the mean) and distributive justice was low (1 *SD* below the mean), the relationship between procedural justice and voluntary tax compliance was positive and significant ($\beta = .57$, $t = 2.53$, $p < .01$). When legitimate power

was low (1 *SD* below the mean) and distributive justice was high (1 *SD* below the mean), the relationship between procedural justice and voluntary tax compliance was not significant ($\beta = .13, t = .62, p = .53$).

These results thus indicate that procedural justice and distributive justice interact to predict voluntary tax compliance, such that voluntary tax compliance is low only when procedural and distributive justice are both low. But this interaction is restricted to tax authorities who are high in legitimate power. In further evidence of our argument, Table 4.2 also shows that procedural justice, distributive justice, and legitimate power of the tax authority did not interact to predict enforced tax compliance.

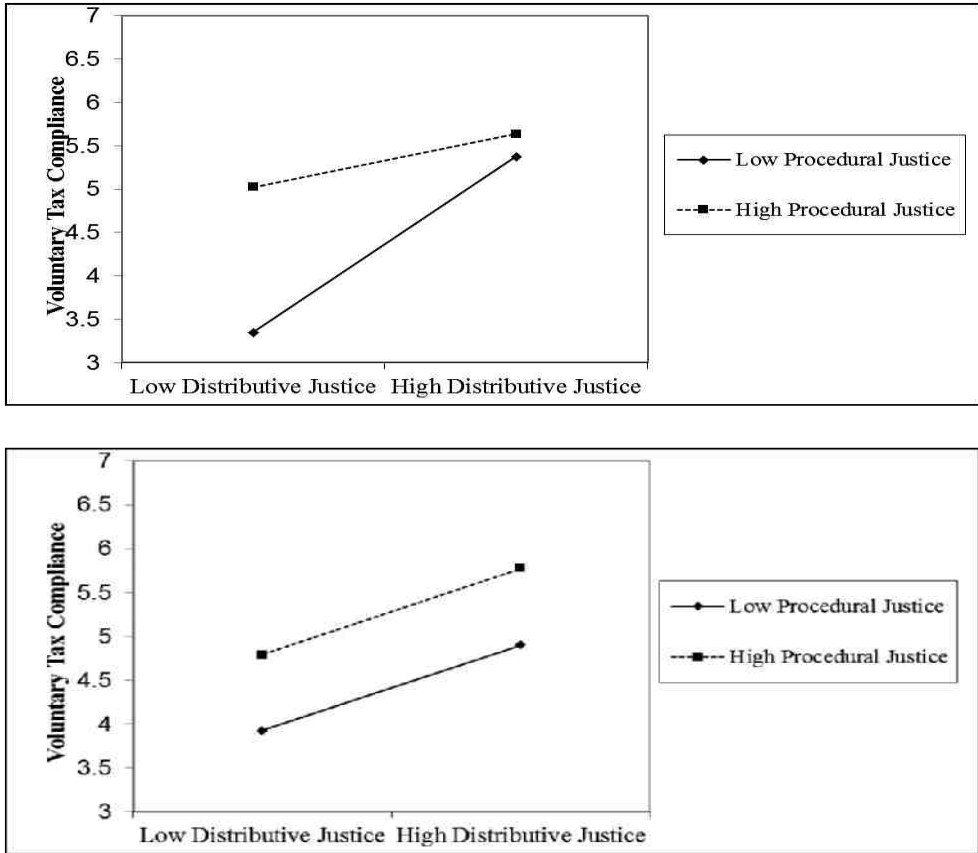


Figure 4.2. The Significant Procedural Justice \times Distributive Justice Interaction's Effect on Voluntary Tax Compliance when Legitimacy is High (Upper Panel) and the Non-Significant Procedural Justice \times Distributive Justice Interaction's Effect on Voluntary Tax Compliance when Legitimacy is Low (Lower Panel) (Study 1)

4.4.3 Discussion

One limitation of this study is that the data we used to test our hypothesis were gathered from a specific tax climate. That is, we gathered the data from Ethiopian taxpayers, and Ethiopia is characterized by a strained relationship between taxpayers and the tax authority (Abdella and Clifford, 2010; Bekana et al., 2014; Gobena and Van Dijke, 2016). As a result, it may not warrant validity in friendly tax climates such as those in the Western nations. The

second limitation is that we did not include coercive power of the tax authority in the analysis to determine whether the result we obtained for legitimate power would also apply to coercive power (it should not, according to our argument). In Study 2 we sought to replicate our findings obtained in the Ethiopian context in a very different taxation climate, that is, among US income taxpayers, and to include coercive power to address the second limitation of Study 1. Our thinking was that if we could replicate our finding in such a different taxation climate, it would enhance the confidence we have in our conclusions.

4.5 Study 2

4.5.1 Method

We recruited participants via Amazon's Mechanical Turk (AMT). AMT offers online access to a large pool of respondents, which makes data collection faster and inexpensive (Buhrmester et al., 2011). AMT has become a widely used tool for collecting data across a wide range of the social sciences (Buhrmester et al., 2011; Goodman, 2013). Studies that have employed AMT cover topics as diverse as procedural justice (Van Dijke et al., 2015) and acting professionally (Uhlmann et al., 2013). Evaluative studies show that the reliability of data collected via AMT for both survey and experimental studies mirrors (and sometimes is even superior to) that of data obtained using traditional methods (Bartneck, 2015; Behrend et al., 2011; Casler et al., 2013; Holden et al., 2013).

4.5.1.1 Sample and Procedure

Respondents, who currently have work that earns them taxable income and hence have experience with the tax authority, were invited online to participate in the study. All 248 respondents recruited for the study responded to all questions, and hence there were no dropouts or missing values. We introduced the study as being about "individuals' interactions with authorities." Of the 248 respondents, 48% were male and 52% were female. With regard to age, 30% were between 20 and 30 years, 30% between 31 and 40, 18% between 41 and 50, 12% between 51 and 60, and 10% above 60 years of age. In terms of their highest level of education, 1% had completed elementary school only, 24% had a high school diploma, 15% had completed vocational education, 46% had a bachelor's degree, 10% had completed a

master's degree, and 4% had completed a PhD. With respect to their annual earnings, 18% of the respondents reported having annual earnings less than 20,000 USD, 13% had earned 20,000–29,999 USD, 20% had earned 30,000–39,999 USD, 13% had earned 40,000–49,999 USD, and 36% had earned 50,000 USD or more. Among the respondents, 6% reported that they had less than 2 years of experience with the tax authority; 17% had 2–6 years; 14% had 6–10 years; 27% had 10–20 years; and 36% had more than 20 years of experience. Regarding ethnic background, 88% of respondents identified themselves as White/Caucasian, 4% as Hispanic American, 4% as African American, 2% as Asian American, 1% as Native American, and 1% as “other” than those listed.

4.5.1.2 Measures

We measured all study variables (i.e. procedural justice, distributive justice, legitimate power, and voluntary tax compliance) with the same scales as in Study 1, except for some wording changes in which “Ethiopia” was replaced by “the US.” All variables were measured on a 7-point Likert scale (*1 = strongly disagree, 7 = strongly agree*). In Study 2, we also included a measure of coercive power. We measured the tax authority's coercive power with a 5-item scale taken from Kastlunger et al. (2013). Item examples are “Tax authorities primarily aim to punish” and “Tax authorities' interventions are too severe” (1 = completely disagree, 7 = completely agree). We averaged the items into a coercive power scale.

4.5.2 Results

Table 4.3 presents means, standard deviations, Cronbach's alpha coefficients, and correlations between the study variables.

Table 4.3. Study 2 Variables' Means, Standard Deviations, Correlations, and Reliabilities

	Mean (SD)	1	2	3	4	5	6	7	8	9	10	11
1. Gender	0.52 (.50)											
2. Age Range	2.41 (1.29)	.71										
3. Education	3.54 (1.11)	-.08	-.02									
4. Annual Income	3.37 (1.52)	-.42	.15*	.27**								
5. Years of Experience	3.70 (1.27)	.01	.71**	.07	.25**							
6. Distributive Justice	3.14 (1.20)	.02	-.13*	.11	-.09	-.15*	.76					
7. Procedural Justice	3.85 (1.38)	.01	-.14*	.05	-.06	-.16*	.45**	.93				
8. Legitimate Power	3.85 (1.37)	.15*	-.21**	-.18**	-.06	-.21**	.53**	.18**	.89			
9. Coercive Power	4.27 (1.22)	-.05	-.09	-.11	-.01	-.03	-.35**	-.52**	.04	.82		
10. Enforced Tax Compliance	4.11 (1.40)	.06	-.09	-.08	.08	-.16*	-.04	-.26**	.19**	.39**	.84	
11. Voluntary Tax Compliance	4.83 (1.50)	.14*	.03	.10	-.08	-.01	.54**	.47**	.24**	-.43**	-.17**	.90

N = 248

Reliabilities (Cronbach's α coefficients) are on the main diagonal for multi-item scales.* $p < .05$.** $p < .01$.

Like in Study 1, we conducted CFAs. The fit of the 5-factor model was acceptable ($\chi^2(318) = 774.42$, RMSEA = .076 (90% CI = .069 – .083), CFI = .90, PCFI = .81) with all items loading significantly onto their predicted factor when the error terms of item 1 and 2 of the procedural justice scale were allowed to covary. The fit of the one-factor model was unacceptable ($\chi^2(325) = 2543.84$, RMSEA = .166 (90% CI = .160 – .172), CFI = .49, PCFI = .45). The fit of the six-factor model was also acceptable ($\chi^2(292) = 650.98$, RMSEA = .071 (90% CI = .063 – .078), CFI = .92, PCFI = .76). As in Study 1, although some fit indices indicate a slightly better fit for the six-factor model (i.e. CFI, RMSEA), the PCFI for of this model is lower than for the five factor model and, in fact, clearly below the accepted threshold of .80. In sum, the CFAs in this study also support the validity of our specified measurement model.

As in Study 1, we tested our hypothesis using hierarchical regression analyses. We entered the main effects of procedural justice, distributive justice, and legitimate power, as well as their interactions, in the same way as we did in Study 1. Table 4.4 presents the results.

Table 4.2. Regression Results of Study 2 with Legitimate Power as Boundary Condition

Dependent Variable	Voluntary Tax Compliance	Enforced Tax Compliance
Step 1, R^2, R^2_{adj}	.36***, .35***	.13***, .12***
Distributive Justice	.29 (5.05)***	-.29 (-4.30)***
Procedural Justice	.43 (6.47)***	-.06 (-.81)
Legitimate Power	-.05 (-.79)	.28 (3.94)***
Step 2, R^2, R^2_{adj}, R^2_{change}	.36, .35, .01	.14, .12, .01
Distributive Justice	.30 (5.13)***	-.28 (-4.10)***
Procedural Justice	.41 (5.90)***	-.06 (-.69)
Legitimate Power	-.04 (-.60)	.28 (3.84)***
Distributive Justice \times Procedural Justice	-.08 (-1.14)	.06 (.72)
Distributive Justice \times Legitimate Power	.09 (1.25)	.02 (.25)
Procedural Justice \times Legitimate Power	-.02 (-.37)	-.03 (-.44)
Step 3, R^2, R^2_{adj}, R^2_{change}	.37*, .36*, .01*	.15, .12, .01
Distributive Justice	.36 (5.59)***	-.22 (-2.97)**
Procedural Justice	.40 (5.83)***	-.06 (-.77)
Legitimate Power	.00 (-.01)	.31 (4.16)***
Distributive Justice \times Procedural Justice	-.09 (-1.36)	.04 (.55)
Distributive Justice \times Legitimate Power	.09 (1.36)	.03 (.33)
Procedural Justice \times Legitimate Power	-.02 (-.39)	-.03 (-.45)
Distributive Justice \times Procedural Justice \times Legitimate Power	-.13 (-2.16) *	-.12 (-1.68)

$N = 248$; Table presents standardized β coefficients and t values in brackets; * $p < .05$, ** $p < .01$, *** $p < .001$

As shown in Table 4.4, consistent with the results in Study 1, the main effects of procedural and distributive justice on voluntary tax compliance are significant; the main effect of legitimate power did not significantly predict voluntary tax compliance.

Similar to our finding in Study 1, in support of our hypothesis, the three-way interaction between procedural justice, distributive justice, and legitimate power was significant. Figure 4.3 visually presents the shape of this interaction. We proceeded to decompose this interaction with simple slopes analyses (Aiken and West, 1991). These analyses showed that when legitimate power was high (1 SD above the mean), the Procedural Justice \times Distributive Justice interaction was significantly related to voluntary tax compliance ($\beta = -.18$, $t = -2.19$, $p = .03$). However, when legitimate power was low (1 SD below the mean), the Procedural Justice \times Distributive Justice interaction was not significantly related to

voluntary tax compliance ($\beta = -.003, t = -.04, p = .97$).

Because the simple Procedural Justice \times Distributive Justice interaction significantly predicted voluntary tax compliance among citizens who perceive the tax authority to wield high legitimate power but not among those who perceive the tax authority to wield low legitimate power, we proceeded, as in Study 1, with further simple slopes tests in which we decomposed the Procedural Justice \times Distributive Justice interaction among citizens who perceive the tax authority to wield high legitimate power. The results of this analysis showed that when legitimate power was high (1 *SD* above the mean) and procedural justice was low (1 *SD* below the mean), the relationship between distributive justice and voluntary tax compliance was positive and significant ($\beta = .46, t = 4.62, p < .01$). When legitimate power was high (1 *SD* above the mean) and procedural justice was high (1 *SD* above the mean), the relationship between distributive justice and compliance was not significant ($\beta = .20, t = 2.09, p = .21$).

As stated earlier, our argument implies that when legitimate power of the tax authority is high, lowered voluntary tax compliance is predicted only when procedural justice and distributive justice are both low. Similar to Figure 4.2, Figure 4.3 appears to be in line with this predicted pattern. To formally test this pattern, we tested the simple slopes of procedural justice on voluntary tax compliance when distributive justice was high (vs. low), and when the legitimate power of the tax authority was perceived to be high (vs. low). The results of this analysis showed that when legitimate power was high (1 *SD* above the mean) and distributive justice was low (1 *SD* below the mean), the relationship between procedural justice and voluntary tax compliance was positive and significant ($\beta = .53, t = 3.61, p < .01$). When legitimate power was low (1 *SD* below the mean) and distributive justice was high (1 *SD* below the mean), the relationship between procedural justice and voluntary tax compliance was not significant ($\beta = .32, t = 1.71, p = .09$).

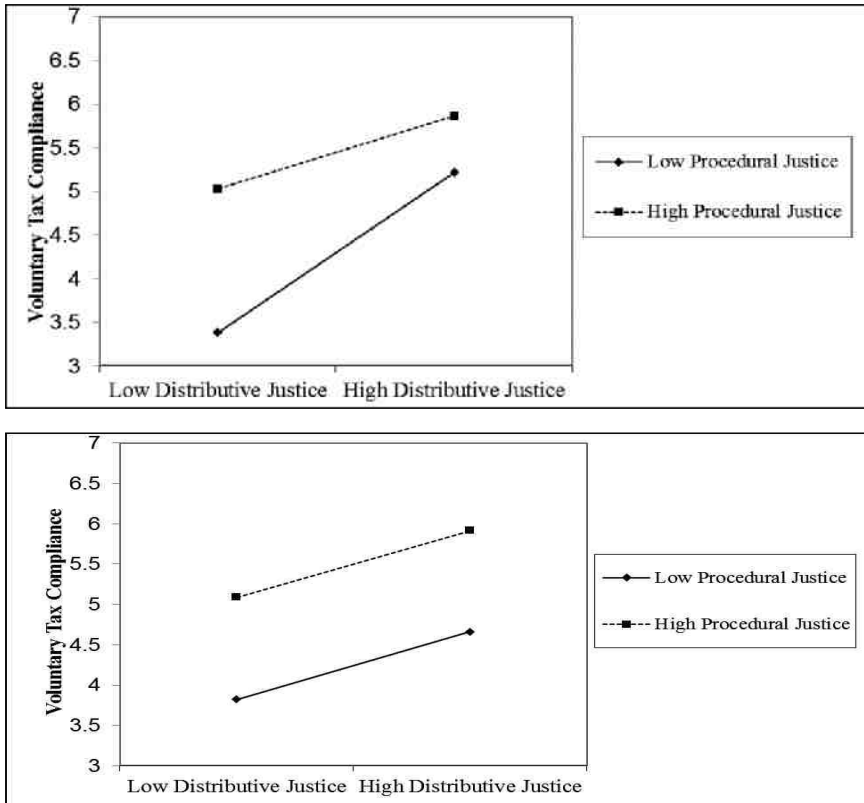


Figure 4.3. The Significant Procedural Justice \times Distributive Justice Interaction's Effect on Voluntary Tax Compliance when Legitimacy is High (Upper Panel) and the Non-Significant Procedural Justice \times Distributive Justice Interaction's Effect on Voluntary Tax Compliance when Legitimacy is Low (Lower Panel) (Study 2)

4.6 General Discussion

One important ethical dilemma that individuals face is whether to comply with tax laws and regulations, where the personal gains that result from non-compliance come at a cost for society and its members. We tested in an Ethiopian (Study 1) and US (Study 2) sample of income taxpayers if the “classic” Procedural Justice \times Distributive Justice interaction (i.e. responses being less positive only when procedural *and* distributive justice are low) is restricted to tax authorities who have high, rather than low, legitimate power. We obtained this predicted three-way interaction only on voluntary, and not on enforced, tax compliance. And the role of the tax authority’s power in moderating the Procedural Justice \times Distributive Justice was restricted to legitimate (rather than coercive) power (see Appendix B). In the following sections, we discuss the implications and limitations of this research.

4.6.1 Theoretical Implications

Procedural and distributive justice are important as antecedents of voluntary tax compliance (e.g. Wenzel, 2002, 2003). However, the interaction term between these two types of justice in predicting voluntary tax compliance has not been studied to date. We identified legitimate power wielded by the tax authority as a boundary condition to the interactive effect of procedural and distributive justice on voluntary tax compliance. This increases our understanding of when and how procedural and distributive justice moderate each other’s effect to shape voluntary tax compliance. We argued that taxpayers who perceive their current taxation encounters with the tax authority as negative and unexpected want to make sense of their surroundings. Procedural justice is instrumental in sense making, in the sense that low procedural justice communicates that unfair outcomes resulting from an unfair decision-making procedure are thus likely to continue into the future. In contrast, fair procedures inform the taxpayers that the unfair outcomes resulted by chance and are less likely to continue in the future. This perception results in a relatively strong positive effect of procedural justice on response to authorities when distributive justice is low (vs. high). However, in support of this sense-making analysis, we found that the Procedural Justice \times Distributive Justice interaction was limited to authorities who were high (vs. low) in legitimate power. Legitimate power represents the extent to which the tax authority has a

stable position from which (s)he can serve the social system that (s)he leads (see Van Dijke et al., 2010). Thus, we not only introduce the established Procedural Justice \times Distributive Justice interaction to understand tax compliance, but also contribute to understanding the process that underlies this interaction effect.

Second, our cross-cultural studies with two samples that strongly differ in terms of tax climates serve the purpose of filling the void in studies that compare the voluntary tax compliance behavior of developed and developing countries (Gobena and Van Dijke, 2016). Our study uniquely explores how social psychological and deterrent factors moderate each other in stimulating voluntary tax compliance across culturally different samples—one in Ethiopia and the other in the US. Accordingly, we contribute to the ecological validity of integrative roles of social psychological and deterrence factors on tax compliance. Deterrent factors are those factors that force individuals to behave against their will; one of such factors is power wielded by authorities (Kastlunger et al., 2013; Kirchler et al., 2008). Deterrent factors belong to a distinct stream of research on tax compliance behavior that presumes that taxpayers' compliance with taxation laws and rules depends on their self-interest and consequent comparison of the costs and benefits of evading taxes (Allingham and Sandmo, 1972). The deterrent line of research is based on the notion that taxpayers are selfish and will decide to pay taxes only when they perceive the expected costs of evading taxes (i.e. tax audits and subsequent punishments) to outweigh the benefits of evasion (i.e. money saved from unpaid taxes).

4.6.2 Practical Implications

We contribute to the practice of tax administration in two ways. First, prior research focused on the main effects of procedural and distributive justice (e.g. Saad, 2011; Wenzel, 2003). Unfortunately, taxpayers often perceive distributive justice as low, owing, for example, to judgment of their exchange with the government as unfair, inequitable distribution of tax burdens and benefits, or simply because they view paying taxes as unfavorable, which taints distributive justice perceptions. We showed, however, that high rather than low procedural justice of the tax authorities buffers the effects of lowered perceived distributive justice. Therefore, tax authorities can stimulate a higher level of tax compliance by making their

decision-making procedures free of their own self-interest, basing taxation decisions on accurate information, and letting the taxpayers voice their opinions in the decisions.

Second, a policy alternative to deal with taxpayers is for the tax authority to work in such a way that it would be perceived as high in procedural justice and legitimacy in situations where taxpayers perceive the authority as low in distributive justice, or to be sufficiently coercive in order to deter tax evasion. The coercion option is being followed by most authorities in developing countries, who care less about being perceived as procedurally and distributively just and hence are often perceived by taxpayers as illegitimate (Bekana et al., 2014; Fjeldstad, 2001; Gobena and Van Dijke, 2016). The coercion approach is costly, though, and arguably depletes the meager tax money that authorities in such an antagonistic climate could collect (Alm et al., 2012; Gangl et al., 2015; Murphy, 2008). Therefore, our findings highlight that procedural justice is particularly important in order to foster voluntary tax compliance for authorities who are perceived by taxpayer citizens as low in distributive justice but high in legitimacy. We note, however, that it is not easy for the tax authorities in developing countries to be perceived as just and legitimate while in an antagonistic tax climate, and they should strive to bring about a friendly tax environment in the first place. Such nations are advised to gradually build legitimacy by increasing the percentage of tax evasion they detect, combating tax evasion crimes in an efficient manner, frequently penalizing tax evaders, and having convincing knowledge and competence to detect tax evasion.

4.6.3 Limitations

As with all research, our studies are not free from limitations. A first limitation is the cross-sectional nature of the studies, which does not allow us to draw causal conclusions. Future studies are warranted to clarify the causal links between the variables using experimental or longitudinal designs. Yet, we note that prior experimental studies revealed that procedural justice causes voluntary tax compliance (e.g. Doyle, Gallery, Coyle, & Commissioners, 2009; Van Dijke and Verboon, 2010; Wenzel, 2006).

A second limitation is that we studied a highly sensitive subject (i.e. tax compliance behavior) based on self-reported data, which has been criticized on the ground that respondents may fear to provide genuine answers to questions about tax evasion/compliance

(Tauchen, 1987; Torgler, 2003). This arguably is attributable to respondents' concerns that genuine answers to such questions would mean confessing their taxation crimes (Hessing et al., 1988). Nevertheless, the use of self-reported measures in the tax compliance literature is common (e.g. Gobena and Van Dijke, 2016; Kastlunger et al., 2013; Wahl et al., 2010). Research examining the convergence of data from self-reported and objective compliance measures documented inconsistent results. Hessing et al.(1988), for instance, documented weak correlations between data from self-reported compliance and objective compliance measures, whereas Hite (1988) and Tittle (1980) found relatively strong correlations between the two datasets. The divergence between self-reported and objective measures might be because the two measures do not measure the same construct, leading them to be prone to different types of biases (e.g. Van Dijke and Verboon, 2010). Specifically, while self-reported data may be prone to memory lapses and self-presentation biases, objective compliance measures may fail to detect various types of non-compliance behavior. To overcome this limitation, we suggest future research employing objective measures of tax compliance to test our hypothesis.

4.7 Concluding Remarks

Procedural justice and distributive justice have both been identified as useful tools to stimulate voluntary tax compliance. The present research helps us to understand the interactive effect of these two types of justice on voluntary tax compliance, setting legitimate power of the tax authority as a boundary condition to the interactive relationship. In taking this approach, we show that fair procedures can make up for the perception of unfair outcomes, as long as the tax authority is perceived as wielding legitimate power. Integrating these separately established antecedents of voluntary tax compliance in two extremely divergent tax climates thus can result in theoretical progress as well as practically useful results that are respectively applicable in tax compliance literature and in improving tax administration.

Appendix A

Below is a list of two of the measures used in this paper. All responses were on a Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *moderately disagree*, 4 = *neither agree nor disagree*, 5 = *moderately agree*, 6 = *agree*, 7 = *strongly agree*).

Procedural Justice (Colquitt, 2001)

The following items refer to the procedures used to arrive at tax-related decisions.

8. I have been able to express my views and feelings during those procedures.
9. I have had influence over the (outcomes) arrived at by those procedures.
10. Those procedures have been applied consistently.
11. Those procedures have been free of bias.
12. Those procedures have been based on accurate information.
13. I have been able to appeal the (outcomes) arrived at by those procedures.
14. Those procedures have upheld ethical and moral standards.

Distributive Justice (Verboon and Van Dijke, 2007)

1. The use I make of all kinds of social services reflects in a proper way the taxes I pay.
2. Regarding social services I get little return for my tax money; reverse coded.
3. Some groups in society benefit more from the tax system than I do; reverse coded.
4. I think it is not fair that some people pay less tax than me while they benefit equally from all amenities; reverse coded.
5. I find that I have to pay too much tax; reverse coded.

Legitimate Power of Tax Authority (Kastlunger et al., 2013)

1. Tax evasion is detected in a high percentage of the cases.
2. Tax authorities combat tax crimes in an efficient way.
3. Tax evasion is likely to be detected.
4. Tax authorities control frequently and profoundly.
5. Due to their knowledge and competence, tax authorities are able to detect quite every act of tax evasion.

Coercive Power of Tax Authority (Kastlunger et al., 2013)

1. Tax authorities primarily aim to punish.
2. Tax authorities investigate as long as they find something.
3. Tax authorities' interventions are too severe.
4. Tax authorities nurture hostile feelings towards taxpayers.
5. Tax authorities interpret tax laws in order to punish the highest number of taxpayers.

Voluntary Tax Compliance (Kirchler and Wahl, 2010)

When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so...

1. ... because to me it's obvious that this is what you do.
2. ... to support the state and other citizens.
3. ... because I like to contribute to everyone's good.
4. ... because for me it's the natural thing to do.
5. ... because I regard it as my duty as a citizen.

Enforced Tax Compliance (Kirchler and Wahl, 2010)

When I pay my taxes as required by the Ethiopian tax laws and regulations, I do so....

- 1 ...because a great many tax audits are carried out.
- 2 ... because the tax authority often carries out audits.
- 3 ... because I know that I will be audited.
- 4 ... because the punishments for tax evasion are very severe.
- 5 ... because I do not know exactly how to evade taxes without attracting attention.

Appendix B

Table 4.3. Regression Results of Study 2 with Coercive Power as Boundary Condition

Dependent Variable	Voluntary Compliance	Tax
Step 1, R^2, R^2_{adj}	.38***, .37***	
Distributive Justice	.21 (3.30)**	
Procedural Justice	.38 (6.60)***	
Coercive Power	-.19 (-3.24)**	
Step 2, R^2, R^2_{adj}, R^2_{change}	.38, .37, .01	
Distributive Justice	.22 (3.40)**	
Procedural Justice	.36 (6.08)***	
Coercive Power	-.19 (-3.08)**	
Distributive Justice × Procedural Justice	.01 (.19)	
Distributive Justice × Coercive Power	.06 (.95)	
Procedural Justice × Coercive Power	-.01 (-.04)	
Step 3, R^2, R^2_{adj}, R^2_{change}	.39, .37, .01	
Distributive Justice	.20 (3.01)**	
Procedural Justice	.32 (4.77)***	
Coercive Power	-.17 (-2.79)**	
Distributive Justice × Procedural Justice	-.03 (-.46)	
Distributive Justice × Coercive Power	.02 (.32)	
Procedural Justice × Coercive Power	-.02 (-.29)	
Distributive Justice × Procedural Justice × Coercive Power	-.11 (-1.43)	

$N = 248$; Table presents standardized β coefficients and t values in brackets; * $p < .05$, ** $p < .01$, *** $p < .001$

CHAPTER FIVE
5 GENERAL DISCUSSION

This dissertation integrates a number of antecedents to voluntary tax compliance, with a specific focus on why and when procedural justice affects this type of compliance. Procedural justice has been shown to promote cooperative behavior in a number of different situations, including the reaction of employees to economic hardship in the event of a pay freeze (e.g. Schaubroeck, May, & Brown, 1994), the reaction of employees to organizational change (e.g. Tyler, & De Cremer, 2005), law enforcement (Barkworth & Murphy, 2015), and support for authorities (e.g. Tyler & DeGoey, 1995). In the tax compliance literature, procedural justice has also been shown to stimulate voluntary compliance with tax authorities' decisions and goals (Farrar, 2015; Hartner et al., 2008; Murphy & Tyler, 2008; Verboon & Goslinga, 2009), although this relationship has not always been found (e.g. Porcano, 1988; Wenzel, 2002; Worsham, 1996). Accordingly, it is worth exploring when and how procedural justice stimulates cooperation with tax authorities, and when and why it sometimes fails to do so.

Recent research has acknowledged the need for incorporating other intervening variables in the relationship between procedural justice and voluntary tax compliance (e.g. Murphy, 2004; Murphy & Tyler, 2008; Van Dijke & Verboon, 2010). A comprehensive framework for integrating various factors from both the economic deterrence and social-psychological streams is provided by the slippery slope framework, which focuses on the dynamics of power and trust (the latter being an important consequence of procedural justice) and their impact on the tax climate (Kirchler, 2007; Kirchler, Hoelzl, & Wahl, 2008). Although the framework has been refined by distinguishing between legitimate and coercive power (Gangl, Hofmann, & Kirchler, 2015; Gangl, Hofmann, Pollai, & Kirchler, 2012), it has rarely been tested empirically, especially in developing countries. It is, therefore, necessary to identify both theoretically- and empirically-sound variables that clarify why procedural justice sometimes stimulates voluntary compliance with tax authorities and sometimes does not.

I, together with the co-authors of the empirical papers presented in this dissertation, developed and tested hypotheses regarding the mediating and moderating roles of theoretically-grounded variables (i.e. trust in the tax authority, legitimate and coercive power wielded by the authority, the distributive justice of the authority, and the extent of the

taxpayers' identification with their nation). Below I provide a brief summary of the main findings of the empirical work. I will then discuss these findings in more detail. This discussion focuses on the contribution of the research presented in this dissertation to the tax compliance literature.

5.1 Summary of the Empirical Findings

In Chapter 2, I explored the roles of legitimate and coercive power wielded by the tax authority and trust in the authority as moderators and a mediator, respectively, of the relationship between procedural justice of the authority and taxpayers' voluntary compliance with the authority's decisions and goals. I employed fairness heuristic theory (Lind, 2001) and the slippery slope framework of tax compliance (Kirchler, 2007; Kirchler et al., 2008) as guiding frameworks to examine this proposed moderated mediation relationship. Fairness heuristic theory argues that individuals, in their decision to cooperate with authorities that represent a social collective, are faced with a fundamental social dilemma. The dilemma is between contributing to the collective (such as by voluntarily paying one's taxes), which offers a sense of identity and belonging and opportunities for improved outcomes (e.g. a better functioning country), on one hand, and refusal to contribute to the collective in fear of possible exploitation and identity damage due to abusive or rejecting authorities, on the other hand (Lind, 2001; Van Dijk, Parks, & Van Lange, 2013). In this dilemma, procedural justice communicates that authorities can be trusted not to abuse their power. Therefore, high procedural justice should stimulate more positive responses, such as increased tax compliance.

The other theoretical foundation of the research presented in this chapter—the slippery slope framework—also posits that the power wielded by tax authorities and trust in these authorities moderate each other's effect in stimulating voluntary tax compliance. To extend this assumption, I include trust in the tax authority as a mediator of the interactive effect of the power wielded by the authority and the procedural justice of the authority. In this study—conducted among business owners in Ethiopia—I found that procedural justice fosters voluntary tax compliance, particularly when the legitimate power of the tax authority is *low* (rather than high) and when the coercive power of the authority is *high* (rather than

low). In addition, I found support for the mediating role of (cognition-based) trust in the tax authority on the interactive effect of procedural justice and legitimate (but not coercive) power in shaping voluntary tax compliance. This is partly in line with the general conjecture in the slippery slope framework (Kirchler et al., 2008) that power and trust moderate each other's effect, although this framework does not distinguish between legitimate and coercive power. I also found that the coercive power of the tax authority is positively related to enforced (but not voluntary) tax compliance. This latter finding is consistent with previous research, which documented a positive relationship between coercive power and enforced tax compliance (e.g. Gangl et al., 2015; Hofmann et al., 2014; Kastlunger et al., 2013).

In chapter 3, with a view to furthering our understanding of why procedural justice sometimes (but not always) stimulates voluntary tax compliance, I identified identification with the nation as a boundary condition for the interactive effect of procedural justice and trust in the tax authority on voluntary tax compliance. I built this study on the work of Van Dijke and Verboon (2010), which documents the interactive effect of procedural justice and trust, such that the effect of procedural justice is most pronounced among citizens with low (rather than high) trust in the authority. Drawing from the fairness heuristic theory (Lind, 2001) and relational models of procedural justice (Blader & Tyler, 2015), I predicted that the relationship between procedural justice and voluntary tax compliance, which has particularly been found among citizens with low (rather than high) trust in the tax authorities, is restricted to citizens who weakly (rather than strongly) identify with the nation. To test this prediction, I conducted two field studies in different countries, Ethiopia and the US. The results from both surveys indeed show that the Procedural Justice \times Trust interaction is limited to citizens who weakly identify with the nation.

Finally, to better understand the underlying process that explains why people exhibit cooperative responses to procedural justice, I drew on the well-documented interactive effect of procedural and distributive justice on cooperative behavior (e.g. Bianchi et al., 2015; Brockner, 2002). The interactive effect of procedural and distributive justice on reactions to authorities' decisions usually means that high procedural justice *or* high distributive justice suffices to predict positive reactions to authorities' decisions. This interactive effect has been extensively documented in organizational behavior studies (see

Brockner & Wiesenfeld, 1996 for an overview). Applying this interactive effect to tax compliance, I included legitimate power wielded by the tax authority as a boundary condition for the interactive effect. Building on a sense-making analysis of justice (Brockner & Wiesenfeld, 1996; De Cremer, Brockner, Fishman, Van Dijke, Van Olffen, & Mayer, 2010), I examined whether or not the Procedural Justice \times Distributive Justice interaction predicts voluntary (but not enforced) tax compliance, particularly when the tax authority has high (rather than low) legitimate power. Similar to chapter 3, I conducted two field studies in different countries, Ethiopia and the US. The results from both surveys support the prediction.

5.2 Contributions to the Tax Compliance Literature

This dissertation makes a number of theoretical contributions to the tax compliance literature. The first contribution is that it clarifies the propositions contained in the slippery slope framework. The slippery slope framework and subsequent empirical tests posit that trust in authorities generally affects voluntary tax compliance, whereas the power of the tax authority affects enforced compliance (Alm, Kirchler, & Muehlbacher, 2012; Kastlunger et al., 2013; Kirchler et al., 2008; Muehlbacher et al., 2011). The framework also conjectures that power and trust moderate each other's effect on tax compliance, claiming that trust should matter most when power is low, because when power is at its maximum trust is less relevant as authorities can enforce compliance. Conversely, power should matter most when trust is low, as when trust is at its maximum variations in power are less relevant because citizens comply voluntarily, regardless of the level of power. While the initial slippery slope framework (Kirchler et al., 2008) did not distinguish between legitimate and coercive power, its extension (see Gangl et al., 2015) distinguishes between these two types of power. The extended framework notes that legitimate power and reason-based trust enhance each other's effect, creating a service climate and, together, leading to voluntary cooperation with tax authorities. In this dissertation I, together with my co-authors, showed that legitimate and coercive power, in fact, have opposite moderating roles on the relationship between an important antecedent of trust in the tax authority—namely, the procedural justice of the authority—and, thus, voluntary tax compliance. The study also showed that (cognition-

based) trust mediates the interactive effect of legitimate power and procedural justice, clarifying the mutual effect of legitimate power and reason-based trust noted above.

The second contribution of this dissertation is that, unlike prior work, which often focused on the judgment phase of the fairness heuristic theory in both organizational psychology (e.g. Van den Bos et al., 1998) and the tax compliance context (e.g. Van Dijke & Verboon, 2010), this dissertation included a focus on the ‘use phase’ of the fairness heuristic theory. Lind (2001) categorized individuals’ utilization of fairness information in their decision-making processes into two episodes (phases). In the judgment phase, fairness judgments and the resulting trustworthiness assessments are formed. Subsequently, in the use phase, these assessments are used to decide whether or not to cooperate with the authority. This dissertation shows how individuals use trust (which is itself predicted by procedural justice) in combination with the tax authority’s use of power in order to reach a decision to either voluntarily comply with or defy the authority’s decisions and goals. In other words, taxpayers first assess the tax authority’s trustworthiness based on their judgement of procedural justice information and then assimilate this information with their perception of the use of legitimate power by the authority in order to decide whether or not comply with tax laws and regulations.

A third contribution of this dissertation is that, by including both trust and identification with the nation as moderators of the effect of procedural justice on voluntary tax compliance, more is revealed about the nature of the moderating role of trust on the effect of procedural justice on tax compliance. Specifically, it was found (in line with previous work) that individuals respond positively (such as by voluntarily complying with tax authorities) to high procedural justice when they have low (rather than high) trust in the tax authority. This is because low trust makes individuals focus on procedural justice information to decide whether or not they may be taken advantage of when contributing to the collective (see Van Dijke & Verboon, 2010). Avoiding being taken advantage of by others implies a focus on one’s own potential outcomes (or losses); those who trust collective authorities less tend to value procedural justice information more than those who trust the authorities more, resulting in trust moderating the procedural justice effect (e.g. Van Dijke & Verboon, 2010). The research for this dissertation found that strong identification with

the nation overrides these self-focused concerns, as identification implies that one internalizes collective goals, thus making one less concerned with personal outcomes. Consequently, it contributes by suggesting that the processes underlying the fairness heuristic theory (Lind, 2001) are essentially self-focused in nature and that they vanish when there is strong identification with the nation.

The fourth contribution of this dissertation is that it tests the widely-documented interactive effect of procedural and distributive justice on reactions to authorities' decisions (primarily in organizational behavior) in the tax compliance context. More importantly, by including legitimate power wielded by the tax authority as a boundary condition for the procedural by distributive justice interaction, this research found that the interaction effect predicts voluntary tax compliance, particularly when the tax authority has high (rather than low) legitimate power. This implies that the tax authorities' level of legitimacy plays a vital role in the procedural by distributive justice interaction to stimulate cooperation, such that these two elements of justice interactively influence cooperative behavior only when the authorities are viewed as high in legitimate power.

A broader theoretical contribution that emerges from the research reported in this dissertation is the integration of the roles of deterrence-based predictors and social-psychological predictors of tax compliance—factors that have generally been studied in isolation. Thus, this research integrates the role of two widely-acknowledged psychological factors (i.e. procedural justice and trust in the tax authority) with an instrumental factor—the power (both legitimate and coercive) of the tax authority in relation to voluntary tax compliance. This finding increases our understanding of psychological and instrumental factors that recent frameworks suggest integrating (e.g. Alm, Kirchler, & Muehlbacher, 2012; Gangl et al., 2015; Kirchler, 2007, Kirchler et al., 2008), by showing how both legitimate and coercive power moderate the effects of procedural justice and trust on voluntary tax compliance.

A final broad theoretical implication can be derived from the testing of my hypotheses in samples that involve extremely diverging tax environments, one from the so-called “cops and robbers” environment in Ethiopia and another from a more “client and service” environment in the US. Unlike other studies, which usually apply theories and

models to tax compliance research in Western, developed nations, this dissertation tested the assumptions of many important theories and models, such as the fairness heuristic theory, the slippery slope framework of tax compliance, the relational model of procedural justice, and the sense-making model of justice in a developing country (i.e. Ethiopia). The findings suggest that many of the assumptions in these theories and models are not restricted to the context of developed countries.

5.3 Contributions to Tax Administration Practices

This dissertation also contributes to the practices used by tax authorities to ensure compliance. Most generally, it informs tax authorities about the conditions under which the well-documented positive effect of procedural justice on voluntary tax compliance can be enhanced. One such condition is when the legitimate power wielded by the tax authority is perceived by taxpayers as low. In this situation, procedural justice information will have more positive effects on both trust in the authority and voluntary tax compliance. Taxpayers may, for instance, perceive the tax authority as low in legitimate power if they view it as incompetent in enforcing tax laws and if they think it has failed to administer taxes efficiently (i.e. by incurring the lowest possible administrative costs). Another condition under which procedural justice becomes more important is when the tax authority is perceived as wielding high coercive power. Situations of high coercive power include indiscriminate frequent auditing of both genuine compliers, inadvertent tax evaders, and those who intentionally evade taxes (see Gangl et al., 2015). Thus, tax authorities should either be high in legitimacy to be able to secure taxpayers' voluntary compliance without reference to trust and justice concerns, or be sufficiently coercive to the extent that taxpayers would seek to avoid strict measures. It is noted, however, that a high level of coercion damages trust in the tax authority and is costly as it provokes taxpayers into evasion in retaliation against the authority's strict enforcement measures, requiring high investment in enforcement resources.

Another situation in which procedural justice is particularly effective in stimulating voluntary tax compliance is when citizens weakly identify with the nation and when, simultaneously, their trust in the tax authority is low. Taxpayers may find it difficult to identify with their country as a result of shame caused by the tax authority's behavior. One

instance of a tax authority's behavior leading to low trust and low identification is corruption; in this situation citizens pay taxes, but the use of the tax money is not transparent and the citizenry suffer from acute shortages of basic necessities (such as food and shelter), as is the case in many African countries (see Fjeldstad, & Therkildsen, 2008). In fact, (tax) authorities should endeavor to nurture citizens' identification with the nation, as this variable stands as a sufficient condition to stimulate voluntary tax compliance in its own right.

Fourth, this research informs tax authorities that they can stimulate voluntary tax compliance by being perceived as just, either in their decision-making procedures or in the ultimate distribution of tax burdens and tax-funded benefits. But, when taxpayers deem the fairness of the distribution of tax burdens and benefits as low, tax authorities are advised to strive to be perceived as high in both their legitimacy and the fairness of their decision-making processes. Only when high perceived procedural justice is coupled with high perceived legitimacy will it buffer the negative effect of low distributive justice. The fairness of the distribution by a tax system may be viewed as low when taxpayers feel that the tax authority serves some privileged groups over others or is committed to serving its own self-interest (see Alm, Jackson, & McKee, 1993; Fjeldstad & Semboja, 2001; Wenzel, 2003). Thus, tax officials ought to abstain from the discriminatory treatment of citizens and suppress their own self-interests if they are to be viewed as high in distributive justice.

5.4 Limitations of the Dissertation

Like any research, the research presented in this dissertation has its limitations. The first limitation derives from the measurement of the outcome variables in all studies. This measurement involves a sensitive subject measured using self-reporting methods. It has been noted that taxpayers' responses to questions about their tax evasion behavior cannot be relied upon to be completely genuine, as respondents could be worried that they are admitting to a serious crime (see Tauchen, 1987; Torgler, 2003). Studies that seek to determine the convergence of data obtained from objective and self-reported measures of tax compliance show inconsistent results. Some studies report weak correlations (e.g. Hesse et al., 1988) and others show relatively strong correlations (e.g. Hite, 1988; Tittle, 1980). In fact, the two measures differ in an important way: while self-reporting likely suffers from memory lapses

and self-presentation biases, objective measures can fall short of detecting various forms of non-compliance behavior such as taxpayers seeking tax loopholes to pay as little tax as possible and creative efforts by entrepreneurs not to pay taxes at all (e.g. by engaging in underground business activities; Sandmo, 2011). Therefore, self-reporting measures were preferred to objective measures for the purpose of this study, as they capture the abovementioned behaviors, which are important to the studies and which are not captured by objective measures.

Second, the use of a cross-sectional design in the studies makes causal claims impossible. However, confidence in the conclusions is boosted by prior experimental studies documenting a causal link between the main explanatory variable (i.e. procedural justice) and tax compliance (see Doyle et al., 2009; Van Dijke and Verboon, 2010; Wenzel, 2006). Future longitudinal research designs may even establish causal links between all variables.

Third, the sampling methods used in the studies in this dissertation are not probabilistic owing to the impossibility of accessing taxpayers' sensitive private information. As a result, convenience sampling was used, which restricts any attempt to generalize the findings to other settings than the samples included in the studies. Nevertheless, it must be noted that the intent in all of the studies was to test theories and models in the tax compliance context, rather than to generalize the findings to settings other than the samples. It has also been noted that when testing theory, all measures are indirect indicators of theoretical constructs, and no methodological procedures taken alone can produce external validity (see Lucas, 2003). Furthermore, the dissimilarity of the two samples in the studies presented in chapters 3 and 4 of this dissertation boosts the validity of the conclusions made.

5.5 Concluding Remarks

Burgeoning work on tax compliance over the past half century or so has identified a multitude of factors that have shaped tax compliance behavior. These factors primarily fall into either the economic or deterrence categories (i.e. threatening taxpayers to enforce tax laws) or the social-psychological category, which relies on taxpayers' voluntary deference to tax authorities' decisions and goals. In this dissertation, the social-psychological approach

was emphasized, as it leads to less costly outcomes and provides a better explanation for the processes underlying tax compliance than the deterrence approach. One of the most widely-acknowledged social-psychological factors stimulating voluntary compliance with the tax authority is the procedural justice of the authority. By considering the effects of various mediating and moderating variables on the effect of procedural justice on voluntary tax compliance, this dissertation furthers our understanding of the effect of procedural justice on voluntary tax compliance. More broadly, it integrates social-psychological factors among themselves, as well as with deterrence factors.

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SUMMARIES

Summary

This thesis explores the integrative effect of social psychological factors among themselves as well as with economic deterrent factors in stimulating voluntary tax compliance, contributing to the tax compliance literature a theoretically relevant integrative approach that bridges between social psychological and economic deterrence approaches. It also contributes to the ecological validity of research on tax compliance behavior by comparing samples of two tax environments that are extremely unlike—one from a developing country (i.e. Ethiopia) and another from a developed country (i.e. the US).

Chapter 1 is an introductory chapter that seeks to introduce the thesis and summarize research on voluntary tax compliance, highlighting the need to integrate antecedents of voluntary tax compliance. Each of the three empirical chapters contributes to theoretical and empirical developments of the tax compliance literature.

Chapter 2 explores the moderating roles of two (i.e. coercive and legitimate) types of power wielded by the tax authority in the relationship between procedural justice and voluntary tax compliance as mediated by (cognition-based) trust in the authority. This study finds support for the prediction that high (but not low) coercive and low (but not high) legitimate power of the tax authority moderate the positive relationship between procedural justice and voluntary tax compliance. Only procedural justice by legitimate power interaction has been mediated by (cognition-based) trust.

Chapter 3 examines identification with the nation as a boundary condition to the interactive effect of procedural justice of and trust in the tax authority on voluntary tax compliance and finds support in two distinct samples for the prediction that the interactive effect (of procedural justice and trust) is significant among citizens who weakly (rather than strongly) identify with the nation.

Chapter 4 explores legitimacy of the tax authority as a boundary condition to the interactive effect of procedural and distributive justice in stimulating voluntary tax compliance and finds support in two studies for the prediction that high (but not low) legitimate power moderates the interactive effect of procedural and distributive justice on voluntary tax compliance.

Chapter 5 discusses in detail the empirical findings presented in this dissertation

with emphasis on their theoretical as well as practical contributions and limitations.

Keywords: Procedural Justice, Distributive Justice, Cognition-based Trust, Legitimate Power, Coercive Power, Identification with the Nation, Voluntary Tax Compliance, Enforced Tax Compliance.

Samenvatting (Dutch Summary)

In dit proefschrift wordt beschreven hoe sociaal psychologische factoren in onderlinge samenhang en in samenhang met economische factoren vrijwillige belasting-naleving voorspellen. Daarmee wordt een theoretisch relevante bijdrage geleverd aan de literatuur over belasting-naleving die een brug slaat tussen sociaal psychologische en economische benaderingen van dit onderwerp. Het onderzoek draagt ook bij aan de ecologische validiteit van het onderzoek naar belasting-naleving door het vergelijken van steekproeven uit twee zeer verschillende belastingomgevingen - één uit een ontwikkelingsland (Ethiopië) en een ander uit een ontwikkeld land (de VS).

Hoofdstuk 1 introduceert het proefschrift en vat het onderzoek samen.

In hoofdstuk 2 worden de modererende rollen van twee soorten macht (d.w.z. dwang- en legitieme macht) van de belastingautoriteit onderzocht in de relatie tussen procedurele rechtvaardigheid en vrijwillige belasting-naleving. Deze studie vindt dat een hoge (vs. lage) dwang-gebaseerde en lage (vs. hoge) legitieme macht van de belastingautoriteit de positieve relatie tussen procedurele rechtvaardigheid en vrijwillige belasting-naleving versterken. Het vindt ook dat alleen het interactie effect van procedurele rechtvaardigheid en legitieme macht op vrijwillige belasting-naleving wordt gemedieerd door (cognitie gebaseerd) vertrouwen.

In hoofdstuk 3 wordt de rol van identificatie met de natie als moderator van het interactie effect van procedurele rechtvaardigheid en vertrouwen in de belastingautoriteit op vrijwillige belasting-naleving onderzocht. Er wordt in twee afzonderlijke steekproeven steun gevonden voor de voorspelling dat het interactie effect van procedurele rechtvaardigheid en vertrouwen op vrijwillige belasting-naleving alleen gevonden wordt onder burgers die zich zwak (in plaats van sterk) identificeren met de natie.

In hoofdstuk 4 wordt de legitimiteit van de belastingautoriteit als moderator voor het interactie effect van procedurele en distributieve rechtvaardigheid bij het stimuleren van vrijwillige belasting-naleving onderzocht. In twee studies wordt gevonden dat hoge (vs. lage) legitieme macht het interactie effect van procedurele en distributieve rechtvaardigheid op vrijwillige belasting-naleving versterkt.

In hoofdstuk 5 worden in detail de empirische bevindingen van dit proefschrift

bediscussieerd, met een nadruk op hun theoretische en praktische bijdragen en beperkingen.

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BIOGRAPHICAL NOTE

Lemessa Bayissa Gobena was born on June 21, 1973 in Wollega, Ethiopia. He completed his high school in Gida Ayana Abiot Fire Senior Secondary School in Wollega, Ethiopia. He earned a two year diploma in Mathematics from Bahir Dar Teachers' College in 1993. He graduated from Ethiopian Civil Service College with Bachelor of Arts degree in Accounting in 2001. He continued his study and graduated in Masters of Science in Accounting and Finance from Addis Ababa University in 2005. He started his PhD research in 2012 in Erasmus University Rotterdam under the supervision of professors Marius Van Dijke and Peter Verboon.

Lemessa's research focuses on authorities' fairness and their use of power in securing cooperative behaviors. His research interests are exploring how less democratic authorities could be viewed by their followers as fair and trustworthy in order to enjoy voluntary deference to their decisions and goals. His research has been published in a leading peer-reviewed journal, *Journal of Economic Psychology*.

PhD Portfolio

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- 2004-2005 **Master of Science in Accounting and Finance**, Addis Ababa University
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Publications

- Asfaw, M. A., Argaw, M. D., & Gobena, L. B. (2015). The Impact of Training and Development on Employee Performance and Effectiveness: A Case Study of District Five Administration Office, Bole Sub-City, Addis Ababa, Ethiopia. *Journal of Human Resource and Sustainability Studies*, 3(2015), 188-202. doi:<http://dx.doi.org/10.4236/jhrss.2015.34025>
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- Gobena, L. B., & Van Dijke, M. (2016). Power, justice, and trust: A moderated mediation analysis of tax compliance among Ethiopian business owners. *Journal of Economic Psychology*, 52(2016), 24-37. doi: <http://dx.doi.org/10.1016/j.joep.2015.11.004>

Gobena, L. B., & Van Dijke, M. (2017). Fear and Caring: Procedural Justice, Trust, and Collective Identification as Antecedents of Voluntary Tax Compliance. *Journal of Economic Psychology*, 62(2017), 1-16. doi: <https://doi.org/10.1016/j.joep.2017.05.005>

Manuscript under review:

Gobena, L. B., Verboon, P., & Van Dijke, M. _____. Does Legitimacy Matter? A Three-way Interaction between Procedural Justice, Distributive Justice, and Legitimate Power on Voluntary Tax Compliance. Under review at *Journal of Business Ethics*

Selected PhD Courses

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- Narrative Analyses of Interview Data, Tilburg University (training)
- Scientific Integrity in Research in Management
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