

Working Paper

Fiscalis Project Group no. 98: Trust and Compliance Project

Trust-based Tax Compliance

A Survey of Empirical Evidence from a Tax Administration Perspective

Casper Hunnerup Dahl¹

February 2021

Abstract

The paper presents a survey of recent empirical findings in social science research on tax compliance from the perspective of a tax authority aiming to work with trust-based approaches to tax compliance. The survey of the literature constitutes a foundation of knowledge supporting the guidelines of the *Trust and Compliance Project* carried out by the *Fiscalis Project Group no. 98*. Building on existing surveys, the importance of both trust and power for taxpayer behaviour is acknowledged. Considering the scope of the project, the literature survey is necessarily selective in nature, focusing mainly on the relationship between trust and compliance and the dynamics of voluntary and enforced compliance with a special emphasis on the former. In order to illuminate and substantiate the guidelines of the project, a wide range of themes, aspects and topics are covered. This is done in relation to the interaction between taxpayer and tax authority, the interaction between tax authority and third parties, and the inner workings of the tax authority itself.

JEL Classification codes: H2, H26, H83, C9, D91

Keywords: tax administration, tax compliance, trust, fairness, reciprocity, intrinsic motivation, tax morale, social norms, culture, deterrence, enforcement

¹ Danish Tax Agency (Skattestyrelsen). E-mail: casper.dahl@sktst.dk. Any errors are the responsibility of the author.

1. Introduction

This paper examines what tax administrations can learn from empirical social science research in working with a trust-based approach to tax compliance. Thus, the literature survey is selective in nature, focusing mainly on the relationship between trust and compliance and the dynamics of voluntary and enforced compliance with a special emphasis on the former.

The literature review constitutes a foundation of knowledge supporting the nine guidelines of the *Trust and Compliance Project* carried out by the *Fiscalis Project Group no. 98*. These guidelines to EU member states' tax authorities cover a wide spectrum of relevant themes and issues when working with trust-based approaches to compliance. Consequently, the literature review prioritizes breadth over depth and becomes selective in nature in its treatment of themes, issues and subfields.

The literature on tax compliance has been surveyed several times over the last two decades – see, e.g., [Andreoni, Erard & Feinstein \(1998\)](#), [Richardson and Sawyer \(2001\)](#), [Torgler \(2002\)](#), [Kirchler \(2007\)](#), [Slemrod \(2007, 2017, 2019\)](#), [Hashimzade et al. \(2013\)](#), [Devos \(2014\)](#), [Luttmer & Singhal \(2014\)](#), [Pickhardt & Prinz \(2014\)](#), [Mascagni \(2018\)](#) and [Alm \(2019\)](#). While the latter three share with this paper a focus on non-pecuniary motives in addition to economic motives for compliance, other surveys like those by Slemrod (2007, 2017, 2019) and [Luttmer & Singhal \(2014\)](#) either retain a strictly neoclassical focus (Slemrod) or presents a selective overview of the behavioural-economic part of the literature (Luttmer & Singhal).

The literature review in this paper builds on existing surveys, acknowledging the importance of both trust and power. Thus, the merits of deterrence-based compliance strategies based on existing empirical evidence are not dismissed – rather, these are supplemented here primarily with recent empirical evidence of non-deterrence rather than deterrence measures. This implies a focus deliberately emphasizing voluntary compliance over enforced compliance. As such, the paper provides a foundation of scientific knowledge under the guidelines arising from this project and the arguments supporting them.

The rest of the paper falls in three parts. *Part 2* provides a brief overview of the theoretical development within the field. This is kept short and to-the-point on purpose, since this paper serves first and foremost as an exploration of empirical findings. *Part 3* presents an empirical literature review in which the most recent and most relevant studies for the *Trust and Compliance* project are reviewed. The review is divided into sections according to what is arguably the most important areas (or arenas) within the wider tax ecosystem in which the tax authority itself is involved, namely taxpayer & tax authority and tax authority & third parties, ending with a focus on the interior of the tax authority itself. Each section contains one or more subsections covering empirical research related to one of the project's guidelines. Finally, *part 4* summarizes all empirical findings and offers some concluding remarks.

2. Theory

2.1. The neoclassical deterrence model

As a field of research, tax compliance has mainly been a province of economics with contributions also drawing on sociology, psychology and political science. This is not surprising, as the individual's decision to comply or not to comply when paying taxes is essentially an economic one.

The point of departure for modern tax compliance research has traditionally been the so-called ASY model. Developed through the pioneering works of [Allingham & Sandmo \(1972\)](#), [Srinivasan \(1973\)](#) and [Yitzhaki \(1974\)](#) — hence, the ASY acronym — the model is essentially an application of [Becker's \(1968\)](#) rational-choice model of crime in general to tax compliance in particular.

The ASY model casts the tax compliance decision of the individual as a rational, economic decision of costs and benefits. Thus, in this model, the individual weighs the monetary benefit of not paying one's dues against the perceived risk of detection and the perceived consequence of detection. That is, only if incentives make it rational in terms of risk perception and penalty assessment for the individual taxpayer to comply, the taxpayer in the model will choose to do so.

By logical implication, compliance is thus conceptualised as enforced. The fact that compliance is only affected by deterrence means that the model can only predict enforced (i.e. involuntary) compliance, thus ignoring voluntary compliance as a phenomenon along with the behavioural factors that would lead to voluntary rather than enforced compliance. To their credit, [Allingham & Sandmo \(1972\)](#) themselves did acknowledge the fact that their version of the model disregards non-pecuniary factors like social norms, individual morale and ethical considerations and that such components ought to be included for a more realistic, but also much more complex model of the individual's tax compliance decision.

2.2. Behavioural-economic and social/fiscal psychological reactions

The theoretical shortcomings of the ASY model led researchers to consider new theoretical insights. Coinciding with —and to some extent fuelled by— the development of behavioural approaches to economic behaviour inspired by Simon ([1947](#), [1955](#), [1978](#)), Kahneman & Tversky ([1972](#), [1979](#)) and Akerlof ([1991](#), [2000](#)) among others, tax compliance researchers began questioning the reach of the model's potential in explaining tax compliance behaviour.

Also, empirical evidence in many cases appeared out of sync with the ASY model's predictions. An early survey by [Andreoni, Erard & Feinstein \(1998\)](#) showed that empirical evidence on the effects of deterrence measures was mixed and often inconsistent with the predictions of the ASY model. In short and rather simplified terms, individuals seemed to be much more compliant than the rational-choice dynamics of the model predicted. Not only did the predicted positive effects of audits on tax compliance not consistently appear in empirical studies — studies began to appear showing that under some circumstances, audits could actually backfire.

Thus, a new line of research essentially turned the fundamental neoclassical research question on its head. Instead of asking: "Why do people *evade* taxes?" behavioural economists and

social/fiscal psychologists started asking: “Why do people *pay* taxes?” (e.g., [Alm, McClelland & Schulze 1992](#)), pointing to the fact that compliance levels across the world were much higher than the neoclassical model would seem to predict (as mentioned above), especially in developed countries.

This led to an accelerated expansion of the research field. As a logical next step in tax compliance research, insights from behavioural economics and cognitive, fiscal and social psychology were increasingly incorporated through works by [Lewis \(1982\)](#), Alm ([Alm, McClelland & Schulze 1992](#); [Alm, Sanchez & De Juan 1995](#)), [Feld & Frey \(2002\)](#), [Torgler \(2002\)](#) and [Murphy \(2004\)](#), among others, with Kirchler ([1999](#), [2007](#)) as a leading proponent and the *Journal of Economic Psychology* as a primary outlet for publications. Since then, the research field has greatly expanded in terms of the number and variety of disciplines involved, and the number of journal articles published has exploded.

2.3. Modelling enforced and voluntary compliance in combination

An important contribution of recent theoretical efforts has been to incorporate both monetary and non-pecuniary behavioural motives in the same framework. By doing so, recent theoretical developments within the field allow for theoretical predictions based on both power and trust and for modelling the dynamics of the two in combination. In a 2008 paper, [Kirchler, Hoelzl & Wahl \(2008\)](#) (see also [Kirchler 2007](#)) outlined a new theoretical perspective called the *slippery slope framework*, setting the agenda for further studies of tax compliance behaviour by emphasizing both dimensions of power and trust. The *power* dimension captures economic incentives defined by taxpayers’ perceptions of authorities’ capacity to detect and punish tax evaders. The trust dimension captures psychological motivations of tax compliance affected by, among other things, taxpayers’ general opinion that the tax law and regulations are clear and easy to follow, and that the tax authority operates fairly and benevolently in the interest of the community ([Gangl, Hofmann & Kirchler 2015](#)).

In the *slippery slope framework*, the interaction between taxpayers’ trust in authorities and authorities’ power to monitor taxpayers affects taxpayers’ intentions to comply voluntarily or enforced as well as intentions to avoid or evade taxes. In simplified terms, this creates a distinction between two pure types of taxpayers: Those who intend to voluntarily comply with the law, and those who intend to withhold their contributions and only comply when incentivized to do so by actual enforcement or perceived risk of enforcement ([Kirchler & Wahl 2010](#)). In aggregate, the balance between power and trust in the relationship between taxpayers and tax authority result in different interaction climates, where the exertion of strong power fosters an antagonistic climate while high trust is necessary in fostering a synergistic climate ([Kirchler 2007](#); [Kirchler, Hoelzl & Wahl 2008](#)).

The framework yields predictions for behavioural dynamics of taxpayers vis-à-vis tax authority under four stylized scenarios of taxpayer trust/tax authority power:

- A) *High trust – high power*: Most taxpayers comply voluntarily, while compliance of the strictly economically rational taxpayers will be enforced, deterred from illegal tax behaviour by high tax authority power.

- B) *High trust – low power*: Most taxpayers comply voluntarily, while the strictly economically rational taxpayers will perceive the low-power tax authority as benevolent and incapable at/unwilling to enforce tax laws, thus leading them to break the law and evade taxes.
- C) *Low trust – high power*: Most taxpayers' compliance is enforced – however, while most taxpayers intend to reduce their taxes within the legal range of the law and engage in tax avoidance, they are deterred from illegal tax behaviour by high tax authority power.
- D) *Low trust – low power*: As in scenario C, most taxpayers' compliance is enforced – but given low tax authority power, most taxpayers are now also expected to break the law and evade taxes.

More recently, the *slippery slope framework* has been extended in terms of more nuanced conceptualisations of power and trust ([Gangl, Hofmann & Kirchler 2015](#), see also [Gangl, Hofmann, Hartl & Berkics 2020](#)). In the extended version of the theory, tax authority power can be *coercive* or *legitimate*, while taxpayer trust can be *reason-based* or *implicit*:

- *Coercive* power decreases *implicit* trust in tax authorities, leading to *enforced* compliance and an *antagonistic* climate
- *Legitimate* power increases *reason-based* trust, leading to *voluntary* compliance and a *service* climate
- Over time, *reason-based* trust evolves into *implicit* trust via positive experiences with the tax authority, leading to *committed* compliance and a *confidence* climate.

Along similar theoretical lines, Steinmo (2018) describes two types of stable configurations of trust, enforcement and compliance as *compliance equilibria*. Building on [Bergman \(2009\)](#), [Steinmo \(2018\)](#) argues that different levels of compliance in different countries can be seen as real examples of such *compliance equilibria*: What the state can do is in large measure defined by what citizens believe about their state, and what citizens believe about their state is in large measure defined by what their state has done and how it has behaved toward them in the past. Obviously, this creates potential for virtuous as well as vicious cycles:

- *Low compliance equilibrium*: States that have low capacity to enforce their laws and rules tend to have citizens who distrust that state. When citizens distrust their state it is difficult for the state to collect the revenues that could make the citizen more satisfied with their state.
- *High compliance equilibrium*: The state has earned the trust and support of its people and is thus able to lower monitoring costs at the same time that it works to improve delivery of its services.

As such, Steinmo's compliance equilibria can be seen as broad characterizations of stable versions of the *antagonistic* and *synergistic* tax climates of the original *slippery slope framework*. In addition, the description of the *high compliance equilibrium* indicates the trajectory from the service climate to the confidence climate of the extended *slippery slope framework*.

3. Empirical evidence

This part presents and documents some of the most relevant empirical findings for the *Trust and Compliance project of the Fiscalis Project Group no. 98*. Some studies are only briefly mentioned to indicate the breadth and diversity of empirical evidence with respect to a specific point, but most of the cited studies are reviewed in some detail to give an idea of how the researchers arrived at their conclusions – what kind of sample was used, which methods were applied etc.

The part is structured in sections according to what is arguably the most important areas (or arenas) within the wider tax ecosystem in which the tax authority itself is involved. These areas/arenas are taxpayer & tax authority; tax authority & third parties, and the interior of the tax authority itself.

Each section contains one or more subsections related to the *guidelines of the project*. The only exception is subsection 3.1.1. Tax morale and social norms, which is not directly related to any one of the guidelines specifically. Instead, the findings in this subsection and the subfield they represent can be seen as foundational for the entire trust-based approach to tax compliance. Like the guidelines, the different subsections cover various aspects of the dynamics between trust, power and compliance. The purpose of each subsection is to present examples from empirical research that supports or puts into perspective the arguments of the related guideline.

The literature review is structured and its subsections related to the guidelines in the following way:

- **3.1. Fundamentals of non-pecuniary behavioural motivations**
 - 3.1.1. Tax morale and social norms
 - 3.1.2. Trust is related to guideline no. 6. *Measuring and evaluating trust*
- **3.2. Tax authorities' engagement with taxpayers**
 - 3.2.1. Power and trust: The dynamics of enforced and voluntary compliance is related to guideline no. 3. *Use power such as audit and enforcement actions in a way that strengthens trust*
 - 3.2.2. Communication: Nudging, persuasion, and deterrence is related to guideline no. 4. *Use communication as a trust builder in all contacts and interactions*
 - 3.2.3. Respectful treatment: The importance of fairness is related to guideline no. 1. *Make sure that every taxpayer receives and perceives respectful treatment*
 - 3.2.4. Transparency and predictability by reducing complexity and uncertainty is related to guideline no. 2. *Act in a transparent and predictable way towards taxpayers and other stakeholders*
 - 3.2.5. Trust-enhancing digital government services: Challenges and opportunities is related to guideline no. 5. *Influence trust through digitalisation*
- **3.3. Tax authorities' relations with third parties** is related to guideline no. 7. *Work proactively and in cooperation – make sure that third parties are part of your trust-based strategy*
- **3.4. Inside the tax authority: Organizational culture and management**

- 3.4.1. Trust in organisational culture and practice is related to guideline no. 8. *Focus on how organisational behaviour supports trust*
- 3.4.2. Trust and performance management: A contradiction in terms? is related to guideline no. 9. *Performance management with a trust-based approach*

3.1. Fundamentals of non-pecuniary behavioural motivations

This section covers some of the most fundamental individual and social phenomena which are **preconditions to voluntary compliance**. Subsection 3.1.1 is not directly related to any one of the guidelines specifically, while subsection 3.1.2 is related to guideline no. 6. *Measuring and evaluating trust*.

3.1.1. Tax morale and social norms

By now, it is a well-established empirical fact that tax morale as well as social norms in general influences tax compliance. Tax morale —defined as an individual’s intrinsic willingness to pay taxes arising from the moral obligation to pay taxes as a contribution to society— and social norms are both rather elusive and intangible concepts, and especially with respect to social norms it is not immediately obvious how tax administrations can actively affect these in the short or even the long run in order to improve compliance. In terms of shaping tax morale, for example, research documents that many other factors than the conduct of the tax authority itself matters. However, tax authorities still need to be aware of the many ways in which their administration of tax laws and their conduct and approach to taxpayers in general can affect the intrinsic willingness to pay taxes among taxpayers.

Some of the findings in empirical tax research providing evidence of effects of tax morale and social norms on tax compliance include the following:

- [Alm & Torgler \(2006\)](#) looks at tax morale and the relation between this and culture differences in the United States and in Europe, finding a strong negative correlation between the size of the shadow economy and the degree of tax morale.
- [Torgler & Schneider \(2009\)](#) examine how countries’ tax morale and institutional quality affect the shadow economy and provide evidence showing that a higher tax morale and a higher institutional quality lead to a smaller shadow economy.
- In a panel of 19 Latin American countries observed from 1990 to 2004, [Dell’Anno \(2009\)](#) finds empirical support for the idea that tax morale is important in explaining aggregate tax evasion and, furthermore, that tax morale is dependent on the taxpayers’ intrinsic attitudes to honesty and social stigma.
- [Kemmer, Parikh & Steigner \(2020\)](#) find evidence of cross-border equity flows designed to evade taxes in low tax morale countries, indicating that individuals in countries with low tax morale engage in tax evasion via roundtripping through tax havens.

Differences in culture and tax morale explain different levels of compliance across countries. [Cummings et al. \(2009\)](#) investigate the effects of political (cultural) norms on compliance behaviour, testing if cross-cultural differences in tax compliance behaviour have foundations in the institutions of tax administration and citizen assessment of the quality of governance. They

conduct an artefactual field experiment (i.e., a natural experiment) in Botswana and South Africa – two countries with substantially different political histories and records of governance quality, but geographical neighbours and many other similarities. They find that there are indeed differences in compliance behaviour consistent with differences in social norms – for example, perceptions of fairness and efficacy are considerably higher in Botswana and self-reported tax compliance is higher. Observed differences in tax compliance levels persist over alternative levels of enforcement; tax compliance increases with individual perceptions of good governance; and responses to the usual enforcement mechanisms (audits and penalties) are enhanced by these perceptions, indicating the importance of tax morale. Furthermore, while compliance does increase with enforcement effort, the effect is less in the country for which governance is less good, which lend support to the core argument in the ‘slippery slope framework’ about trust and legitimate power.

[Lewis et al. \(2009\)](#) investigate individual and cultural differences in tax compliance in a comparative experimental study conducted in Italy and the UK. By testing for the same individual effects in the same way in both countries, they are able to examine the influence of culture by comparing results from the two samples. As anticipated, the Italian participants were more prone to evade than the UK participants, and individual effects of different interventions (e.g., framing) were more pronounced in the Italian sample. These results indicate that whereas enforcement is likely to be effective in countries where tax morale is relatively low (represented by Italy in the study), approaches of power may damage (or even destroy) intrinsic motivation in countries where tax morale is relatively high (like the UK). Thus, the study lends empirical support to the idea that a tax regime which treats people as purely instrumental beings might encourage instrumentality and legitimize this way of thinking among taxpayers.

Culture and tax morale are closely linked and relatively persistent across borders and generations. [Halla \(2012\)](#) demonstrates that the tax morale of second-generation Americans are mainly and significantly influenced by the country of origin of their ancestors and argues that this phenomenon can be explained by a causal effect of inherited moral values. This inherited part of tax morale is not affected by the current economic and institutional environment. Using this measure of inherited tax morale, the study shows that there is a causal effect of tax morale on the size of the underground economy.

[Kountouris & Remoundou \(2013\)](#) also examines the cultural component in individual tax morale, using immigrant data drawn from the European Social Survey. They find that the level of tax morale in the country of immigrant origin positively influences individual tax morale in the destination country, lending further empirical support to the idea that culture is a significant determinant of tax morale. This finding holds across different population segments, indicating the importance of culture and tax morale for tax policy design. Thus, the authors argue that policies aiming to limit tax avoidance may be unsuccessful unless cultural influences are understood and accounted for.

[DeBacker, Heim & Tran \(2015\)](#) study how cultural norms and enforcement policies influence corporate tax evasion. Utilizing a new data set of 25,541 IRS audits of foreign-owned corporations for the 12 years from 1996 to 2007, they exploit the fact that firms with different home-country norms are exposed to the same legal enforcement setting in the United States. This allow the authors to estimate the influence of home-country corruption norms of a firm on its tax evasion behaviour. Results show that corporations with owners from countries with

norms of higher corruption evade more tax in the U.S. This effect is strong for small corporations and decreases as the size of the corporation increases. The authors also show that several enforcement initiatives implemented in the U.S. in the mid-2000s were less effective in reducing tax evasion by corporations whose owners are from corrupt countries. Overall, the findings indicate that tax morale is important for compliance itself as well as for the effect of enforcement activities on compliance.

Tax morale work at the individual level – and interacts with reciprocity and social norms. [Boyer, Dwenger & Rincke \(2016\)](#) conducts a field experiment to investigate how imposing norms on contribution behavior affects the intrinsic motivation of individuals, including whether such external interventions can potentially exercise a crowding-out effect on intrinsic motivation. They use the church levy of the Catholic Church in Bavaria, Germany, which is collected as a charitable donation although it is legally a tax. The authors show that when the levy is communicated as a tax (thus activating potential social norms of tax compliance) in the experiment, taxpayers with weak intrinsic motivation react to the indirect appeal to tax compliance norms while taxpayers with strong intrinsic motivation do not behave differently. In other words, both intrinsic motivation (tax morale) and social norms affect compliance – but their effects vary among different types of taxpayers.

In a related experimental study also based on church taxes in Bavaria, Germany —only this time a tax collected by the Protestant church— [Cagala, Rincke & Tuset-Cueva \(2019\)](#) find that information to taxpayers about reduced collection costs (invoking potential effects of increased government/public sector efficiency) affects compliance differently for taxpayers according to their levels of tax morale. Thus, the study shows that taxpayers with high tax morale reciprocate perceived improvements in administrative efficiency (cost reductions) with higher compliance, while taxpayers with low tax morale, on the other hand, are unlikely to reciprocate administrative improvements with higher compliance. Overall, the study supports the notion of tax morale as important for compliance while at the same time demonstrating that reciprocity is a component of tax morale – but only when this is sufficiently strong.

[Doerrenberg & Peichl \(2018\)](#) conducts a randomized survey experiment in order to assess the role of social norms and reciprocity in shaping tax morale. Applying a social norm treatment (by informing about the tax gap) as well as a reciprocity treatment (by informing about societal benefits of reducing the tax gap), the authors find that participants in the social-norm treatment have *lower* tax morale relative to the control group while participants in the reciprocity treatment have significantly *higher* tax morale than those in the social-norm group. Overall, these results suggest that a potential crowding-out effect of invoking social norms (as found by [Boyer, Dwenger & Rincke 2016](#)) could be outweighed if the consequences of violating the social norm are made salient.

Tax morale also operates at the firm level and affects firms' tax compliance. While most studies of tax morale focus on individuals, [Alm & McClellan \(2012\)](#) examine the impact of tax morale on tax compliance for firms using data from various business and enterprise surveys. The find that firms that have higher tax morale, and thus believe evading taxes is wrong, evade less than firms with lower tax morale. Overall, their results support previous findings from studies focusing on individuals, indicating consistency between the decisions individuals make for themselves and the decisions individuals make through their firms.

[Bame-Aldred et al. \(2013\)](#) investigate the influence of important cultural forces (e.g., individualism, achievement orientation, assertiveness, humane orientation) on tax evasion while controlling for institutional, demographic, and attitudinal predictors of tax evasion. To that end, they conduct a multilevel analysis with both country- and firm-level data, examining actual reports of firm tax evasion from over 3000 companies in 31 countries. Overall, their results suggest that national culture creates a context that encourages or discourages different rates of tax evasion by firms regardless of other influential individual firm characteristics or other national institutional components.

3.1.2. Trust

Empirical research lends plenty of support to the intuitively meaningful idea that an individual's compliance with some set of rules depend, among other things, on the degree to which the individual shares the norms and values underlying these rules. It is also well established that the more an individual citizen trust an institution and its representatives, the more likely that citizen is to perceive rules and regulations set forth and enforced by that institution as legitimate, which in turn affects the citizen's willingness to comply with these rules and regulations. For tax authorities, two aspects of trust are of special importance:

- **Taxpayers' trust in the tax authority:** The more a taxpayer trust the tax authority, the greater the likelihood that (a reasonable) exercise of power by the tax authority will be perceived as legitimate. Conversely, the less trust a taxpayer has in the tax authority, the more likely it is that a similar exercise of power will be perceived as coercive.
- **Trust between taxpayers with respect to tax compliance:** A taxpayer's tax morale can be affected by the taxpayer's perception of the extent to which other taxpayers are compliant. As a consequence – but also working as a separate effect – a taxpayer can be expected to reciprocate the (perceived or experienced) behaviour of others, creating a potential for both virtuous and vicious cycles.

Trust in government affects perceived tax system fairness and compliance. Analyzing data from a survey of 217 U.S. taxpayers, [Jimenez & Iyer \(2016\)](#) find that trust in government has a significant influence on both perceived fairness of the tax system and compliance decisions.

In a survey among 392 independent accounting professionals in Turkey, [Güzel, Özer & Özcan \(2019\)](#) find that trust in government in general is systematically linked to tax justice perceptions and tax compliance. This indicates not only the importance of institutional environment and the perceived quality of institutions, but also that since trust in government in general matters for tax compliance, trust in the tax authority specifically is likely to be even more important.

Trust in other taxpayers as well as in government and politicians matters, too. Trust in other taxpayers and trust in politicians also affects tax compliance: Using a survey of a representative sample of taxpayers in Sweden, [Hammar, Jagers & Nordblom \(2009\)](#) show that the more a taxpayer claims to trust other taxpayers, the less they suspect them to cheat. However, trust in politicians in parliament seems to be even more important: In this case, distrusting taxpayers are about twice as likely to perceive evasion of several specific types of taxes to be common compared to those who do not distrust the politicians in parliament.

The findings of Hammar et al. reinforces a result from a previous, oft-cited study by [Scholz & Lubell \(1998\)](#), who used survey and tax return data from a sample of 299 middle- and upper-income taxpayers to show that both trust in government and trust in other citizens significantly increase the likelihood of tax compliance. This result holds even when taking into account the impact of an internalized sense of duty to obey laws and the fear of getting caught evading taxes.

Not surprisingly, trust in the tax authority itself also plays a role. [Bornman \(2015\)](#) reviews eight studies specifically dealing with the impact of trust in the tax administration on compliance and finds that not only procedural justice, legitimacy and identity (taxpayers' identification with the community), but also personal norms affects compliance via the trust channel.

Conducting lab experiments at several universities in both Italy and the US in order to compare results across different institutional and socio-economic contexts, [D'Attoma \(2020\)](#) finds that trust in the tax authority matters. When faced with various general tax decision scenarios, participants' behaviour did not differ systematically across countries – however, when asked to pay taxes to their real-world institutions, behaviours diverged significantly with Italians complying less than Americans.

Crises are unlikely to reduce the importance of trust for compliance. The general dynamics of trust in institutions in general and tax authorities specifically and the importance for tax compliance are unlikely to change due to the present covid-19 pandemic. As [Alm et al. \(2020\)](#) argue, the reasoning applies not only to tax administration measures in general but equally so to tax measures related specifically to the Corona crisis.

In a cross-country study of EU member states during the period 2000-2011, [Kuokstis \(2017\)](#) finds that trust mediates the relationship between economic environment and compliance, so that economic downturns affect high and low trust countries differently with respect to compliance. The argument is that high trust societies have more citizens with high tax morale, who are less likely to begin evading if strict economic incentives to do so increase due to an economic crisis. In low trust societies, on the other hand, more citizens make tax-related choices on purely rational grounds and thus start complying less in times of economic crisis.

Thus, measuring trust is important – but difficult. The most feasible option for tax authorities in measuring taxpayers' trust in the tax authority, arguably, is to conduct public opinion surveys using questionnaires. However, choosing the right questions to ask in order to get valid measures of trust is not straightforward: While it is not so difficult to capture *some* aspect of taxpayers trust in the tax authority, capturing *most* (or even all) of the relevant aspects requires several questions and careful detailing of each of them. Furthermore, the arguments behind each question need careful consideration as well in order to substantiate what these questions actually measure in terms of different aspects of trust.

Based on her review of studies of trust and tax compliance (see above), [Bornman \(2015\)](#) argues that survey measures of trust in tax administrations tend to be quite narrow in scope, relying on few questions and only measuring part of the palette of trust-relevant aspects. Thus, she argues that trust measurement can be improved by taking into account not just one aspect – procedural fairness, legitimacy, identification, and norms – but, preferably, all of them.

3.2. Tax authorities' engagement with taxpayers

This section covers behavioural factors and compliance aspects related to the core interaction between the taxpayer and the tax authority. Subsection [3.2.1](#) is related to guideline no. 3. *Use power such as audit and enforcement actions in a way that strengthens trust*; subsection [3.2.2](#) is related to guideline no. 4. *Use communication as a trust builder in all contacts and interactions*; subsection [3.2.3](#) is related to guideline no. 1. *Make sure that every taxpayer receives and perceives respectful treatment*; subsection [3.2.4](#) is related to guideline no. 2. *Act in a transparent and predictable way towards taxpayers and other stakeholders*; and subsection [3.2.5](#) is related to guideline no. 5. *Influence trust through digitalisation*.

3.2.1. Power and trust: The dynamics of enforced and voluntary compliance

Enforcement must be done right to have overall positive effects on compliance. There is no doubt that enforcement tools such as audits remain an essential part of a tax administration's toolkit. There is plenty of evidence that enforcement can increase compliance through deterrence. However, a large and growing body of research examining both economic and psychological factors shows that enforcement must be used with great care to yield net benefits.

- While deterrent effects are well established, more and more studies document that they are neither universal across types of taxpayers (e.g., [Laine, Silander & Sakamoto 2020](#)) nor different socio-economic and cultural contexts (e.g., [Williams & Horodnic 2017](#)).
- Moreover, even when desired deterrent effects of audits materialize, audits may at the same time be perceived as coercive rather than legitimate and thus negatively affect trust, tax morale and, hence, voluntary compliance (e.g., [Kaplanoglou & Rapanos 2015](#)).
- The way audits are handled by the tax authority also matters: while research shows that delayed feedback on audits can have significant deterrent effects on future compliance, it comes with a price because the audited taxpayers perceive the process and the tax authority as more unfair ([Muehlbacher et al. 2012](#); [Kogler, Mittone & Kirchler 2016](#)).
- In addition, even less intrusive measures such as supervision on timely tax payments may lead to delayed tax payments, indicating a crowding-out of intrinsic motivation to comply ([Gangl, Torgler, Kirchler & Hofmann 2014](#)).

Power, if perceived as coercive, may reduce trust and voluntary compliance. In a recent study for the Taxpayer Advocate Service in the USA, [Erard et al. \(2019\)](#) conducts a survey on how audited and non-audited taxpayers perceive the tax system and the Internal Revenue Service (IRS). They find that audits tend to induce negative attitudes among audited taxpayers, who tend to perceive greater coercive power within the IRS, have relatively less trust in the agency, and express weaker sentiments with regard to voluntary compliance. Furthermore, audited taxpayers are also relatively more likely to indicate that paying taxes feels like something is taken away from them, rather than as a contribution to society. Regarding the effects of audit on compliance, the conclusion is mixed: Audited taxpayers do report a higher perceived level of audit risk, but they also perceive a relatively low level of sanctions for noncompliance.

[Gangl et al. \(2015\)](#) also explores the double-edged nature of coercive power using survey data from a representative sample of Austrian self-employed taxpayers. The find that trust is closely linked to perceptions of legitimacy: taxpayers who consider coercive power illegitimate tend not to trust the authority, whereas those who consider coercive power legitimate tend to trust the authority. This, in turn, may determine whether citizens' interactions with the authority is characterized by antagonism and lack of compliance or synergism and compliance. Which of these perceptions of power dominate may depend on perceptions of how coercive power is used: targeted against non-compliant taxpayers to safeguard the cooperative majority (i.e., *retributive justice*) or randomly to threaten all taxpayers in general to comply.

Thus, striking the balance between power and trust is crucial. In two experimental studies conducted in Vienna, Austria, with 261 participants overall, [Hofmann et al. \(2014\)](#) test the effects of coercive and legitimate power applied in combination. In the experiments, tax authorities are described as having low or high *coercive* power (e.g., imposing lenient or severe sanctions) and/or low or high *legitimate* power (e.g., having non-transparent or transparent procedures). The combination of both strategies is assumed to cause greater levels of intended compliance than each strategy alone. The authors find that coercive power and legitimate power both seem to affect intended tax compliance, if applied separately:

- When only legitimate power is applied, authorities are perceived as benevolent but without sufficient measures at their disposal to prosecute free riders, inducing some intended tax compliance but less than when both qualities of power are exercised in combination.
- On the other hand, application of only coercive power resulted in lower intended tax compliance.
- However, when both qualities of power are applied in combination, legitimate power – but not coercive power – has an impact on intended tax compliance.

[Siglé et al. \(2018\)](#) also test predictions from the *slippery slope framework*, examining the role of trust and power in corporate tax compliance via survey data collected among representatives of large (profit and not-for-profit) organisations in the Netherlands (n=271). Overall, the results support the development of trust-based regulatory activities (e.g. cooperative compliance strategies): The authors find a positive relationship between trust and tax compliance; power appears to be negatively associated with voluntary compliance; and they find no significant relationship between power and enforced compliance. Furthermore, they find a moderating effect of power on the relationship between trust and voluntary compliance: high power appears to undermine the positive effect of trust on self-reported voluntary compliance.

[Kastlunger et al. \(2013\)](#) test predictions from the *slippery slope framework* regarding the dynamics of power and trust on a sample of 389 self-employed Italian taxpayers and entrepreneurs, finding that trust is positively related to voluntary tax compliance. They also find that trust is negatively related to coercive power and positively related to legitimate power. Both coercive power and legitimate power are correlated with enforced compliance — however, the effect of enforced compliance actually leads to increased evasion.

[Batrancea et al. \(2019\)](#) study trust and power as determinants of tax compliance across 44 nations from five continents (N=14,509) in a series of experiments. Overall, they find that

despite some between-country variation, trust and power are important determinants of tax compliance across all nations – despite different economic, sociodemographic, political, and cultural backgrounds. In general, the power effect is larger than the trust effect. More specifically, the authors find that trust and power foster compliance through different channels:

- *Trusted* authorities (those perceived as benevolent and enhancing the common good) register the highest voluntary compliance
- *Powerful* authorities (those perceived as effectively controlling evasion) register the highest enforced compliance
- Trust and power are not fully complementary: In countries with already high levels of trust and compliance, too strict enforcement (e.g., high audit rates and severe fines) may in fact result in reactance and resistance provoking noncompliance.

Retributive justice is important for voluntary compliance. Based on survey data from a sample of self-employed taxpayers, [Kogler, Muehlbacher & Kirchler \(2015\)](#) finds that while perceived retributive justice has no direct effect on the taxpayer's own compliance, it does have a significant positive effect on trust, which in turn leads to voluntary compliance. At the same time, perceived retributive justice is positively related to the perception of power as being legitimate, which is important in building or maintaining a service- or confidence-based tax climate.

[Sjoberg et al. \(2019\)](#) conduct a survey experiment based on a very large sample of 65,000 respondents from 50 countries, which allow the authors to assess causal effects across a wide range of contexts. The study shows that increasing the salience of anti-corruption efforts has a significant effect on tax morale, and that this effect is quite homogenous across countries. Thus, the study provides evidence that retributive justice is an important driver of tax morale and, hence, voluntary compliance.

Different tax climates, different enforcement strategies. In an experimental study of behavioural responses to authority, [Silverman, Slemrod & Uler \(2014\)](#) investigates the interplay between two sources of authority - authority “to” (legitimate power) and authority “in” (expert knowledge) – as drivers of compliance. They find that neither affects voluntary compliance without the other, while together they induce more voluntary compliance than any other combination of policies. This indicates that the reaction to an authority depends on whether that authority is perceived to be legitimate.

Using survey data from taxpayers from three culturally different countries (Austria, Finland, and Hungary), [Gangl et al. \(2020b\)](#) find that coercive power is negatively related to implicit trust and in turn to intended tax compliance. This shows that coercive power's positive impact on tax compliance is undermined if coercive power reduces implicit trust. The study also shows that for all countries, legitimate power positively affects tax compliance intentions only via reason-based trust, thus supporting previous findings about the relationship between legitimacy and trust.

Based on a combination of an online and a lab experiment, [Gangl et al. \(2020a\)](#) argues that depending on the perceived interaction history between tax authority and taxpayer, different

policies are needed to build or maintain confidence. They find that in an antagonistic climate, a combination of high coercive and high legitimate power can change the climate to one of confidence. Importantly, however, the same power combination applied in a confidence climate actually erodes this climate. Thus, the strategies and instruments needed to move from an antagonistic or service climate to one of confidence may no longer work - or can even be counter-productive - once a confidence climate has been established and needs to be maintained.

3.2.2. Communication: Nudging, persuasion, and deterrence

There is abundant evidence that taxpayers' compliance behaviour can be affected directly through communication initiatives by the tax authority. Several factors can affect behaviour when emphasized in communication, including risk and consequences of detection, tax morale, fairness, reciprocity and the benefits for society of being compliant. At the same time, research shows that for such interventions to have the desired effect, the details of their design are crucial.

Simple letters and reminders can affect voluntary compliance. In a study of the impact of simplification, deterrence and tax morale as content elements in letters on tax compliance, [De Neve et al. \(2020\)](#) show that simplifying communication substantially increases compliance. Through a series of natural field experiments, they demonstrate, among other things, that simplified tax filing reminders increase subsequent tax filing by 8% (relative to the standard reminder). For late taxpayers, the simplified reminder increases subsequent tax payment by as much as 23%. The authors conclude that simplification is far more cost-effective than standard enforcement measures, yielding a potential for substantial reductions in enforcement costs.

[Bott et al. \(2020\)](#) also experiments with varying the content of letters to taxpayers to study the drivers of tax compliance with special emphasis on the role of tax morale. They conduct a large-scale randomized field experiment based on a sample of more than 15,000 taxpayers in Norway who were likely to have misreported their foreign income. The study shows that both moral suasion (arguments evoking tax morale) and perceived detection probability affect taxpayer behaviour: While the moral letter mainly works in *depth* (the degree of the responding taxpayer's change in behaviour), the detection letter works in *breadth* (the number of taxpayers who change behaviour).

Two natural field experiments conducted by [Biddle, Fels & Sinning \(2018\)](#) in collaboration with the Australian Taxation Office (ATO) suggests that businesses are responsive to certain types of nudges. The authors find that changing the phone script of desk auditors and simplifying the subsequent follow-up letter reduced the proportion of default assessments raised by the ATO by an impressive 69 percent.

Including social norm messages in standard reminder letters may also increase voluntary compliance. [Hallsworth et al. \(2017\)](#) demonstrate this via two large-scale natural field experiments using administrative data from 200,000 taxpayers in the UK, all of whom had to file self-assessment tax returns. The study shows that the framing of information increases payment rates for overdue tax up to 70 days after the intervention, indicating that

incorporating moral costs (relating to social norms, public services and/or moral duty) into taxpayer communication can influence voluntary compliance at low economic cost to the tax authority.

In a non-tax related but rule-compliance-specific scenario, [Apesteguia, Funk & Iriberry \(2013\)](#) study how to promote compliance with rules that carry low penalties and test the effect of sending email messages (reminders) with different contents to users of all public libraries in Barcelona. The underlying motivation is that if reminders are effective when the penalty of non-compliance is low, effects are likely to be present in other cases where penalties are more substantial (e.g., tax compliance). The study shows that a general reminder of the users' duty is effective in promoting rule compliance and that adding other contents to the general reminder – such as social motivation (functioning/purpose of compliance), a reminder about previous non-compliance of the recipient and/or a reminder about the penalty – does not increase compliance significantly compared to just the general reminder. The study also shows that the reminders provoked the biggest reactions in those recipients who complied least in the past — however, even the “good” (i.e., compliant) recipients reacted positively, indicating that the reminders did not crowd-out intrinsic motivation.

Also in the context of simple reminders but with an additional element of social pressure, [Battiston & Gamba \(2016\)](#) focus on the compliance of shop sellers with the legal obligation of releasing tax receipts for each sale. They conduct a field experiment among bakeries in Italy where, according to the authors, a considerable gap between legal obligation and actual behaviour is known to exist. The social pressure treatment applied is an explicit request for a receipt when this is not released. The study finds that a single request for a receipt causes a 17 percent rise in the probability of a receipt being released for a sale occurring shortly thereafter, causing on average more than two receipts to be released without the customer explicitly asking for it. The authors also find strong evidence of persistence in such compliance decisions.

However, like audits, letters and reminders may also backfire with already compliant taxpayers. [Castro & Scartascini \(2015\)](#) conducts a field experiment in a municipality in Argentina targeting property tax taxpayers' beliefs regarding the levels of enforcement, reciprocity, and peer-effects of the tax system. Taxpayers who received the deterrence message were almost 5 percentage points more likely to comply compared to the control group. The reciprocity and peer-effects messages also increased the probability of compliance for some taxpayers, but those who actually complied in the past tended to react negatively to information about other people's compliance levels. This shows that not only “harder” instruments (e.g., audits – *see research related to guideline #4*) but also “softer” approaches such as peer-effect nudging can backfire with intrinsically motivated, compliant taxpayers.

Descriptions of tax authorities' power and trustworthiness in brochures or news media can have behavioural effects. Through a series of experiments, [Hartl et al. \(2015\)](#) investigate whether tax evasion is influenced by the *mere description* of an authority wielding coercive power, legitimate power, and coercive and legitimate power combined. The study shows that participants' beliefs regarding tax authority's power significantly shape compliance decisions – a result that holds both for coercive and legitimate power and for the two types combined. On the other hand, objective information about fine rates had no effect. Thus, the study indicates that descriptions of the tax authority —for example in information brochures and media reports— can actually affect tax compliance via taxpayers' beliefs.

In a similar vein, [Kasper, Kogler & Kirchler \(2015\)](#) examines how descriptions of tax authorities' attributes of trust and power featured in the media affects intended tax compliance. Conducting a survey-based experiment where participants are exposed to *real* excerpts from newspaper coverage on tax issues, the authors find that both trust and power attributes affects compliance intentions. By using actual newspaper excerpts about a real tax authority (the Austrian) instead of fictitious information about a fictitious tax authority, this experiment improves on the external validity compared to many other experiments and thus strengthens the evidence of the relationship between trust, power and compliance.

Mass media campaigns may improve both intended and actual compliance. [Cyan, Koumpias, Martinez-Vazquez \(2017\)](#) investigates the effects of mass media campaigns on individual attitudes towards tax compliance using survey data from Pakistan. Specifically, the study examines the effectiveness of campaigns in the TV and national newspapers used by the Federal Board of Revenue (FBR) of Pakistan to increase awareness, tax filing, and, ultimately, tax morale. Survey data was collected in 2014 immediately after these mass media campaigns by the FBR. The authors find improved perceptions towards tax compliance for respondents exposed to both the TV and the newspaper advertisements. Perhaps surprisingly, newspaper ads were more effective, so the choice of media platform can be important.

In a related study, [Koumpias & Martinez-Vazquez \(2019\)](#) examines the effect of mass media campaigns on income tax filing based on survey data collected on tax eligible individuals soon after the filing deadline. They find that exposure to newspaper ads providing information on tax eligibility increased income tax filing, while ads informing about the tax filing deadline or the financial penalties of not filing —interestingly— had no effect. TV ads using moral suasion and portraying self-employed taxpayers improved tax filing among the self-employed but not among the broader survey population. Like the study by [Hallsworth et al. \(2017\)](#), this demonstrates that the behaviour of *self-employed* taxpayers —who are important in terms of compliance because they have real opportunities to evade (see [Kleven et al. 2011](#))— can be affected by tax authorities via other means than audits.

3.2.3. Respectful treatment: The importance of fairness

Fairness and mutual understanding matters to taxpayers – and for compliance. In general, procedural fairness in the tax administration's treatment seems to matter to taxpayers. Based on a nation-wide survey of Australians' views of their tax system and its administration (the *Community Hopes, Fears and Actions Survey*), [Braithwaite \(2003\)](#) documents that in terms of overall fairness, perceptions of insufficient procedural fairness from the tax office is an important factor along with economic self-interest and satisfaction with the nation's democracy.

However, not only does fairness matter to taxpayers, it also affects compliance. Using data from Australia as well, [Kirchler, Niemirowski & Wearing \(2006\)](#) demonstrate that the degree to which taxpayers and tax officials share beliefs and evaluations about a range of issues (including tax law complexity, tax mentality, ethics and social norms and judgments of tax officers and tax preparers' support) is related to taxpayer compliance. This is important, because it indicates that procedural fairness matters: psychological theories propose that parties' mutual view of

the central issues at hand shapes the quality of an interaction, and that the quality of interaction, in turn, is a highly important aspect of perceived (and actual) procedural fairness.

Respectful treatment in audits affects subsequent compliance. While respectful treatment appears valuable in itself also when it comes to audits, research indicates that it also affects subsequent compliance of audited taxpayers. [Frey & Feld \(2002\)](#) shows that taxpayers' willingness to pay their taxes (known as *tax morale*) is supported, or even raised, when tax officials treat them with respect in cases of less than full compliance. Measuring different approaches to taxpayer treatment via a survey sent to the tax authorities of the 26 Swiss cantons, the authors also find that when tax officials approach taxpayers instrumentally, forcing them to pay their dues, taxpayers tend to respond by actively trying to avoid taxation.

Based on a survey of 652 taxpayers who has experienced enforcement from the Australian Taxation Office, [Murphy \(2008\)](#) shows that feelings of resentment can mediate the relationship between disapproval and compliance. Specifically, the taxpayer's perception of the enforcement experience (stigmatic or reintegrative) can influence feelings of resentment, which then affects how punishment influences subsequent compliance behaviour.

Procedural fairness is important – but affect compliance systematically only for some types of taxpayers. [Gobena & van Dijke \(2016\)](#) explores the moderating roles of legitimate and coercive power held by the tax authority in the relationship between procedural fairness, trust in the tax authority, and voluntary tax compliance. Via a survey among Ethiopian business owners, they test if procedural fairness fosters voluntary tax compliance – particularly when legitimate power of the tax authority is low and when coercive power of the authority is high, i.e. in an antagonistic tax climate. Results confirm this prediction, and the authors argue that the moderating role of legitimate power on voluntary tax compliance seems to occur because procedural fairness leads to voluntary compliance via cognition-based trust. In other words: (more) procedural fairness leads to (more) cognition-based trust, which in turn leads to (more) voluntary compliance – but only for those taxpayers who have an antagonistic relation (low perceived legitimate power, high perceived coercive power) to the tax authority.

The authors explore this result further in another study ([Gobena & van Dijke 2017](#)), where they investigate how identification with the nation interact with procedural fairness and trust in the tax authority in predicting voluntary tax compliance. The study is conducted as a comparative analysis by including taxpayers in a developing country (Ethiopia) and in a developed country (the US). It turns out that the relationship between procedural fairness and voluntary tax compliance that [Gobena & van Dijke \(2016\)](#) found particularly among citizens with low trust in the tax authority only holds for citizens who weakly identify with the nation. Overall, this means that the finding about procedural fairness leading to voluntary compliance is not universal, but limited to citizens with an *antagonistic relationship* to the tax authority and a *weak national identity*.

Positive rewards may sometimes work – but only under specific conditions. Although rewarding honest taxpayers to increase compliance sounds good on paper, the answer from empirical research remains unclear:

- On the one hand, [Bazart & Pickhardt \(2011\)](#) shows via a lab experiment that positive rewards in the form of individual lottery winnings for fully compliant taxpayers can have a strong positive impact on tax compliance, as they pull potential tax evaders into the

compliant taxpayer domain. However, the authors note that this holds especially for men and in economies with a low rate of tax compliance.

- On the other hand, [Brockmann, Genschel & Seelkopf \(2016\)](#) find that reward treatments significantly affected tax behaviour in their experiment – but not in a straightforward manner: Women altered their behaviour as expected and complied somewhat more, while men reacted strongly in the opposite manner and evaded a much higher percentage of taxes than under the baseline.
- In addition, [Fochmann & Kroll \(2016\)](#) find that rewards, perhaps surprisingly, have a negative overall effect on tax compliance, and also that rewards affect the decision of taxpayers asymmetrically. Specifically, rewards have either no effect (for those who are rewarded) or a negative effect (for those who are not rewarded) on tax compliance.

[Farrar, Hausserman & Rennie \(2019\)](#) investigate the joint influence of financial incentives and revenge (an intrinsic motivation) on taxpayers' intentions to report others' tax fraud in an experiment with 210 taxpayers from the United States. The authors argue that previous whistleblowing studies investigating crowding effects have not manipulated intrinsic motivation, which makes it difficult fully to assess whether that intrinsic motivation has been crowded in or out by an incentive. They find that having a revenge motive significantly increases tax fraud reporting intentions and that the same goes for receiving a financial reward. It turns out there is a weak crowding-out effect from a financial reward on a revenge motive, and that moral obligation mediates the relation between revenge and tax fraud reporting intentions. In sum, however, offering a financial reward to a whistle-blower with a revenge motive is still effective.

Emotions seem to be important, too. Recently, researchers have begun to study the role of emotions in tax situations, investigating if certain types of emotions have systematic effects on compliance. For example, [Maciejovsky, Schwarzenberger, Kirchler \(2012\)](#) conducts a series of experimental studies to investigate how emotions affect tax ethics. The study shows that affective priming and the ease with which tax information is retrieved moderate tax ethics, and that the relative effectiveness of deterrence —such as audit probabilities and tax fines— is moderated by affect.

[Enachescu et al. \(2019a\)](#) show that tax decisions elicit different emotions, which do seem to have an impact on compliance. Specifically, the researchers find that both *positive* emotions in general and specific *negative* feelings of self-blame, anger, and fear are important: Both self-employed and employed participants reported higher compliance intentions after having positive experiences with the tax authorities as compared to negative ones, and these effects were mediated in different ways by anger-related, self-blame-related, and positive emotions.

Thus, while the study of the significance of emotions in tax situations has yet to yield clear policy recommendations, they do support the general idea of a multifaceted policy approach that emphasizes not only enforcement, but also cognitive and affective aspects of human behaviour.

3.2.4. Transparency and predictability by reducing complexity and uncertainty

Higher service quality and lower tax complexity reduces evasion. A lack of transparency and predictability in the tax system can be bad for taxpayers' willingness to comply as well as create opportunities for evasion that would not otherwise be there under less complicated and uncertain conditions:

- [Hanousek & Palda \(2004\)](#) shows that a higher perceived quality of government services is related to a lower frequency of tax evasion.
- [Cummings et al. \(2009\)](#) also find that tax compliance increases with individual perceptions of good governance and, additionally, that responses to enforcement are enhanced by these perceptions.
- [Richardson \(2006\)](#) finds that complexity has the strongest impact on tax evasion compared to other important factors like education, income source, fairness and tax morale.
- [Fochmann & Kroll \(2016\)](#) analyze how the redistribution of tax revenues influences tax compliance behaviour by applying different reward mechanisms – in other words, the authors test whether the perceived effectiveness of the tax system (and political system) in redistributing tax revenues towards desirable purposes make taxpayers reciprocate with compliant behaviour.

Reducing uncertainty through information increases voluntary compliance. Through a lab experiment, [Alm, Cherry, Jones & McKee \(2010\)](#) looks into differences in compliance between a classic “enforcement” paradigm and a revised “service” paradigm, where participants are offered various kinds of assistance or “services” to help them figure out their tax liabilities. While the risk of being audited is constantly present, the experiment shows that uncertainty reduces the degree of both filing and reporting compliance while information provided by the tax authority to reduce uncertainty has a positive impact on both.

[McKee, Siladke & Vossler \(2018\)](#) also investigates effects of reducing uncertainty through tax administration assistance and services in the lab. In this experiment, variations in both the level of liability uncertainty and the cost and quality of information services are tested on a diverse set of participants comprising both students and non-students (whereas most social science lab experiments rely on students only). Results show a strong and positive effect of information services on tax compliance, and that without information services, being audited actually means reporting a *lower* tax liability afterwards.

Information reduces unintentional mistakes and compliance costs. Taking the study of information effects to the field, [Kosonen & Ropponen \(2015\)](#) shows that providing information about the tax code significantly helps firms to avoid making unintentional mistakes in their tax filing. They do so via a survey experiment, where information about VAT rules are mixed in between attitude questions in the version sent to the treatment group, while the control group receives the same survey only without these pieces of information.

Using survey data, [Eichfelder & Kegels \(2014\)](#) study how authority behaviour affects the burden of firms in complying with tax regulations. They find that the most cost-relevant aspect seems to be the timely provision of helpful information – more so than problems with contact or contradictory statements from officials. And most importantly, they find that a customer-unfriendly administration increases the burden of complying with the tax law by about 27%.

3.2.5. Trust-enhancing digital government services: Challenges and opportunities

Taxpayers' trust in tax authorities are both challenged and potentially strengthened through digitalisation. The transformation of public service provision into citizen self-service creates both new opportunities and challenges for public administration in general. This is no less true for tax authorities in particular. In recent years, public administration research has begun exploring how digital services provision raises new types of concerns for public sector agencies (see, e.g., [Prins, Raab & Keymolen 2012](#)), though systematic empirical evidence on the comparative merits of various digital solutions is at this point still scarce.

- While new technologies such as data mining, machine learning, sensor technology, and service automation may lead to benefits through further digitalizing service provision and furthering the democratic potential of digital government, the very same technologies could also be used by authorities to restrict, control, and conduct surveillance of citizens ([Lindgren et al. 2019](#)).
- Tax authorities also need to be aware that providing digital services to citizens can support but not fully replace the need for in-person communication – a fact made even more salient by the covid-19 pandemic ([Alm et al. 2020](#)). At the same time, digital services and capabilities are essential for any tax authority in a globalized world, and the constantly increasing importance of digitalisation for public administration in general and tax authorities in particular show no signs of stopping in the near future.
- Furthermore, the productive potential is undeniable – not only from a taxpayer perspective, but also seen from the tax authority: In a recent Deloitte survey of 1200 government officials from more than 70 countries, 78 percent of respondents indicated that digital capabilities enables their employees to be more responsive to citizens' needs and also foster trust in government and public services ([Jeppesen et al. 2020](#)).

Digital services can increase trust, but scepticism and privacy concerns remains a factor for many citizens. [Gracia & Ariño \(2015\)](#) study the extent to which e-government initiatives affect trust in public administration via a web survey of 448 citizens who used public e-services in Spain. They find that the perceived quality of public e-services indeed does have a positive effect on trust in the public administration. However, the study also shows that communication campaigns (i.e., to promote the benefits and use of e-government) only influence trust in the public administration for citizens with a favourable attitude towards e-government.

To affect trust in public administration, e-government initiatives must themselves be trustworthy. [Janssen et al \(2018\)](#) conducts a review of research on the subject within the public administration and information systems literatures in order to identify relevant variables influencing – and depending on – the trustworthiness of digital government. They find that among 19 relevant variables identified, a great majority are drivers of digital trustworthiness, many of which arguably need careful attention by tax authorities in designing digital solutions and services: integrity, trust in government, trust in technology, transparency, responsiveness, competence, accountability, privacy concerns, perceived security, perceived risk, system quality, service quality, satisfaction, perceived ability to use, perceived prior knowledge, and

disposition to trust. Here, too, factors like privacy concerns, security and risk are part of the mix along with other relevant aspects related to the potential benefits of e-services.

Trustworthiness of e-services are important, but so is the citizen's digital skills. [Schneider et al. \(2020\)](#) conducts a controlled experiment with 161 participants of how two types of nudging – default options and popularity signals – affects users' adoption of electronic identification (eID). They find that both nudges increase eID adoption, but it turns out that default options are a double-edged sword since they simultaneously fuel privacy concerns towards the government. This negative effect attenuates the desired effect of setting the default option to “yes” on eID adoption. However, the study also shows that this challenge can be mitigated by adding social proof cues, i.e. information about other users' take-up of the eID.

[Rodriguez-Hevia, Navio-Marco, Ruiz-Gomez \(2020\)](#) examine which factors influence European citizens in their adoption of e-government services performing regression analysis on a simple random sample of 15434 respondents taken from a 2016 *EU survey on ITC usage in households and by individuals*. They find that especially digital skills are an increasingly influential factor, previous experience with simple e-government activities (e.g., obtaining information) being the the most important aspect thereof. Based on their results, the authors conclude that instead of an *access* divide among citizens of the EU, a *skills* divide now seems more and more relevant in terms of e-government services adoption and use across the EU. Thus, e-service quality – and the responsibility of tax authorities and other public agencies in ensuring this through efficient and transparent solutions – is arguably more important than ever.

3.3. Tax authorities' relations with third parties

This section covers empirical findings related to the interaction between tax authority and third parties. The studies reviewed here are related to guideline no. 7. *Work proactively and in cooperation – make sure that third parties are part of your trust-based strategy.*

Third-party reporting and income withholding are essential for compliance. Third-party reporting – where employers, banks, pension or investment funds report taxable income earned by individuals directly to the tax administration – is crucial for securing tax revenue in developed economies and has been an integral part of the tax system in many countries for years. Combined with employers' withholding of employees' income, third-party reporting can reduce the degree of non-compliance for personal income tax to only about one (1) percent ([IRS 2019](#), [Lederman 2010](#)) by virtually eliminating the opportunity to evade ([Kleven et al 2011](#)). In a sense, such a regime dissolves the distinction between *voluntary* and *enforced* compliance by dramatically narrowing the scope of choice in the taxpaying situation, establishing *automated* compliance as a new default.

Tax practitioners influence compliance decisions – and are susceptible to actions and communication by tax authorities. As an intermediary between taxpayer and tax authority, the tax practitioner faces a constant dilemma by being both an advocate for the taxpayer and fulfilling a duty towards the tax system ([AICPA 2009](#)). Research on the interaction between tax practitioners – i.e., tax auditors and tax professionals – and their clients documents the important role of the former in shaping compliance decisions of the latter. However, research

also shows that practitioners are to a large extent open for persuasion by tax administration actions and conduct.

- Based on a survey of 1373 tax practitioners selected from the Australian Taxation Office's database, [Wurth & Braithwaite \(2017\)](#) argues that tax practitioners could be divided into three main categories or 'clusters' (plus a residual group of outliers): The *duteous*; the *contingent* (i.e. conditionally cooperating); and the *aggressive*. Comprising 22 percent, 63 percent and 14 percent, respectively, the fact that the middle group of *contingents* is by far the largest suggests considerable potential for tax authorities to affect the behaviour of tax practitioners by way of action, communication and conduct in general.
- [Bobek et al. \(2019\)](#) studies contentious interactions between tax professionals and their clients from the professional's side via two surveys including a total of 229 tax professionals. They find — among other things— that more than two-thirds of the time, tax professionals are able to persuade clients to change their original position, partially or fully.
- Examining the survey results from a sample of 143 tax professionals from various organizational and corporate backgrounds, [Blanthorne, Burton & Fisher \(2012\)](#) show that the ability of tax professionals to reason morally influence their reporting decisions irrespectively of what the client prefers. They find that as the level of moral reasoning increases, the aggressiveness of the reporting position decreases. Combined with the potential for tax authorities to affects tax professionals, this opens up prospects for trust-based engagement with tax professionals.

Public sector agencies depend on each other in building and maintaining citizens' trust. Trust in the tax authority and tax compliance is not only affected by the tax system and the tax authority's administration of tax laws. The operation of the public sector in general matters, too. As documented with respect to the dynamics of trust (see guideline #6), trust in government in general can influence taxpayers' willingness to comply by affecting trust in the tax authority specifically. Perhaps not surprisingly, it appears that there may well be significant spillover effects from trust in public sector institutions in general to trust in the tax authority.

- With respect to trust in government, [Jimenez & Iyer \(2016\)](#) find that trust in government has a significant influence on both perceived fairness of the tax system and compliance decisions based on a sample of taxpayers in the USA.
- Along similar lines, [Güzel, Özer & Özcan \(2019\)](#) find that trust in government in general is systematically linked to tax justice perceptions and tax compliance among independent accounting professionals in Turkey.
- Both studies support an earlier result in the literature found in a study by [Scholz & Lubell \(1998\)](#), who find that trust in government significantly increase the likelihood of tax compliance even when effects of an internalized sense of duty to obey laws and the fear of getting caught evading taxes are also accounted for.

3.4. Inside the tax authority: Organizational culture and management

This section covers aspects and themes related to the inner workings of the tax authority with potential relevance for trust-based approaches to compliance. Subsection [3.4.1](#) is related to

guideline no. 8. *Focus on how organisational behaviour supports trust*, and subsection [3.4.2](#) is related to guideline no. 9. *Performance management with a trust-based approach*.

3.4.1. Trust in organisational culture and practice

Organisational culture matters – and is difficult to change. [Enachescu et al. \(2019b\)](#) study the implementation of Horizontal Monitoring (HM) in Austria – a cooperative compliance project representing a shift in the prevailing command-and-control paradigm towards enhanced cooperation between taxpayers and tax authorities. Perceptions and experiences among tax officials and employees in participating companies were monitored over a period of three years, including both officials and employees who were directly involved in the project and officials and employees who were not. The authors find that employees of companies taking part in the project were highly positive – whether they were directly dealing with HM procedures in their company or not.

For tax officials, however, those who were directly involved were significantly more positive than those not directly involved, and the latter group remained considerably more skeptical throughout the evaluation period. Thus, the study illustrates that a shift towards cooperative compliance regimes requires a new mindset within a tax authority, which may appear difficult to reconcile with the prevailing culture for many tax officials trained in a more classical, deterrence-based tradition. This indicates – not surprisingly – that changing the prevailing mindset and culture within a tax authority may take time.

Administrators' trust in citizens affect citizen behaviour. While citizens' trust in administrators has received a lot of attention in research, the opposite relation – administrators' trust in citizens – has received only marginal attention. [Yang \(2005\)](#) has characterized this as a 'missing link' in the field of trust research, motivating the examination of the factors that influence public administrators' trust in citizens and the relevance of that trust to citizen involvement efforts in citizen participation programs – i.e., a voluntary, prosocial form of behaviour not unlike voluntary compliance in taxation. Based on a survey of 320 public administrators, the study shows that administrators tend to hold a neutral view of citizens – neither trusting nor distrusting – and that public administrators' trust in citizens is positively related to proactive citizen involvement efforts. The author concludes that the results indicate that public administrators have to be trustworthy in order to win citizens' trust.

Responsive regulation is possible, but consistency in practice is crucial. Research on the daily work of street-level bureaucrats at the front lines of regulatory enforcement has shown that inspectors do indeed utilise different enforcement styles. [May & Wood \(2003\)](#) study the impact of inspectors' differing enforcement styles on compliance in the context of municipal enforcement of building regulations. While the study finds no direct effect of differing enforcement styles on compliance, enforcement styles do influence homebuilders' knowledge of rules and the degree of cooperation between homebuilders and inspectors. Thus, the authors conclude that consistency in enforcement style across inspectors is crucial, because inconsistencies tend to immunize homebuilders to stylistic differences among inspectors. This indicates that the recently much revered idea of 'responsive regulation' is highly sensitive to consistent application among the front-line bureaucrats who are to implement this regime in practice, because inconsistencies undermine regulatees' understanding of rules and the development of shared expectations concerning compliance.

3.4.2. Trust and performance management: A contradiction in terms?

Performance management was originally founded on the opposite of trust. While trust as a guiding principle may be intuitively appealing, it is not the norm within the public sector. [Van de Walle & Six \(2011\)](#) argues that distrust is often the guiding principle in institutional design and in the operation of public services, pointing to the fact that public officials often have to give account of their work through elaborate accountability processes. On the citizen's side, they have to prove they are not cheating on benefits or taxes. A little over 20 years ago, [Power \(1999\)](#) even argued that the rise of an 'audit society' demonstrated the pervasiveness of attitudes of distrust within modern public administration. All of this has been linked to the development of performance management within the public sector in developed economies based on the principles of *new public management* ([Van de Walle 2010, 2013](#)).

Thus, a turnaround based on rethinking the paradigm seems necessary. Thus, the question remains as to how performance management can be shifted towards a more trust-based approach – in a way that affect outcomes in a desirable way. According to [Yang & Holzer \(2006\)](#), researchers has found it difficult to empirically demonstrate the link between government performance and citizen trust in government and argue that this is rooted in the difficulty of defining and measuring government performance meaningfully. To be improved, current performance-measurement practice must be shifted towards measuring what citizens really care about – incorporating both political responsiveness, institutional design, and citizen input – and be more systematic and integrated across public agencies.

A shift towards trust-based management and steering concepts is possible – and happening. [Halligan & Bouckaert \(2009\)](#) argues that a development within performance management is going on, in which there is a move away from the use of indicators based on a *command and control* approach to a different approach of using performance management as an instrument partly based on mutual trust. [Bouckaert \(2011\)](#) argues that this is visible throughout the public sector in developed economies.

[Choudhury \(2008\)](#) argues that in public administration, compared with other leading concepts such as legitimacy, accountability, efficiency, discretion, responsiveness, and public participation, a focus on trust is quite recent but increasing. In working with increasing the focus on trust, Choudhury argues for the importance in seeing trust not only as an important value in itself but also as a means for resolving conflicts of priority between organisational values – for example, balancing discretion with accountability.

Thus, the idea that trust between actors in collaborative arrangements is associated with a long list of virtues, such as better performance, is no longer new. [Klijn, Edelenbos, & Steijn \(2010\)](#) study governance networks characterized by complex interaction and decision making, examining if trust influence the outcomes of environmental projects and if active network management improve the level of trust in networks. Based on a survey of 337 participants involved in environmental projects, their results indicate that trust does matter for perceived outcomes and that network management strategies enhance the level of trust.

4. Concluding remarks

The paper has presented an overview of relevant empirical findings in social science research on tax compliance from the perspective of a tax administration aiming to work with trust-based approaches to tax compliance. As such, the literature review in this paper builds on existing surveys, acknowledging the importance of both trust and power for taxpayer behaviour. The literature review constitutes a foundation of knowledge supporting the nine guidelines of the *Trust and Compliance Project* carried out by the *Fiscalis Project Group no. 98*. The diversity and breadth in scope of the project and its guidelines means that the literature review prioritizes breadth over depth and becomes selective in nature in its treatment of themes, issues and subfields.

The empirical findings with respect to fundamentals of taxpayer behaviour can be summarized as follows:

- *Tax morale and social norms*: Differences in culture and tax morale are important in explaining different levels of compliance across countries. It also appears that not only are culture and tax morale closely linked, they are also both relatively persistent across borders and generations. Furthermore, research shows that tax morale works both at the individual level – interacting with reciprocity and social norms – and at the firm level, also affecting firms' tax compliance.
- *Trust*: Trust in government matters for compliance. So does trust in other taxpayers as well as trust in the tax authority itself. Given the predictions of many different theories in various disciplines of social science, these findings are not surprising. Research also shows that crises are unlikely to reduce the importance of trust for compliance. Measuring trust, however, is tricky – making things difficult for tax authorities when gathering knowledge on taxpayers' trust in the tax authority and in other taxpayers.

In terms of tax authorities' engagement with taxpayers, the paper uncovers a range of relevant empirical findings that can be summarized as follows:

- *Power, trust, and the dynamics of enforced and voluntary compliance*: In general, research shows that enforcement remains an important tool for tax authorities but also that enforcement must be done right to have overall positive effects on compliance. It turns out that power, if perceived as coercive, may actually reduce trust and voluntary compliance. Thus, striking the balance between power and trust is crucial. Research also demonstrates that retributive justice is important for voluntary compliance, and that different tax climates require different enforcement strategies.
- *Communication*: Overall, research shows that in communicating with taxpayers, tax authorities can make use of many different kinds of persuasion and nudging techniques and positively affect the likelihood of compliance via appeals to both morals, norms and deterrence. Thus, simple letters and reminders can affect voluntary compliance, but like audits, they may also backfire with already compliant taxpayers. Research also shows that descriptions of tax authorities' power and trustworthiness in brochures or news media can have behavioural effects, and that mass media campaigns may improve both intended and actual compliance.

- *Respectful treatment*: The importance of fairness and mutual understanding between taxpayer and tax authority for taxpayer compliance is a core result in the empirical literature. Thus, it turns out that respectful treatment in audits affects subsequent compliance, and that procedural fairness in general is important. However, procedural fairness affect compliance systematically only for some types of taxpayers. Research also shows that positive rewards may sometimes work under the right conditions, and that emotions experienced by the taxpayer in the tax situation can affect compliance.
- *Transparency and predictability*: Reducing complexity and uncertainty faced by the taxpayer can positively affect compliance. Thus, research shows that higher service quality and lower tax complexity reduces evasion, and that reducing uncertainty through information increases voluntary compliance. Also, research confirms the intuitive idea that information can reduce unintentional mistakes and compliance costs for taxpayers.
- *Digitalisation*: Digital government services can be trust-enhancing, but maintaining and strengthening taxpayer trust through digital service poses a challenge to tax authorities. Thus, research shows that digital services can increase trust, but also that scepticism and privacy concerns remains a factor for many citizens. It turns out that trustworthiness of e-services are indeed important as would be expected, but also that taxpayers' digital skills are crucial.

Turning to tax authorities' relations with third parties, the following overall findings emerge:

- By effectively removing the element of decision, third-party reporting and income withholding are essential in maintaining high levels of compliance. Research also shows that tax practitioners do influence compliance decisions, but also that they are susceptible to actions and communication by tax authorities. Finally, research confirms that trust in tax authorities is closely related to trust in authorities in general. Thus, public sector agencies partly depend on each other in building and maintaining citizens' trust.

Finally, looking inside the tax authority and focusing on organizational culture and management, the following empirical findings can be summarized:

- *Organisational culture and practice*: Organisational culture matters for how officials approach citizens, and it is difficult to change. Thus, research documents that administrators' trust in citizens affect citizen behaviour, and that responsive regulation is indeed possible, but that consistency in practicing such an approach is crucial.
- *Performance management*: Since performance management was originally founded on the opposite of trust in 'new public management' regimes, it seems that a turnaround based on a rethinking of the paradigm seems necessary for tax authorities when attempting to shift performance management in a trust-based direction. Research indicates that a shift towards trust-based management and steering concepts is indeed possible – and that such developments are already happening among tax authorities.

Taken together, these findings yield some implications from a tax administration perspective. On one hand, it is clear that the empirical tax compliance literature is rich in evidence on taxpayer behaviour. Behavioural factors and micro-foundations are covered quite well by research. At the same time, more and more tax authorities gather, analyse and incorporate behavioural

insights in practice, specific units or departments to this end no longer being a rare sight. On the other hand, while intra-organisational matters are well researched when it comes to public administration in general, evidence becomes scarce when focusing on tax authorities and the relationships between their intra-organisational matters and taxpayers' compliance in particular. While this indicates an obvious potential for future research, the responsibility falls on tax authorities themselves to increase the base of valid, empirical knowledge. To this end, a greater use of field experiments based on randomized controlled trials appears as one of the most promising avenues for tax authorities.

References

- AICPA (2009). *Statements on Standards for Tax Service*. American Institute of Certified Public Accountants, Inc. New York, NY.
- Akerlof, George A. (1991). Procrastination and Obedience. *American Economic Review, Papers and Proceedings* 81(2): 1-19.
- Akerlof, George A. (2000). Economics and Identity. *Quarterly Journal of Economics* 115(3): 715-53.
- Allingham, M. G. & Sandmo, A. (1972). Income Tax Evasion: A Theoretical Analysis. *Journal of Public Economics* 1: 323-338.
- Alm, J. (2012). Measuring, explaining, and controlling tax evasion: Lessons from theory, field studies, and experiments. *International Tax and Public Finance* 19(1): 54-77.
- Alm, J. (2019). What Motivates Tax Compliance? *Journal of Economic Surveys* 33(2): 353-388.
- Alm, J. & McClellan, C. (2012). Tax morale and tax compliance from the firm's perspective. *Kyklos* 65(1): 1-17.
- Alm, J. & Torgler, B. (2006). Culture differences and tax morale in the United States and in Europe. *Journal of Economic Psychology* 27: 224-246.
- Alm, J., McClelland, G. H., & Schulze, W. D. (1992). Why do people pay taxes? *Journal of Public Economics* 48: 21-38.
- Alm, J., Sanchez, I., & De Juan, A. (1995). Economic and noneconomic factors in tax compliance. *KYKLOS* 48: 3-18.
- Alm, J., Cherry, T., Jones, M. & McKee, M. (2010). Taxpayer information assistance services and tax compliance behavior. *Journal of Economic Psychology* 31: 577-586.
- Alm, J., Blaufus, K., Fochmann, M., Kirchler, E., Mohr, P., Olson, N.E. & Torgler, B. (2020). Tax Policy Measures to Combat the SARS-CoV-2 Pandemic and Considerations to Improve Tax Compliance: A Behavioral Perspective. WU International Taxation Research Paper Series No. 2020-10, available at SSRN: <https://ssrn.com/abstract=3692370>.
- Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature* 36(2): 818-860.
- Apestequia, Funk & Iriberry (2013). Promoting rule compliance in daily-life- Evidence from a randomized field experiment in the public libraries of Barcelona. *European Economic Review* 64: 266-284.
- Bame-Aldred, C.W., Cullen, J.B., Martin, K.D. & Parboteeah, K.P. (2013). National culture and firm-level tax evasion. *Journal of Business Research* 66(3): 390-396.
- Batrancea, L., Nichita, A., Olsen, J., Kogler, C., Kirchler, E., Hoelzl, E., Weiss, A., Torgler, B., Fooker, J., Fuller, J., Schaffner, M., Banuri, S., Hassanein, M., Alarcón-García, G., Aldemir, C., Apostol, O., Weinberg, D.B., Batrancea, I., Belianin, A., Gómez, F.d.J.B., Briguglio, M., Dermal, V., Doyle, E., Gcabo, R., Gong, B., Ennya, S., Essel-Anderson, A., Frecknall-Hughes, J., Hasanain, A., Hizen, Y., Huber, O., Kaplanoglou, G., Kudła, J., Lemoine, J.E., Leurcharusmee, S.,

- Matthiasson, T., Mehta, S., Min, S., Naufal, G., Niskanen, M., Nordblom, K., Öztürk, E.B., Pacheco, L., Pántya, J., Rapanos, V., Roland-Lévy, C., Roux-Cesar, A.M., Salamzadeh, A., Savadori, L., Schei, V., Sharma, M., Summers, B., Suriya, K., Tran, Q., Villegas-Palacio, C., Visser, M., Xia, C., Yi, S. & Zukauskas, S. (2019). Trust and power as determinants of tax compliance across 44 nations. *Journal of Economic Psychology* 74: 102191.
- Battiston, P. & Gamba, S. (2016). The impact of social pressure on tax compliance: A field experiment. *International Review of Law and Economics* 46: 78-85.
- Bazart, C. & Pickhardt, M. (2011). Fighting Income Tax Evasion with Positive Rewards. *Public Finance Review* 39(1): 124-149.
- Becker, G.S. (1968), Crime and Punishment: An Economic Approach. *Journal of Political Economy* 76: 169-217.
- Bergman, M. (2009). *Tax Evasion and the Rule of Law in Latin America*. University Park, PA: University of Pennsylvania Press.
- Biddle, N., Fels, K.M. & Sinning, M. (2018). Behavioral insights on business taxation: Evidence from two natural field experiments. *Journal of Behavioral and Experimental Finance* 18: 30-49.
- Blanthorne, C., Burton, H. & Fisher, D. (2012). The aggressiveness of tax professional reporting: Examining the influence of moral reasoning. William A. Orme Working Paper Series 2011/2012 No. 12, College of Business Administration, University of Rhode Island.
- Bobek, D.D., Dalton, D.W., Hageman, A.M. & Radtke, R.R. (2019). An Experiential Investigation of Tax Professionals' Contentious Interactions with Clients. *Journal of the American Taxation Association* 41(2): 1-29.
- Bornman, M. (2015). The Determinants and Measurement of Trust in Tax Authorities as a Factor Influencing Tax Compliance Behaviour. *Journal of Economic and Financial Sciences* 8(3): 772-789.
- Bott, K., Cappelen, A.W., Sørensen, E.Ø. & Tungodden, B. (2020). You've Got Mail: A Randomized Field Experiment on Tax Evasion. *Management Science* 66(7): 2801-2819.
- Bouckaert, G. (2011). Trust and public administration. Donald C. Stone award lecture. American Society for Public Administration Annual Conference, Baltimore, MD.
- Boyer, P.C., Dwenger, N. & Rincke, J. (2016). Do norms on contribution behavior affect intrinsic motivation? Field-experimental evidence from Germany. *Journal of Public Economics* 144: 140-153.
- Braithwaite, V. (2003). Perceptions of who's not paying their fair share. *Australian Journal of Social Issues* 38(3): 323-348.
- Brockmann, H., Genschel, P. & Seelkopf, L. (2016). Happy taxation: Increasing tax compliance through positive rewards. *Journal of Public Policy* 36(3): 381-406.
- Cagala, T., Rincke, J. & Tuset-Cueva, A. (2019). Does Reciprocity Shape Tax Morale? Evidence from Field-Experimental Variation in Tax Collection Costs. Working Paper, October 21, 2019. Available at: https://www.wirtschaftspolitik.rw.uni-erlangen.de/research/admeff_2019-10-21.pdf.

- Castro, L. & Scartascini, C. (2015). Tax compliance and enforcement in the pampas: Evidence from a field experiment. *Journal of Economic Behavior & Organization* 116: 65-82.
- Choudhury, E. (2008). Trust in administration. *Administration & Society* 40(6): 586-620.
- Cummings, R.G., Martinez-Vazquez, J., McKee, M. & Torgler, B. (2009). Tax morale affects tax compliance: Evidence from surveys and an artefactual field experiment. *Journal of Economic Behavior & Organization* 70: 447-457.
- Cyan, M.R., Koumpias, A.M. & Martinez-Vazquez, J. (2017). The effects of mass media campaigns on individual attitudes towards tax compliance: Quasi-experimental evidence from survey data in Pakistan. *Journal of Behavioral and Experimental Economics* 70: 10-22.
- D'Attoma, J. (2020). More bang for your buck: Tax compliance in the United States and Italy. *Journal of Public Policy* 40: 1-24.
- DeBacker, J., Heim, B.T. & Tran, A. (2015). Importing corruption culture from overseas: Evidence from corporate tax evasion in the United States. *Journal of Financial Economics* 117(1): 122-138.
- De Neve, J-E., Imbert, C., Spinnewijn, J., Tsankova, T. & Luts, M. (2020). How to Improve Tax Compliance? Evidence from Population-wide Experiments in Belgium. Forthcoming in *Journal of Political Economy*. DOI: <https://doi.org/10.1086/713096>.
- Dell'Anno, R. (2009). Tax evasion, tax morale and policy maker's effectiveness. *Journal of Socio-Economics* 38: 988-997.
- Devos, K. (2014). *Factors Influencing Individual Taxpayer Compliance Behaviour*. Dordrecht: Springer.
- Doerrenberg, P. & Peichl, A. (2018). Tax Morale and the Role of Social Norms and Reciprocity: Evidence from a Randomized Survey Experiment. IZA Discussion Paper No. 11714.
- Eichfelder, S. & Kegels, C. (2014). Compliance costs caused by agency action? Empirical evidence and implications for tax compliance. *Journal of Economic Psychology* 40: 200-219.
- Enachescu, J., Olsen, J., Kogler, C., Zeelenberg, M., Breugelmans, S.M. & Kirchler, E. (2019a). The role of emotions in tax compliance behaviour: A mixed-methods approach. *Journal of Economic Psychology* 74: 102194.
- Enachescu, J., Zieser, M., Hofmann, E. & Kirchler, E. (2019b). Horizontal Monitoring in Austria: Subjective representations by tax officials and company employees. *Business Research* 12: 75-94.
- Erard, B., Kasper, M., Kirchler, E., & Olsen, J. (2019). What Influence Do IRS Audits Have on Taxpayer Attitudes and Perceptions? Evidence from a National Survey. *National Taxpayer Advocate Annual Report to Congress 2018*, 77-130.
- Farrar, J., Hausserman, C. & Rennie, M. (2019). The influence of revenge and financial rewards on tax fraud reporting intentions. *Journal of Economic Psychology* 71: 102-116.
- Feld, L. P. & Frey, B. S. (2002). Trust breeds trust: How taxpayers are treated. *Economics of Governance* 3: 87-99.

- Fochmann, M. & Kroll, E.B. (2016). The effects of rewards on tax compliance decisions. *Journal of Economic Psychology* 52: 38-55.
- Frey, B. S. & Feld, L. P. (2002). Deterrence and morale in taxation: An empirical analysis. CESifo Working Paper No. 760.
- Gangl, K., Hofmann, E. & Kirchler, E. (2015). Tax Authorities' Interaction with Taxpayers: A Conception of Compliance in Social Dilemmas by Power and Trust. *New Ideas in Psychology* 37: 13-23.
- Gangl, K., van Dijk, W.W., van Dijk, E. & Hofmann, E. (2020a). Building versus maintaining a perceived confidence-based tax climate: Experimental evidence. *Journal of Economic Psychology* 81: 102310.
- Gangl, K., Hofmann, E., Hartl, B. & Berkics, M. (2020b). The impact of powerful authorities and trustful taxpayers: Evidence for the extended slippery slope framework from Austria, Finland, and Hungary. *Policy Studies* 41(1): 98-111.
- Gangl, K., Hofmann, E.B., Hartl, B. & Kirchler, E. (2015). The Double-Edged Relationship between Coercive Power and Compliance with Public Authority: Evidence from a Representative Sample of Austrian Self-Employed Taxpayers. Working paper, available at SSRN: <https://ssrn.com/abstract=2667630>.
- Gangl, K., Torgler, B., Kirchler, E. & Hofmann, E. (2014). Effects of supervision on tax compliance: Evidence from a field experiment in Austria. *Economics Letters* 123 (2014) 378-382.
- 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: 24-37.
- 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: 1-16.
- Gracia, D.B. & Ariño, L.V.C. (2015). Rebuilding public trust in government administrations through e-government actions. *Revista Española de Investigación de Marketing ESIC* 19(1): 1-11.
- Güzel, S.A., Özer, G. & Özcan, M. (2019). The effect of the variables of tax justice perception and trust in government on tax compliance: The case of Turkey. *Journal of Behavioral and Experimental Economics* 78: 80-86.
- Halla, M. (2012). Tax Morale and Compliance Behavior: First Evidence on a Causal Link. *The B.E. Journal of Economic Analysis & Policy* 12(1) (Advances): Article 13.
- Halligan, J., & Bouckaert, G. (2009). Performance and trust: Developmental paths and optional directions. In: P. G. Roness, & H. Saetren (Eds.). *Change and continuity in public sector organizations: Essays in honour of Per Laegreid*, pp. 257-278. Bergen: Fagbokforlaget.
- Hallsworth, M., List, J.A., Metcalfe, R.D. & Vlaev, I. (2017). The behavioralist as tax collector: Using natural field experiments to enhance tax compliance. *Journal of Public Economics* 148: 14-31.

- Hammar, H., Jagers, S.C. & Nordblom, K. (2009). Perceived tax evasion and the importance of trust. *Journal of Socio-Economics* 38: 238-245.
- Hanousek, J. & Palda, F. (2004). Quality of Government Services and the Civic Duty to Pay Taxes in the Czech and Slovak Republics, and other Transition Countries. *KYKLOS* 57 (Fasc. 2): 237-252.
- Hartl, B., Hofmann, E., Gangl, K., Hartner-Tiefenthaler, M. & Kirchler, E. (2015). Does the Sole Description of a Tax Authority Affect Tax Evasion? The Impact of Described Coercive and Legitimate Power. *PLoS ONE* 10(4): e0123355.
- Hashimzade, N., Myles, G.D. and Tran-Nam, B. (2013). Applications of behavioural economics to tax evasion. *Journal of Economic Surveys* 27(5): 941-977.
- Hofmann, E., Gangl, K., Kirchler, E. & Stark, J. (2014). Enhancing Tax Compliance through Coercive and Legitimate Power of Tax Authorities by Concurrently Diminishing or Facilitating Trust in Tax Authorities. *Law & Policy* 36(3): 290-313.
- IRS (2019). Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2011-2013. Internal Revenue Service: Research, Applied Analytics & Statistics, Publication 1415 (Rev. 9-2019). Washington, DC.
- Janssen, M., Rana, N.P., Slade, E.L. & Dwivedi, Y.K. (2018). Trustworthiness of digital government services: Deriving a comprehensive theory through interpretive structural modelling. *Public Management Review* 20(5): 647-671.
- Jeppesen, G., Price, M., Karlman, K., Kamstrup-Holm, J., Powell, B., Allen, R. & Mills, A. (2020). *Building the Digital Revenue Agency of the Future: Seven Keys to Transformation*. Deloitte Insights Report, Deloitte Center for Government Insights. Available at: <https://www2.deloitte.com/us/en/insights/industry/public-sector/digital-revenue-agency-of-the-future.html>.
- Jimenez, P. & Iyer, G.S. (2016). Tax compliance in a social setting: The influence of social norms, trust in government, and perceived fairness on taxpayer compliance. *Advances in Accounting, incorporating Advances in International Accounting* 34: 17-26.
- Kahneman, D., & Tversky, A. (1972). Subjective probability: A judgment of representativeness. *Cognitive Psychology* 3: 430-454.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica* 47: 263-291.
- Kaplanoglou, G. & Rapanos, V.T. (2015). Why do people evade taxes? New experimental evidence from Greece. *Journal of Behavioral and Experimental Economics* 56: 21-32.
- Kasper, M., Kogler, C. & Kirchler, E. (2015). Tax policy and the news: An empirical analysis of taxpayers' perceptions of tax-related media coverage and its impact on tax compliance. *Journal of Behavioral and Experimental Economics* 54: 58-63.
- Kastlunger, B., Lozza, E., Kirchler, E. & Schabmann, A. (2013). Powerful authorities and trusting citizens: The Slippery Slope Framework and tax compliance in Italy. *Journal of Economic Psychology* 34: 36-45.

- Kemme, D.M., Parikh, B. & Steigner, T. (2020). Tax Morale and International Tax Evasion. *Journal of World Business* 55: 101052.
- Kirchler, E. (1999). Reactance to Taxation: Employers' Attitudes towards Taxes. *Journal of Socio-Economics* 28: 131-138.
- Kirchler, E. (2007). *The Economic Psychology of Tax Behaviour*. Cambridge: Cambridge University Press.
- Kirchler, E. & Wahl, I. (2010). Tax compliance inventory TAX-I: Designing an inventory for surveys of tax compliance. *Journal of Economic Psychology* 31: 331-346.
- Kirchler, E., Hoelzl, E., & Wahl, I. (2008). Enforced versus voluntary tax compliance: The "slippery slope" framework. *Journal of Economic Psychology* 29: 210-225.
- Kirchler, E., Niemiowski, A. & Wearing, A. (2006). Shared subjective views, intent to cooperate and tax compliance: Similarities between Australian taxpayers and tax officers. *Journal of Economic Psychology* 27: 502-517.
- Kleven, H.J., Knudsen, M.B., Kreiner, C.T., Pedersen, S. & Saez, E. (2011). Unwilling or Unable to Cheat? Evidence from a Tax Audit Experiment in Denmark. *Econometrica* 79(3): 651-692.
- Klijn, E. H., Edelenbos, J., & Steijn, B. (2010). Trust in governance networks: Its impact and outcomes. *Administration and Society* 42(2): 193-221.
- Kogler, C., Mittone, L. & Kirchler, E. (2016). Delayed feedback on tax audits affects compliance and fairness perceptions. *Journal of Economic Behavior & Organization* 124: 81-87.
- Kogler, C., Muehlbacher, S. & Kirchler, E. (2015). Testing the "slippery slope framework" among self-employed taxpayers. *Economics of Governance* 16: 125-142.
- Kosonen, T. & Ropponen, O. (2015). The role of information in tax compliance: Evidence from a natural field experiment. *Economics Letters* 129: 18-21.
- Koumpias, A.M. & Martinez-Vazquez, J. (2019). The impact of media campaigns on tax filing: Quasi-experimental evidence from Pakistan. *Journal of Asian Economics* 63: 33-43.
- Kountouris, Y. & Remoundou, K. (2013). Is there a cultural component in tax morale? Evidence from immigrants in Europe. *Journal of Economic Behavior & Organization* 96: 104-119.
- Kuokstis, V. (2017). Economic conditions and tax compliance: The mediating effect of trust. *Journal of Comparative Politics* 10(2): 55-69.
- Laine, T., Silander, T. & Sakamoto, K. (2020). What distinguishes people who turn into tax evaders when properly incentivized from those who don't? An experimental study using hypothetical scenarios. *Journal of Behavioral and Experimental Economics* 85: 101511.
- Lederman, L. (2010). Reducing Information Gaps to Reduce the Tax Gap: When is Information Reporting Warranted? *Fordham Law Review* 78(4): 1733-1759. Available at: <https://ir.lawnet.fordham.edu/flr/vol78/iss4/3>.
- Lewis, A. (1982). *The psychology of taxation*. Oxford, UK: Martin Robertson Publishers.
- Lewis, A., Carrera, S., Cullis, J. & Jones, P. (2009). Individual, cognitive and cultural differences in tax compliance: UK and Italy compared. *Journal of Economic Psychology* 30: 431-445.

- Lindgren, I., Madsen, C.Ø., Hofmann, S. & Melin, U. (2019). Close encounters of the digital kind: A research agenda for the digitalization of public services. *Government Information Quarterly* 36: 427-436.
- Luttmer, E. F. P. & Singhal, M. (2014). Tax Morale. *Journal of Economic Perspectives* 28(4): 149-168.
- Maciejovsky, B., Schwarzenberger, H. & Kirchler, E. (2012). Rationality versus Emotions: The Case of Tax Ethics and Compliance. *Journal of Business Ethics* 109: 339-350.
- Mascagni, G. (2018). From the Lab to the Field: A Review of Tax Experiments. *Journal of Economic Surveys* 32(2): 273-301.
- May, P. J., & Wood, R. S. (2003). At the regulatory front lines: Inspectors' enforcement styles and regulatory compliance. *Journal of Public Administration Research and Theory* 13(2): 117-140.
- McKee, M., Siladke, C.A. & Vossler, C.A. (2018). Behavioral dynamics of tax compliance when taxpayer assistance services are available. *International Tax & Public Finance* 25: 722-756.
- Muehlbacher, S., Mittone, L., Kastlunger, B. & Kirchler, E. (2012). Uncertainty resolution in tax experiments: Why waiting for an audit increases compliance. *Journal of Socio-Economics* 41: 289-291.
- Murphy, K. (2004). The role of trust in nurturing compliance: A study of accused tax avoiders. *Law and Human Behavior* 28(2): 187-209.
- Murphy, K. (2008). Enforcing Tax Compliance: To Punish or Persuade? *Economic Analysis & Policy* 38(1): 113-135.
- Pickhardt, M. & Prinz, A. (2014). Behavioral dynamics of tax evasion – A survey. *Journal of Economic Psychology* 40: 1-19.
- Power, M. (1999). *The audit society: Rituals of verification*. Oxford: Oxford University Press.
- Prins, J.E.J., Raab, C.D. & Keymolen, E. (2012). Trust and ICT: New challenges for public administration. In: I. Snellen, M. Thaens, & W. van de Donk (Eds.). *Public administration in the information age: Revisited* (Innovation and the Public Sector; Vol. 19), pp. 21-35. IOS Press.
- Richardson, G. (2006). Determinants of tax evasion: A cross-country investigation. *Journal of International Accounting, Auditing and Taxation* 15: 150-169.
- Richardson, M. and Sawyer, A. (2001). A taxonomy of the tax compliance literature: Further findings, problems and prospects. *Australian Tax Forum* 16: 137-284.
- Rodriguez-Hevia, L.F., Navio-Marco, J. & Ruiz-Gomez, L.M. (2020) - Citizens Involvement in E-Government in the European Union- The Rising Importance of the Digital Skills. *Sustainability* 12: 6807.
- Schneider, D., Klumpe, J., Adam, M. & Benlian, A. (2020). Nudging users into digital service solutions. *Electronic Markets* 30: 863-881.
- Scholz, J.T. & Lubell, M. (1998). Trust and Taxpaying: Testing the Heuristic Approach to Collective Action. *American Journal of Political Science* 42(2): 398-417.

- Siglé, M., Goslinga, S., Spekle, R., van der Hel, L. & Veldhuizen, R. (2018). Corporate Tax Compliance: Is a Change Towards Trust-Based Tax Strategies Justified? *Journal of International Accounting, Auditing and Taxation* 32: 3-16.
- Silverman, D., Slemrod, J., & Uler, N. (2014). Distinguishing the role of authority "in" and authority "to". *Journal of Public Economics* 113: 32-42.
- Simon, H. A. (1947). *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization*. The Free Press.
- Simon, H. A. (1955). A Behavioral Model of Rational Choice. *Quarterly Journal of Economics* 69: 99-118.
- Simon, H. A. (1978). Rationality as Process and Product of Thought. *American Economic Review* 68(1): 1-16.
- Sjoberg, F.M., Mellon, J., Peixoto, T., Hemker, J., Tsai, L.L. (2019). Voice and Punishment: A Global Survey Experiment on Tax Morale. *World Bank Policy Research working paper no. 8855*, Washington, D.C.: World Bank Group. Available at: <http://documents.worldbank.org/curated/en/986411557941098413/Voice-and-Punishment-A-Global-Survey-Experiment-on-Tax-Morale>.
- Slemrod, J. (2007). Cheating ourselves: The economics of tax evasion. *Journal of Economic Perspectives* 21(1): 25-48.
- Slemrod, J. (2017). Tax Compliance and Enforcement. Chapter 4 in: Auerbach, A.J. and Smetters, K. (eds.): *The Economics of Tax Policy*. Oxford University Press.
- Slemrod, J. (2019). Tax Compliance and Enforcement. *Journal of Economic Literature* 57(4): 904-954.
- Srinivasan, T.N. (1973). Tax evasion: A model. *Journal of Public Economics* 2(4): 339-346.
- Steinmo, S. (ed.) (2018). *The Leap of Faith: The Fiscal Foundations of Successful Government in Europe and America*. Oxford: Oxford University Press.
- Torgler, B. (2002). Speaking to theorists and searching for facts: Tax morale and tax compliance in experiments. *Journal of economic surveys* 16(5): 657-683.
- Torgler, B. & Schneider, F. (2009). The impact of tax morale and institutional quality on the shadow economy. *Journal of Economic Psychology* 30: 228-245.
- Van de Walle, S. (2010). New public management: Restoring the public trust through creating distrust? In: T. Christensen, & P. Laegreid (Eds.). *Ashgate research companion to new public management*, pp. 309-320. Aldershot: Ashgate.
- Van de Walle, S. (2013). The role of trust in public services and public sector reform. In: Madureira, C. & Asensio, M (eds). *Handbook de Administração Pública*. Oeiras: Instituto Nacional de Administração, pp. 145-158.
- Van de Walle, S., & Six, F. (2011). Active trust and active distrust: Why studying distrust is important. Paper Presented at the 8th Annual JCPA/ICPA-Forum Workshop, Lee Kuan Yew School of Public Policy, National University of Singapore.

Williams, C.C. & Horodnic, I.A. (2017). Tackling the Informal Sector in East-Central Europe. *Journal of Tax Administration* 3(2): 65-86.

Wurth, E. & Braithwaite, V. (2017). Tax practitioners and tax avoidance: Gaming through authorities, cultures, and markets, Chapter 21 in: Hashimzade, N. & Epifantseva, Y. (eds.) – *The Routledge Companion to Tax Avoidance Research*. London: Routledge, pp. 320-339.

Yang, K. (2005). Public administrators' trust in citizens: A missing link in citizen involvement efforts. *Public Administration Review* 65(3): 273-285.

Yang, K., & Holzer, M. (2006). The performance-trust link: Implications for performance measurement. *Public Administration Review* 66(1): 114-126.

Yitzhaki, S. (1974). A note on 'Income Tax Evasion: A Theoretical Analysis'. *Journal of Public Economics* 3: 201-202.