

The Dynamics of Internalised and Extrinsic Motivation in the Ethical Decision-Making of Small Business Owners

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We investigate the ethical behaviour of small business owners by focusing on individuals' motivations to comply with tax obligations. In a study of 330 small business owners, we assess the role of internalised motivation to pay taxes versus extrinsic motivation in driving tax compliance. First, we find that internalised and extrinsic motivation have distinct predictors. Internalised motivation is related to strong personal moral norms to comply and a sense that the fiscal system is fair. Extrinsic motivation is related to perceptions that penalties are severe, that checks are likely, and is associated with a perceived lack of tax knowledge. Second, we find that, when considered together, internalised motivation but not extrinsic motivation predicts self-reported tax compliance. Third, we test the undermining hypothesis by which the presence of extrinsic motivation may crowd out the positive effect of internalised motivation. We find evidence of a motivation crowding effect only at very high levels of extrinsic motivation. We discuss avenues for further integration of motivation theory in research on tax compliance behaviour, and more generally the study of regulatory compliance and ethical behaviour in business settings.

INTRODUCTION

If people be led by laws, and uniformity sought to be given them by punishments, they will try to avoid the punishment, but have no sense of shame. If they be led by virtue, [. . .] they will have the sense of shame, and moreover will become good. (Confucius, as cited in Legge, 2001, p. 146)

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Accumulated knowledge on human behaviour from social and behavioural sciences echoes the thoughts of many great thinkers in that punishments are solutions of last resort for driving human behaviour. Social norms, personal values, enjoyment of an activity, the desire to pay back generosity or to follow an inspirational figure, are all motives that are generally more effective and have a longer-lasting effect. However, although punishments may not be ideal, they are often “better than nothing” when other internalised factors do not exist. The current study looks at the dynamics of internalised motivation versus external punishment in driving the motivation of business owners to comply with tax obligations.

Intrinsic, internalised, and extrinsic motivation

In the early 1970s, Edward Deci asked students to participate in an experiment where they had the opportunity to resolve a three-dimensional puzzle; essentially, the opportunity to play an interesting game. His experiment revealed a puzzling result—students who received financial rewards for playing the game during the experiment engaged *less* with the puzzle in the period following the experiment than those who did not (Deci, 1971). This experiment cemented the foundation of an academic debate on the use of external reinforcements to motivate behaviour, an ongoing debate that now spans multiple disciplines, from psychology and education to economics and organisational behaviour. At the core of the debate is the contention that the introduction of external rewards or punishments undermines people’s existing motivation to perform a behaviour, so that it leads to the unintended consequence that people perform a desirable behaviour even less than when these incentives are introduced. This effect has been dubbed the “crowding out” of motivation (Frey & Jegen, 2001). We will return to this debate in the current section, but first we focus on defining and distinguishing intrinsic and extrinsic motivation.

Definitional Issues. We begin by clarifying the distinction of two motivation types at the root of the debate: the dichotomy of *intrinsic* and *extrinsic motivation*. In much of psychological and educational research, intrinsic motivation is defined as motivation intrinsic to a certain task—people can perform an activity for the pure joy of doing so; this joy derives from satisfied curiosity, joy of playing, the satisfaction of mastery, and so on (Reiss, 2004). Any motivation not intrinsic to performing the task itself is then considered extrinsic. This can range from internalised forms of extrinsic motivation (for example, a student may study for an exam because a high mark would contribute to an increased feeling of self-worth or would further his goals to follow an academic career path) to external forms (for example, a child might eat her healthy greens because she is “bribed” with desert or punished with reduced computer game time). As Ryan and Deci (2000a) note, intrinsic motivation is rare in the

everyday life of older children and adults, as most of the tasks populating our daily routine do not provide intrinsic joy (e.g., proofreading of papers, answering work emails, organising research data collection, food shopping, servicing the car, and the list goes on). To take another example, in this paper we will look at motivations relating to tax compliance; it is difficult to imagine the preparation of a tax return to be an intrinsically joyful task. However, of the possible motivations for performing tasks that are not intrinsically motivating, some are more internalised than others. *Internalised motivation* usually means that a person performs a task without the need for external prompts, for instance because the task is important to achieving their personal goals, in order to avoid feeling embarrassed, or to reciprocate someone else's kindness. In common parlance as well as mainstream economic research (and by contrast to psychological research as discussed above), "intrinsic motivation" denotes all such types of internalised motivation or self-motivation, whether they are intrinsic to the task or not. By contrast, "extrinsic motivation" is that which is not internalised, most typically monetary rewards or punishments for performing a task (e.g., Bénabou & Tirole, 2003; Frey & Jegen, 2001). In this paper, we focus on the distinction between internalised motivation and extrinsic (i.e., non-internalised) motivation.

Internalised versus Extrinsic Motivation. Imagine the owner of a small independent cafe baking cakes for the day at 5.30 am. Now imagine different scenarios about what drives him to wake up before sunrise to bake: (a) baking for the sake of baking; (b) the desire to run a respected business buzzing with happy customers; (c) the knowledge that customers rely on him to get their breakfast on time on their way to work; (d) his mother's reminders to get the baking done on time. Which scenarios do you think are likely to produce the tastiest cakes? Based on existing results, one would predict that the more internalised forms of motivation are likely to lead to better performance and longer lasting effects. Motivation sources can be attributed by the individual either internally or externally, and internal attributions are related to a greater sense of autonomy which is in turn associated with increased motivation and performance (Ryan & Deci, 2000b). External sources of motivation sometimes undergo a process of internalisation and integration with individual goals leading to self-motivation (Deci & Ryan, 1985). Research in a variety of domains has shown that higher internalisation is associated with higher performance, whether this is school performance (Miserandino, 1996), pro-environmental behaviour (Osbaldiston & Sheldon, 2003), abstaining from alcohol abuse (Ryan, Plant, & O'Malley, 1995), or work performance (Gagné & Deci, 2005).

Given that internalised motivation seems desirable in a wide range of domains, it is of interest to determine the conditions that facilitate the emergence and maintenance of internalised motivation. Internalised motivation is associated with a sense of *competence* and *autonomy* (Ryan & Deci, 2000b).

Conversely, factors that are seen to undermine competence and autonomy are associated with extrinsic motivation. For example, the nudges of the baker's mother could be perceived as interference that undermines autonomy, thus leading to extrinsic motivation. Baking for the sake of baking may only be intrinsically motivating as long as the results are tasty; conversely, lack of baking competence will soon erode internalised motivation. Another important facilitating condition of internalised motivation is social *relatedness* (Ryan & Deci, 2000b), the extent to which the individual is embedded in a secure and supportive social network. In the baker example, the customers who rely on the baker to provide their breakfast muffins may be loyal customers who are always friendly and appreciative of the bakery. Or instead, they may seem demanding and aloof customers who write unflattering reviews of the cafe. In the first instance, the baker's motivation will be related to reciprocating the customers' loyalty (see also Frey & Jegen, 2001), while in the second, internalised motivation is likely to be undermined.

While internalised motivation is desirable for its effectiveness and sustainability, it is nonetheless true that in some instances where internalised motivation is lacking then extrinsic rewards or punishments may be the only way to affect behaviour. Imagine that the town where the baker above operates decides to support the baking industry, and therefore the local authority will reduce tax rates for bakeries but also introduce controls relating to the quality of ingredients. While our baker may be internally motivated to produce the best products possible, others may not be as internally motivated and will require slight nudges. Given that our baker is already highly motivated, the local authority figures that such measures can't hurt people like him but will nudge others in the right direction. However, they may be wrong in this assumption due to motivation crowding effects.

Motivation Crowding. As illustrated by Deci's (1971) experiment discussed in the opening of the paper, the introduction of external incentives may undermine intrinsic motivation. The last four decades have provided increasing evidence to show that external incentives often undermine people's internal motivation to perform certain actions, especially when rewards are directly linked to engagement or performance (for a review see Deci, Koestner, & Ryan, 1999). Despite mounting evidence, the crowding out of intrinsic motivation is still subject to ongoing debate (for a review see Cerasoli, Nicklin, & Ford, 2014).

In the current study, we are interested in the behaviour of small business owners. Debates relating to motivation types and motivation crowding are also reflected in the organisational and business literature (Kunz & Pfaff, 2002; Osterloh & Frey, 2000), although the systematic study of intrinsic and extrinsic motivation effects is relatively recent in this field (Gagné & Deci, 2005). There is evidence that internalised motivation is associated with better work

performance (Gagné, Koestner, & Zuckerman, 2000) but also that external incentives can undermine this internalised motivation (Deckop & Cirka, 2000; Dysvik & Kuvaas, 2013; Eden, 1975). More relevant to the topic of tax compliance, ethical behaviour in organisational settings has been shown to be undermined by external punishments when internalised motivation is present (Houser, Xiao, McCabe, & Smith, 2008; Schulze & Frank, 2003), contributing to the lack of effectiveness in the introduction of formal systems that promote ethical decisions (Jacobsen, Hvitved, & Andersen, 2014; Smith-Crowe et al., 2014).

Motivation and Tax Compliance

The current study looks at one particular instance of organisational behaviour—small business owners' compliance with fiscal regulations; in particular, we focus on small business owners in the UK. Tax compliance is an interesting case of regulatory compliance. Some view taxes as an imposition by the state, even to the extreme opinion held by some business owners that “taxes are theft” (Braithwaite, 2009). Some view taxes as an exchange—taxes they pay provide access to services such as infrastructure, social security, and so on (Frey & Torgler, 2007). Others still view paying taxes as a moral obligation, whereby the public system can provide for those most vulnerable in society (Torgler, 2005). This diversity of attitudes is further enhanced by the fact that different types of taxes have different representations (e.g., social security contributions versus sales taxes) (e.g., see Adams & Webley, 2001). The literature looking at tax compliance has generally emphasised that tax compliance is complex and subject to a wide range of determinants (for reviews, see Andreoni, Erard, & Feinstein, 1998; Hashimzade, Myles, & Tran-Nam, 2013; Kamleitner, Korunka, & Kirchler, 2012; Kirchler, 2007; Pickhardt & Prinz, 2013). Given the large variation in motivations to pay taxes, tax compliance behaviour is an interesting case for looking at motivation types and their interaction.

Indeed, debates in the tax compliance literature seem to be focused on the battle of internalised and extrinsic motivation, without necessarily acknowledging it as such. Overviews of research on tax compliance broadly differentiate two camps: (a) the deterrence camp, and (b) the social factors camp (e.g., Kirchler, 2007; Pickhardt & Prinz, 2013; Torgler, 2002). The first strand of research originates in the “classic model” of tax compliance (Allingham & Sandmo, 1972; Yitzhaki, 1974) which construes taxpayers as rational actors aiming to maximise profit. When making tax compliance decisions, taxpayers will take into account the loss incurred if caught evading (the penalty for evasion) and the likelihood of incurring this loss (the probability of being audited by the authorities). Empirical evidence does indeed suggest that publishing higher penalties or increasing the perception that audits are frequent can

increase compliance (Slemrod, Blumenthal, & Christian, 2001). However, although deterrence explains some variance in increased compliance, many have argued that it does not explain the widespread compliance observed in society (for a review see Andreoni et al., 1998) or the fact that some people would always comply even if deterrents were absent (Wenzel, 2004b). A second strand of research has thus focused on highlighting the other, more internalised forms of motivation to comply. For instance, Torgler (2002) argues that “tax morale” (defined as intrinsic motivation to pay taxes, or perceived moral obligation, see Torgler, 2005) contributes to tax compliance by encouraging individuals to uphold their own personal standards of behaviour. As suggested by motivation research discussed earlier (Ryan & Deci, 2000b), internalised motivation is facilitated by a sense that the action is consistent with the individuals’ values and principles, thus relating to a sense of autonomy. Also, in relation to internalised motivation to comply with tax obligations, Feld and Frey (2002) place emphasis on the role of fairness in tax compliance, pointing out that taxpayers who perceive taxpaying as a fair process (in terms of how they are treated and benefits they receive for taxes paid) are more likely to be intrinsically motivated to reciprocate by being cooperative. Wenzel (2004a) stresses the importance of social norms for tax compliance through people’s motivation to follow taxpaying norms in their existing groups. Both the results above on the effect of fairness and social norms speaks to relatedness, another facilitator of internalised motivation; an action that represents meaningful interaction with others is more likely to be internally motivating (Ryan & Deci, 2000b). Such meaningful social interaction can be represented by the need to act in a way that is consistent with norms held by significant others (Wenzel, 2004a) and to enjoy equitable exchanges (Feld & Frey, 2007).

The two “camps” of tax compliance research, focused on deterrence versus social factors, map onto the concepts of extrinsic and internalised motivation, although this connection has not been explored in detail. It is only recently that internalised and extrinsic motivation have been contrasted and compared in relation to tax compliance (although not in direct relation to the intrinsic/extrinsic motivation debate). Valerie Braithwaite’s work proposed that citizens may take different stances towards authorities (which she titles “motivational postures”). Of the two stances that lead to compliance with authorities, she contrasts commitment and capitulation; the former represents cooperation with authorities because it is perceived as the right thing to do, while the latter represents compliance due to the enforcement power of authorities (Braithwaite, 2009). In parallel, Kirchler, Hoelzl, and Wahl (2008) developed a model of tax compliance that integrates social factors and deterrence as two separate routes to compliance. The model differentiates voluntary and enforced compliance—concepts akin to internalised and extrinsic motivation (see also committed versus enforced motivation in Gangl, Hofmann, Groot, et al., 2015). While the original model proposed that both enforced and

voluntary compliance will lead to compliant behaviour via two different routes, more recent data suggests that only voluntary compliance is related to compliance intentions (Gangl, Hofmann, Groot, et al., 2015). Further empirical research is needed to differentiate the role of internalised and extrinsic motivation in tax compliance; in addition, no studies seem to directly address the motivation undermining hypothesis by which external punishments or rewards may undermine internalised motivation (although see Gangl, Hofmann, & Kirchler, 2015 who report a negative association between enforcement and trust in authorities). This study aims to contribute empirical data that address this knowledge gap.

The Current Study

We aim to tease out the role of internalised and extrinsic motivation in tax compliance in several ways. First, we ask what are the factors associated with each type of motivation. If we attempt to increase either type of motivation, which levers are available in order to do so? Based on the literature reviewed above, we propose the following:

Proposition 1: Internalised motivation for tax compliance will be jointly predicted by personal standards of behaviour (personal norms), social norms, and fairness.

Proposition 2: Extrinsic motivation will be jointly predicted by heightened perceptions of external punishment (large penalties and frequent audits) and lack of competence.

Second, we look at which type of motivation leads to the desired behaviour. We will look at differential effects of internalised and extrinsic motivation on compliance outcomes. Consistent with previous studies, we will employ a self-reported compliance measure, asking people to state to what extent they declare all their income and do not overstate deductions on their tax return. We expect based on previous works that internalised motivation will be related to desired outcomes, while extrinsic motivation will be weakly or even not at all related to compliance.

Proposition 3: Internalised motivation to pay taxes will be strongly related to self-reported compliance behaviour. By comparison, externalised motivation will have a weaker link to self-reported compliance.

The current study goes beyond studying the differential effects of internalised and extrinsic motivation independently. We also look at the interaction effect—consistent with the motivation literature we expect to find that the presence of extrinsic motivation may undermine the beneficial effects of internalised motivation. When extrinsic motivation is low, we expect to find that

internalised motivation predicts self-reported compliance. However, when extrinsic motivation is high, there will be no effect of internalised motivation on compliance.

Proposition 4: Extrinsic motivation will moderate the link between internalised motivation and self-reported compliance.

Our focus population is owners of micro-business, defined as a business (incorporated or not incorporated) with under ten employees and a turnover under £1.6 million (European Commission, 2003). We chose to look at self-employed individuals and owners of very small businesses given that compliance attitudes and the factors influencing these attitudes are most likely to be relevant at individual level as opposed to larger businesses where compliance decisions are distributed among several individuals.

METHOD

Sample

A total of 330 owners or part-owners of micro-business in the UK took part in the study in two data collection sessions in February and June 2015;¹ 76.1 per cent of respondents were male. For other demographic characteristics (age, income, education, geography, and business structure) please refer to Table 1.

Procedure

All the measures were pilot-tested for comprehension on an initial sample of 30 small business owners in the UK. Following feedback from pilot testing, the measures were adjusted (Collins, 2003). The main study was carried out online and invitations to take part in the study were sent via email to a random sample of micro-businesses. A list of business email addresses was obtained by the researchers from a UK database recommended for use in tax research with small businesses (Barham & Fox, 2011). The sample included businesses with under 10 employees, turnover under £1.6 million (see definition of micro-business above), and included both self-employed individuals (sole traders) and limited companies. The database provider extracted a random sample (simple randomisation) from the total number of micro-businesses in the UK.

With the assistance of a market research company, email invitations to take part in the study were sent on behalf of the researchers in two waves, in February and June 2015. The total number of emails sent out was 21,000, making the number of questionnaire respondents 1.57 per cent of all the emails

¹ Some data resulting from this survey are also analysed in Onu, Oats, and Kirchler (2016).

TABLE 1
Sample Characteristics

<i>Age (years)</i>	<i>Personal income (£)</i>	<i>Education</i>	<i>Business type</i>	<i>Geography</i>					
25-34	6.7%	0-10,000	13.0%	GCSE	12.4%	Occasional freelancer	3.6%	England	79.4%
35-44	14.5%	10,000-20,000	20.6%	A-level/vocational training	30.9%	Self-employed/sole trader	34.5%	Northern Ireland	0.3%
45-54	30.9%	20,000-30,000	17.6%	BA or BSc	26.1%	Partnership	8.2%	Scotland	2.4%
55-64	32.7%	30,000-40,000	20.3%	Postgraduate (MSc/PhD)	18.8%	Limited liability company	52.7%	Wales	7.9%
65-74	14.2%	40,000-60,000	13.6%	Other	11.8%	Other	0.9%		
75-84	0.9%	over 60,000	14.8%						

sent out. It is worth noting that a significant number of email invitations were undeliverable to the email addresses listed, so the response rate based on delivered email will be higher. Given the fully anonymous nature of the survey, it was not possible to attempt to increase the response rate with follow-up emails. Such low response rates are not unusual for one-shot electronic surveys; however, given the potential response bias we only interpret relations between variables; the interpretation of absolute levels of variables may not be meaningful for the population of micro-business owners in the UK. Given the legal and moral implications of the tax questions, we were particularly concerned with designing the research in a way that would minimise social-desirability and non-responses biases. Our approach was to collect responses using a fully anonymous online survey. Participants were assured that they cannot be identified based on their responses and were encouraged to be honest and open.

Participants were first given a brief overview of the survey topic and they were informed of their rights to voluntary participation and confidentiality. They proceeded to complete the measures. All measures employed 7-point Likert-type scales. After completing the survey, participants who chose to leave their contact details (which would be collected completely separate from their survey responses to guarantee anonymity) were rewarded with a £5 cheque for participation and the opportunity to win shopping vouchers up to £100.

Measures

Internalised and Extrinsic Motivation. The two motivation types were assessed using the existing 5-item scales to measure voluntary compliance (i.e., internalised motivation) and enforced compliance (i.e., extrinsic motivation) designed and validated with Austrian taxpayers (see Kirchler & Wahl, 2010). The scales were adapted slightly following initial qualitative testing with UK taxpayers, and can be found in the Appendix. Participants were asked to rate their agreement to these statements on a 7-point scale (from 1 = disagree completely to 7 = agree completely). In the first instance, we performed an exploratory factor analysis (principal components analysis, Direct Oblimin rotation), to check that the ten items load on the two distinct factors of internalised and extrinsic motivation. We chose to begin by using PCA in order to match the analysis strategy to the original TAX-I and check that the factor structure is unchanged following translation. Factor analysis confirmed that the ten items load on the two distinct factors of internalised and extrinsic motivation. Both scales had good reliability in the current study: internalised motivation scale $\alpha = .883$ and extrinsic motivation scale $\alpha = .879$.

Given that our scales were based on *a priori* assumed theoretical constructs, we performed confirmatory factor analysis using the AMOS package, in a

model that included the internalised and extrinsic motivation factors, as well as the four-item fairness scale described below. We found the model χ^2 to be significant ($p < .001$); however, this significance is not a reliable indicator of model fit for models with large numbers of observations such as the present one (Byrne, 2016). We found the model to be moderate-to-good fit, with CMIN/DF = 2.462, values for goodness-of-fit indices over .90 (GFI = .934, AGFI = .901), comparative indices of fit approaching or over .95 (CFI = .965, NFI = .943), and root mean square error of approximation under .08 indicating moderate fit (RMSEA = .067) (interpretation of indices based on Byrne, 2016).

Self-reported Compliance. Tax compliance was measured by asking participants to what extent they agree (on a 7-point scale) with the following statements: “*I declare all of my income on my tax return, including all cash earnings*” and “*I never over-claim expenses on my tax return*” ($r(330) = .549, p < .001$).

Personal Moral Norms and Social Moral Norms. Personal and social norms were assessed by adapting items used in Wenzel (2004a) following initial testing. Personal moral norms were assessed by asking participant agreement with the following statements: “*I believe I should declare all of my income on my tax return*” and “*I believe I shouldn't over-claim expenses on my tax return*”, $r(330) = .684, p < .001$. Social moral norms were assessed with the following statements: “*In my opinion, most taxpayers in the UK believe they should declare all of their income on their tax return, including all cash earnings*” and “*In my opinion, most taxpayers in the UK believe they shouldn't over-claim expenses on their tax return*”, $r(330) = .705, p < .001$. Factors analysis confirmed that the four items load on the two distinct factors of personal and social norms (principal components analysis, Direct Oblimin rotation).

Fairness. Fairness was assessed by assessing both procedural and distributive justice adapting previous measures (Barham & Fox, 2011; Hartner, Rechberger, Kirchler, & Schabmann, 2008). Two items each were used to assess procedural justice (“*HM Revenue and Customs treats me fairly in my dealings with them*” and “*HM Revenue and Customs treats me respectfully in my dealings with them*”) and distributive justice (“*The level of tax I pay is generally fair*” and “*I receive adequate public services for the taxes I pay*”). Given that both procedural and distributive justice loaded on the same factor (principal components analysis, Direct Oblimin rotation) we computed the four items to assess fairness ($\alpha = .809$). This four-item model was further included in a confirmatory factor analysis as discussed above.

Deterrence Factors—Perceptions of Penalties and Audits. Perceptions of the seriousness of the penalty for one's own business were assessed by

participant agreement with the following statement: “*If I evaded taxes and got caught, the penalties would be crippling for my business*”. Perceptions of the likelihood of audits were assessed with the following statement: “*If I regularly did not declare income for tax purposes, I would certainly get caught*” (adapted from Barham & Fox, 2011). Although our initial intention was to compute the two measures in a “deterrence” factor, the two items were not highly enough correlated to suggest they assess a similar construct ($r(330) = .292, p < .001$) and therefore we will differentially assess the role of perceptions of penalties and perceptions of audits.

Tax Knowledge. Confidence in one’s tax knowledge was assessed using the following single statement: “*I feel confident and knowledgeable in dealing with taxes*”.

Demographic Variables. Given that demographic variables can explain some variance in tax compliance we also assessed gender, age and education (the latter two by using centile distributions from the UK’s Office for National Statistics, 2014). These variables will be used as covariates in the analysis.

Please refer to Table 2 for descriptive data on the study variables and correlations among study variables.

RESULTS

Determinants of Internalised and Extrinsic Motivation

To determine the factors related to each type of motivation, we included all the variables measured as predictors (personal norms, social norms, fairness, penalty perception, audit perception, and knowledge) in a linear regression analysis to predict the motivation outcome. In the first step, we entered the demographic variables used as covariates. In the second step, we entered our predictor variables as described above. Two separate linear regression analyses were conducted, one for internalised motivation as outcome, and the second for extrinsic motivation as outcome.

Internalised Motivation. The results of the regression analysis are presented in Table 3. As expected (see Proposition 1), internalised motivation is predicted by strong personal norms and high fairness perceptions. We also predicted that internalised motivation would be related to the perceived strength of social norms against evasion. While social norms did not emerge as a significant predictor, this may be because social norms have been shown to affect tax compliance when they are internalised as personal norms (Wenzel, 2004b), an explanation also consistent with the nature of internalised motivation.

TABLE 2
Descriptive Statistics and Pearson Bivariate Correlations among the Study Variables

	M	SD	1	2	3	4	5	6	7	8
1. Internalised motivation	5.171	1.427								
2. Extrinsic motivation	3.776	1.533	-.070							
3. Self-reported compliance	5.854	1.302	.309**	-.068						
4. Personal moral norms	6.064	1.234	.418**	-.061	.784**					
5. Social moral norms	4.262	1.436	.147**	-.144**	.260**	.279**				
6. Fairness	4.649	1.379	.435**	.034	.177**	.289**	.119*			
7. Audit belief	5.160	1.571	.137*	.282**	.279**	.213**	.191**	.218**		
8. Penalty belief	5.490	1.589	.005	.210**	.238**	.172**	.086	.007	.292**	
9. Knowledge of tax	4.560	1.675	.156**	-.159**	.243**	.231**	.202**	.164**	.064	.060

TABLE 3
Regression Analysis—Effects on Internalised Motivation

Predictors	Model 1			Model 2		
	B	Standard Error	β	B	Standard Error	β
Gender	-.416	.188	-.124*	-.237	.164	-.071
Age	-.083	.070	-.066	-.050	.060	-.039
Income	-.036	.050	-.041	-.015	.045	-.017
Education	.040	.031	.070	.002	.027	.003
Personal moral norms				.350	.062	.303***
Social moral norms				.019	.050	.019
Fairness				.343	.053	.331***
Audit belief				.007	.047	.008
Penalty belief				-.055	.046	-.061
Knowledge of tax				.030	.043	.036
R^2	.029			.294		
p	.046			<.001		
δR^2				.264		
p (change)				<.001		

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

Therefore, we carried out further analyses to test whether the inclusion of personal norms explains the variance due to social norms. We tested this indirect effect using bootstrapping (PROCESS, Model 4, Hayes, 2013). Indeed, when personal norms are not included, there is a significant effect of social norms on internalised motivation which is rendered non-significant by the inclusion of personal norms pointing to the indirect effect of personal norms (LLCI = .0688, ULCI = .1746).

Extrinsic Motivation. The results of the regression analysis on extrinsic motivation are presented in Table 4. As expected (see Proposition 2), extrinsic motivation is related to deterrence factors, being higher when audits are perceived to be likely and penalties are perceived to be severe. High ratings of extrinsic motivation are also associated with low societal norms against evasion and low confidence in one's tax knowledge.

Effects of Internalised and Extrinsic Motivation on Tax Compliance

Direct Effects. To test the effect of internalised and extrinsic motivation of compliance we included the two motivation types in a regression model (after the inclusion of demographic variables as described above). We find that

TABLE 4
Regression Analysis—Effects on Extrinsic Motivation

Predictors	Model 1			Model 2		
	B	Standard Error	β	B	Standard Error	β
Gender	.046	.203	.013	.020	.191	.005
Age	-.036	.075	-.027	-.035	.070	-.025
Income	-.105	.054	-.111	-.038	.052	-.041
Education	-.032	.033	-.053	-.001	.032	-.002
Personal moral norms				-.102	.072	-.082
Social moral norms				-.180	.058	-.169**
Fairness				.035	.061	.031
Audit belief				.276	.054	.283***
Penalty belief				.151	.053	.156**
Knowledge of tax				-.120	.050	-.131*
R^2	.016			.169		
P	.264			<.001		
δR^2				.153		
$p(\text{change})$				<.001		

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

internalised motivation predicts self-reported compliance, while there is no effect of extrinsic motivation, as illustrated in Table 5 (see Model 2). This result is consistent with our initial assumptions (Proposition 3).

Interaction Effects. To test the interaction effect of the two variables, we computed the product of the two standardised variables of internalised and extrinsic motivation. The analysis revealed a significant interaction of the two motivation types (see Table 5, Model 3). To further explore the direction of this interaction we used bootstrapping to test the moderating effect of extrinsic motivation on the relationship between internalised motivation and self-reported compliance (using PROCESS, Model 1, Hayes, 2013). We found that this relationship becomes weaker for greater levels of the moderator, to become non-significant for very high levels (see Table 6). The simple slopes analysis is illustrated in Figure 1—the figure captures the way that the relationship between internalised motivation and self-reported compliance becomes weaker with increasing levels of extrinsic motivation to become non-significant for the 90th centile value (Aiken & West, 1991; Preacher, 2016). This result is in line with our initial expectation (Proposition 4). However, the “crowding out” effect expected is only present at very high levels of extrinsic motivation.

TABLE 5
Regression Analysis—Internalised and Extrinsic Motivation as Predictors of Self-reported Compliance

Predictors	Model 1			Model 2			Model 3		
	B	Standard Error	β	B	Standard Error	β	B	Standard Error	β
Gender	-.288	.172	-.095	-.177	.166	-.058	-.189	.165	-.062
Age	-.134	.064	-.115*	-.113	.061	-.098	-.122	.061	-.106*
Income	.003	.045	.004	.008	.044	.010	.006	.044	.007
Education	.026	.028	.050	.014	.027	.028	.022	.027	.043
Internalised motivation				.378	.070	.290***	.372	.069	.285***
Extrinsic motivation				-.064	.069	-.049	-.048	.069	-.037
Internalised motivation *							-.146	.063	-.124*
Extrinsic motivation							.126		
R^2		.025		.111			< .001		
p		.082		< .001			< .001		
δR^2				.086			.015		
$p(\text{change})$				< .001			.020		

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

TABLE 6
 Conditional Effect of Internalised Motivation on Self-reported Compliance at Different Values of the Moderator Extrinsic Motivation (from PROCESS Output)

<i>Value</i>	<i>Percentile</i>	<i>Effect</i>	<i>Std. Error</i>	<i>t-value</i>	<i>p-value</i>	<i>LLCI</i>	<i>ULCI</i>
1.400	10th	.419	.082	5.109	.000	.258	.581
2.600	25th	.339	.058	5.847	.000	.225	.453
4.000	50th	.245	.049	4.995	.000	.149	.342
4.800	75th	.192	.058	3.331	.001	.078	.305
5.600	90th	.138	.073	1.904	.058	-.005	.281

DISCUSSION

The current study looked at the determinants and effects of internalised and extrinsic motivation for business owners’ compliance with tax regulations. Tax compliance is far more than a strictly financial behaviour—while economic factors may play a role, so do wider perceptions of social norms, personal values, or the perception that the state provides adequate services for taxes paid

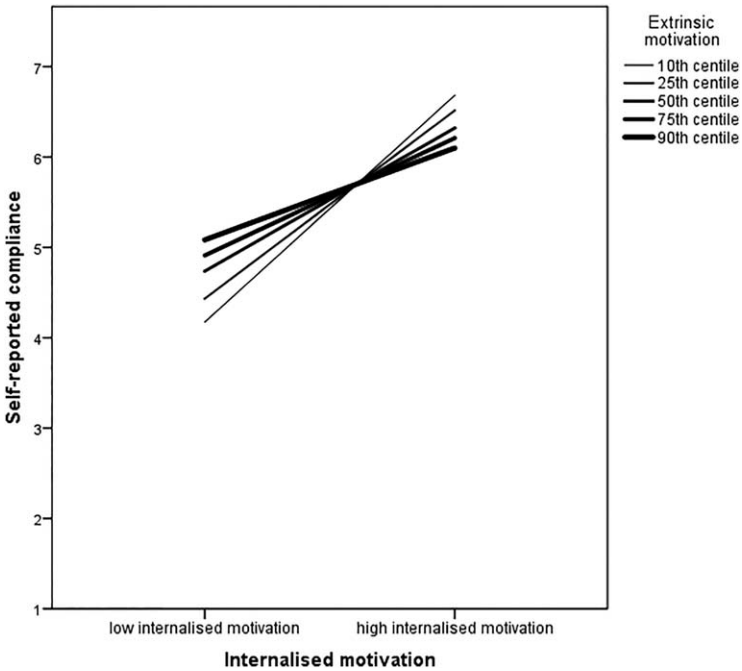


FIGURE 1. The relationship between internalised motivation and self-reported compliance as a function of extrinsic motivation.

(for a comprehensive review, see Kirchler, 2007). These varied determinants, from internalised values to external punishment make tax compliance behaviour particularly interesting for studying the dynamics of extrinsic motivation, internalised motivation, and behaviour.

High levels of internalised motivation were associated with strong personal moral norms of compliance, which represent internalised social norms. This result is consistent with the motivation literature where internalised motivation results from the internalisation of social values and external goals (Ryan & Deci, 2000b), as well as the tax compliance literature and the positive effect of personal norms (Wenzel, 2004b) and tax morale (Torgler, 2002) on compliance. High levels of internalised motivation were also associated with perceptions of fairness in terms of the distribution of taxes and procedures of tax collection. This effect is also consistent with the role of reciprocity in social interactions in internalised motivation (Frey & Jegen, 2001) and more specifically in tax compliance (Feld & Frey, 2002; Frey & Torgler, 2007).

High levels of extrinsic motivation were, as expected, associated with beliefs that penalties are high and audits are likely, consistent with the definition of extrinsic motivation as effected by factors seen as an external imposition (Ryan & Deci, 2000a). Furthermore, extrinsic motivation was also associated with lack of confidence in one's knowledge of tax regulations and weak social norms, consistent with the effect of lack of competence and autonomy, as well as lack of relatedness in extrinsic motivation (Ryan & Deci, 2000b).

We also found that when the effects of internalised and extrinsic motivation on compliance are considered together, then internalised motivation but not extrinsic motivation is associated with higher self-reported compliance. These results reflect debates in the motivation literature and the accumulated evidence suggesting that internalised motivation is more effective at directing behaviour than extrinsic motivation (Deci et al., 1999). These results also reflect those of a recent study on Dutch and Austrian self-employed professionals, where commitment to honour fiscal obligations, but not motivation to comply due to deterrence, was positively associated with tax compliance (Gangl, Hofmann, Groot, et al., 2015).

Furthermore, we tested the interaction effect of internalised and extrinsic motivation and the hypothesis that the presence of extrinsic motivation may crowd out the beneficial effect of internalised motivation. We indeed found that there is a significant interaction effect—internalised motivation is more weakly related to behaviour at high levels of extrinsic motivation; the significant effect of internalised motivation even disappears at very high levels of extrinsic motivation. These results show some support for motivation crowding in tax compliance, consistent with the wider motivation literature (Bénabou & Tirole, 2003; Frey & Jegen, 2001). However, it must be highlighted that the crowding out effect of extrinsic motivation only occurs for very high levels of extrinsic motivation. The mere presence of extrinsic motivation is not

damaging to the effect of internalised motivation, only very high levels of extrinsic motivation (see Cerasoli et al., 2014 for a similar finding).

As outlined above, the results are broadly consistent with the wider motivation literature, as well as past research in the tax compliance of small business owners. The current study makes several contributions to integrate and advance current knowledge. As discussed in the introduction to the paper, debates surrounding tax compliance behaviour have highlighted either the role of deterrence or that of internalised social factors (such as tax morale or reciprocity) in guiding behaviour. In effect, this distinction is broadly about the differential effects of internalised and extrinsic motivation. Although the concepts of internalised and extrinsic motivation have been connected to tax compliance in past research (e.g., Torgler, 2005), research on motivation is peripheral to tax compliance (as opposed to being central in other fields, such as education or organisational studies).

The first contribution of the paper is to bring the motivation debate to the centre of understanding tax compliance and argues that tax compliance research would benefit from integrating insights from research on internalised and extrinsic motivation in other domains (for reviews, see for example Cerasoli et al., 2014; Lepper & Henderlong, 2000; Ryan & Deci, 2000b). While two general strands of research can be differentiated in tax compliance research as highlighted above, there have been recent attempts to integrate these different strands. For example, Kirchler et al. (2008) propose that compliance can be achieved through different routes—a power-based effect based on deterrents (akin to extrinsic motivation) and a trust-based effect based on fairness (akin to internalised motivation) (for a similar distinction see commitment versus capitulation in Braithwaite, 2009). Such models allowed the comparison of the effect of internalised and extrinsic motivation and generally suggest that internalised motivation has longer-term beneficial effects on compliance while extrinsic motivation is less sustainable therefore most costly to maintain (Gangl, Hofmann, Groot, et al., 2015; Gangl, Hofmann, & Kirchler, 2015). Our results support past research that shows internalised motivation to be superior to extrinsic motivation. However, it goes beyond testing their differential effects and looks at their interaction in order to test motivation crowding effects.

The second main contribution of this paper is to highlight the interaction effect of internalised and extrinsic motivation and to suggest that extrinsic motivation may crowd out internalised motivation. In the current study, this effect seems to only occur for very high levels of extrinsic motivation. The results are not only relevant for the particular case of tax compliance, but contribute more generally to the motivation debate. Consistent with past results, we find that internalised motivation has a stronger relationship with the target behaviour than extrinsic motivation (for a review, see Cerasoli et al., 2014). Contrary to previous research on deterrence in business settings, we find that

the significant relationship between internalised motivation and behaviour is not affected by moderate levels of extrinsic motivation, but only very high levels. This result is interesting because it contrasts with previous results from experimental settings (Houser et al., 2008; Schulze & Frank, 2003)—it may be that enforcement levels observed in the field are not sufficient to provide the undermining effect of extrinsic motivation observed in a controlled laboratory setting. This points to a potential “threshold” effect by which some degree of external deterrent may not be perceived as undermining. The mere presence of external motivators does not necessarily “crowd out” internalised motivation unless they are salient enough to threaten individual autonomy (Gagné & Deci, 2005). Future research on regulatory compliance may look at measuring autonomy (i.e., feeling of being controlled/coerced to comply) in order to tease out the relationship between motivation and behaviour.

Tax compliance is a complex behaviour affected by a wide variety of internalised and external factors and the third contribution of the current paper is to bring tax compliance into the focus of motivation researchers. Tax behaviour is driven by many different factors, from the more internalised (values) to the external (financial penalty), making it ripe for research on the various types of internalised motivation (Ryan & Deci, 2000a). Such regulatory compliance settings also provide interesting cases for studying motivation, not least because the external motivators tend to be negative (penalties) rather than positive (rewards). While there is a wealth of results on the “crowding out” effects of external rewards, the effects for penalties are far less clear (for a review, see Cerasoli et al., 2014).

Although our study proposes novel results for the role of motivation in tax compliance, further research is needed to increase confidence in these results. Our study uses a questionnaire method to collect self-reported tax compliance behaviour. Given that tax evasion is a sensitive topic we are aware that a direct measure of compliance may have limitations in capturing the extent of non-compliant behaviour. Tax attitudes and intentions may not always relate to individuals’ behaviour (Hessing, Elffers, & Weigel, 1988). Although caution is needed in extrapolating survey results to behaviour (for a discussion see Onu, 2016), self-reports of tax compliance have been shown to be useful proxies for actual behaviour (Elffers, Robben, & Hessing, 1992) and such measures are commonly used in the tax compliance literature (e.g., Braithwaite, 2009; Webley, Cole, & Eidjar, 2001). We have attempted to mitigate social desirability biases by ensuring the questionnaire is administered in an impersonal way online and by assuring participants of complete anonymity. A further limitation is that data are correlational. We test our assumptions based on a motivation model in which certain factors (e.g. penalties, norms) affect motivation, which in turn affects behaviour. It is conceivable that responses to motivation questions are rationalisations for existing behaviours and therefore

experimental evidence would be desirable to corroborate the current results (although see Wenzel, 2005 who discards the rationalisation hypothesis in a similar context).

The current results are in line with a number of other authors who have argued that tax authorities should ideally encourage internalised motivation through fostering positive norms and a sense of fairness (e.g., Alm et al., 2012; Braithwaite, 2009; Gangl, Hofmann, & Kirchler, 2015). However, the current results do not necessarily support the view that any amount of enforcement is damaging to internalised motivation (Gangl, Hofmann, Groot, et al., 2015), only particularly high levels, consistent with a current review of the motivation literature (Cerasoli et al., 2014). Rather than subscribing to a view that any enforcement policy is unhelpful, we acknowledge that enforcement is useful but would argue that initial enforcement would have to be supported with measures that lead to a more internalised motivation in order to achieve sustainable positive effects. It may also be useful for authorities to assess population levels of internalised and extrinsic motivation before attempting to use behavioural campaigns to change behaviour (for a similar suggestion in the environmental policy domain see Osbaldiston & Sheldon, 2003). This is particularly important given that there is wide cross-country variability in tax compliance and its determinants (e.g., Torgler & Schneider, 2002), therefore the present UK-specific results may not be immediately applicable to other contexts. Further research is needed to clarify the dynamics of internalised and extrinsic motivation in tax compliance and in particular the presence of motivation crowding. We hope that the present study encourages tax researchers to benefit from accumulated knowledge on extrinsic and internalised motivation; we also hope that motivation researchers will consider tax compliance as a worthwhile behaviour to study.

REFERENCES

- Adams, C., & Webley, P. (2001). Small business owners' attitudes on VAT compliance in the UK. *Journal of Economic Psychology*, 22(2), 195–216.
- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*. London: SAGE.
- Allingham, M.G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, 1, 323–338.
- Alm, J., Kirchler, E., Muehlbacher, S., Gangl, K., Hofmann, E., Kogler, C., & Pollai, M. (2012). 'Rethinking the research paradigms for analyzing tax compliance behavior'. Working Paper No. 1210, Tulane University, Department of Economics. Retrieved from <http://ideas.repec.org/p/tul/wpaper/1210.html>
- Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature*, 36(2), 818–860.
- Barham, E., & Fox, K. (2011). Compliance Perceptions Survey—Individuals 2008–10. HM Revenue and Customs Research Report 156. Retrieved from <http://www.hmrc.gov.uk/research/cps-ind-report156.pdf>

- Bénabou, R., & Tirole, J. (2003). Intrinsic and extrinsic motivation. *The Review of Economic Studies*, 70(3), 489–520.
- Braithwaite, V.A. (2009). *Defiance in taxation and governance: Resisting and dismissing authority in a democracy*. Cheltenham: Edward Elgar.
- Byrne, B.M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York: Routledge.
- Cerasoli, C.P., Nicklin, J.M., & Ford, M.T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin*, 140(4), 980–1008.
- Collins, D. (2003). Pretesting survey instruments: An overview of cognitive methods. *Quality of Life Research*, 12(3), 229–238.
- Deci, E.L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, 18(1), 105–115.
- Deci, E.L., Koestner, R., & Ryan, R.M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627–668; discussion 692–700.
- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. Boston, MA: Springer US. Retrieved from <http://link.springer.com/10.1007/978-1-4899-2271-7>
- Deckop, J.R., & Cirka, C.C. (2000). The risk and reward of a double-edged sword: Effects of a merit pay program on intrinsic motivation. *Nonprofit and Voluntary Sector Quarterly*, 29(3), 400–418.
- Dysvik, A., & Kuvaas, B. (2013). Intrinsic and extrinsic motivation as predictors of work effort: The moderating role of achievement goals. *British Journal of Social Psychology*, 52(3), 412–430.
- Eden, D. (1975). Intrinsic and extrinsic rewards and motives: Replication and extension with kibbutz workers. *Journal of Applied Social Psychology*, 5(4), 348–361.
- Elffers, H., Robben, H.S.J., & Hessing, D.J. (1992). On measuring tax evasion. *Journal of Economic Psychology*, 13(4), 545–567.
- European Commission (2003). Recommendation 2003/361/EC concerning the definition of micro, small and medium-sized enterprises. *Official Journal of the European Union*, L124, 36–41.
- Feld, L.P., & Frey, B.S. (2002). Trust breeds trust: How taxpayers are treated. *Economics of Governance*, 3(2), 87–99.
- Frey, B.S., & Jegen, R. (2001). Motivation crowding theory. *Journal of Economic Surveys*, 15(5), 589–611.
- Frey, B.S., & Torgler, B. (2007). Tax morale and conditional cooperation. *Journal of Comparative Economics*, 35(1), 136–159.
- Gagné, M., & Deci, E.L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331–362.
- Gagné, M., Koestner, R., & Zuckerman, M. (2000). Facilitating acceptance of organizational change: The importance of self-determination1. *Journal of Applied Social Psychology*, 30(9), 1843–1852.
- Gangl, K., Hofmann, E., Groot, M. de , Antonides, G., Goslinga, S., Hartl, B., & Kirchler, E. (2015). Taxpayers' motivations relating to tax compliance: Evidence

- from two representative samples of Austrian and Dutch self-employed taxpayers. *Journal of Tax Administration*, 1(2).
- 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.
- Hartner, M., Rechberger, S., Kirchler, E., & Schabmann, A. (2008). Procedural fairness and tax compliance. *Economic Analysis and Policy*, 38(1), 137–152.
- Hashimzade, N., Myles, G.D., & Tran-Nam, B. (2013). Applications of behavioural economics to tax evasion. *Journal of Economic Surveys*, 27(5), 941–977.
- Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hessing, D.J., Elfers, H., & Weigel, R.H. (1988). Exploring the limits of self-reports and reasoned action: An investigation of the psychology of tax evasion behavior. *Journal of Personality and Social Psychology*, 54(3), 405–413.
- Houser, D., Xiao, E., McCabe, K., & Smith, V. (2008). When punishment fails: Research on sanctions, intentions and non-cooperation. *Games and Economic Behavior*, 62(2), 509–532.
- Jacobsen, C.B., Hvited, J., & Andersen, L.B. (2014). Command and motivation: How the perception of external interventions relates to intrinsic motivation and public service motivation. *Public Administration*, 92(4), 790–806.
- Kamleitner, B., Korunka, C., & Kirchler, E. (2012). Tax compliance of small business owners: A review. *International Journal of Entrepreneurial Behaviour & Research*, 18(3), 330–351.
- Kirchler, E. (2007). *The economic psychology of tax behaviour*. Cambridge: Cambridge University Press.
- Kirchler, E., Hoelzl, E., & Wahl, I. (2008). Enforced versus voluntary tax compliance: The “slippery slope” framework. *Journal of Economic Psychology*, 29(2), 210–225.
- Kirchler, E., & Wahl, I. (2010). Tax Compliance Inventory: TAX-I Voluntary tax compliance, enforced tax compliance, tax avoidance, and tax evasion. *Journal of Economic Psychology*, 31(3), 331–346.
- Kunz, A.H., & Pfaff, D. (2002). Agency theory, performance evaluation, and the hypothetical construct of intrinsic motivation. *Accounting, Organizations and Society*, 27(3), 275–295.
- Legge, J. (2001). *The Chinese classics*. Safety Harbor, FL: Simon Publications.
- Lepper, M.R., & Henderlong, J. (2000). Turning “play” into “work” and “work” into “play”: 25 years of research on intrinsic versus extrinsic motivation. In C. Harackiewicz and J.M. Sansone (eds.) *Intrinsic and extrinsic motivation* (pp. 257–307). San Diego: Academic Press.
- Miserandino, M. (1996). Children who do well in school: Individual differences in perceived competence and autonomy in above-average children. *Journal of Educational Psychology*, 88(2), 203–214.
- Onu, D. (2016). Measuring tax compliance attitudes: What surveys can tell us about tax compliance behaviour. In J. Hasseldine (ed.) *Advances in taxation* (Vol. 23, pp. 173–190). Bingley: Emerald Insight.

- Onu, D., Oats, L., & Kirchler, E. (2016). Gaming the system: An investigation of small business owners' attitudes to tax avoidance and tax evasion. Manuscript in preparation.
- Osbaldiston, R., & Sheldon, K.M. (2003). Promoting internalized motivation for environmentally responsible behavior: A prospective study of environmental goals. *Journal of Environmental Psychology, 23*(4), 349–357.
- Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, and organizational forms. *Organization Science, 11*(5), 538–550.
- Pickhardt, M., & Prinz, A. (2013). Behavioral dynamics of tax evasion—A survey. *Journal of Economic Psychology*. <https://doi.org/10.1016/j.joep.2013.08.006>
- Preacher, K.J. (2016). A primer on interaction effects in multiple linear regression. Retrieved 31 March 2016, from: <http://www.quantpsy.org/interact/interactions.htm>
- Reiss, S. (2004). Multifaceted nature of intrinsic motivation: The theory of 16 basic desires. *Review of General Psychology, 8*(3), 179–193.
- Ryan, R.M., & Deci, E.L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54–67.
- Ryan, R.M., & Deci, E.L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78.
- Ryan, R.M., Plant, R.W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement, and dropout. *Addictive Behaviors, 20*(3), 279–297.
- Schulze, G.G., & Frank, B. (2003). Deterrence versus intrinsic motivation: Experimental evidence on the determinants of corruptibility. *Economics of Governance, 4*(2), 143–160.
- Slemrod, J., Blumenthal, M., & Christian, C. (2001). Taxpayer response to an increased probability of audit: Evidence from a controlled experiment in Minnesota. *Journal of Public Economics, 79*(3), 455–483.
- Smith-Crowe, K., Tenbrunsel, A.E., Chan-Serafin, S., Brief, A.P., Umphress, E.E., & Joseph, J. (2014). The ethics “fix”: When formal systems make a difference. *Journal of Business Ethics, 131*(4), 791–801.
- 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. (2005). Tax morale and direct democracy. *European Journal of Political Economy, 21*(2), 525–531.
- Torgler, B., & Schneider, F. (2002). Does culture influence tax morale? Evidence from different European countries. Wirtschaftswissenschaftliches Zentrum (WWZ) der Universität Basel. Retrieved from <http://www.crema-research.ch/papers/2004-17.pdf>
- Webley, P., Cole, M., & Eidjar, O.-P. (2001). The prediction of self-reported and hypothetical tax-evasion: Evidence from England, France and Norway. *Journal of Economic Psychology, 22*(2), 141–155.
- Wenzel, M. (2004a). An analysis of norm processes in tax compliance. *Journal of Economic Psychology, 25*(2), 213–228.

- Wenzel, M. (2004b). The social side of sanctions: Personal and social norms as moderators of deterrence. *Law and Human Behavior*, 28(5), 547–567.
- Wenzel, M. (2005). Motivation or rationalisation? Causal relations between ethics, norms and tax compliance. *Journal of Economic Psychology*, 26(4), 491–508.
- Yitzhaki, S. (1974). A note on 'Income tax evasion: A theoretical analysis'. *Journal of Public Economics*, 3(2), 201–202.

APPENDIX

Internalised motivation

When I pay my taxes as required by the regulations, I do so . . .

- a. . . because to me it's obvious that this is what you do.
- b. . . to support the state and other citizens.
- c. . . because I like to contribute to everyone's good.
- d. . . because for me it's the natural thing to do.
- e. . . because I regard it as my duty as citizen.

Extrinsic motivation

When I pay my taxes as required by the regulations, I do so . . .

- a. . . because a large number of tax checks are carried out.
- b. . . because the tax office often carries out checks.
- c. . . because I know that I will be audited.
- d. . . because the punishments for tax evasion are very severe.
- e. . . because I do not know exactly how to evade taxes without attracting attention.