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Do trust and power moderate each other in relation to tax compliance?

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Abstract

This paper examines the assumptions of the *Slippery Slope Framework* using cross-country data; an area which has been neglected since the emergence of the framework in 2008. Several studies in this area have tested the assumption of the framework using primary data collected through survey with students or real taxpayers as subjects. Hence, this study tests these assumptions using statistical data generated from an institutional database. The empirical result from our sample indicates that trust in and power of authorities strongly interacts in explaining tax compliance.

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1. Introduction

The *deterrence models* fail to explain fully why taxpayers pay tax even if there is no enforcement (Torgler, 2002, 2003). The proponents of the models (Allingham & Sandmo, 1972; Srinivasan, 1973), proposed that deterrence variables, i.e., tax audit and sanctions, explain tax compliance. Though these variables remain significant, however, the concept of *psychological tax contract* has been introduced to provide more insights into why individuals pay tax without enforcement (Feld & Frey, 2007; Torgler, Demir, Macintyre, & Schaffner, 2008).

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Thus, the *Slippery Slope Framework* has been introduced to provide robust explanation (Kirchler, Hoelzl, & Wahl, 2008). The proponents of the framework hypothesized that both trust and power interact (moderate) in explaining tax compliance. The emergence of this framework has led to researchers, especially in Europe, testing its assumptions (Kastlunger, Lozza, Kirchler, & Schabmann, 2013; Kirchler, et al., 2008; Kirchler, Hofmann, & Gangl, 2012; Kogler et al., 2012).

The current study is important in three ways: First, studies to test the assumptions of the framework have used either students or real taxpayers as subjects. Scant literature is available that examines such assumptions using cross-country data, although there is some evidence that cross-country data has been used in tax compliance studies (Halla, 2012; Porcano, Tsakumis, & Curatola, 2011; Riahi-Belkaoui, 2004; G. Richardson, 2006). Therefore, this study uses cross-country data to fill the void in the literature. Second, the study tests whether trust and power moderate each other as hypothesized by the proponents of the framework. This is important, as previous tax compliance studies have neglected the test of the moderation effect in cross-country analysis. Finally, it also provides evidence from Sub-Saharan Africa regarding the *Slippery Slope Framework*, which is currently lacking.

Section two of the paper reviews relevant available literature that tests the assumption of the *slippery slope framework*. Section three discusses the methodology used to conduct the study. In the fourth section, the analysed results are presented. Finally, a conclusion is drawn.

2. Tax compliance

Tax compliance is defined as the reporting of all incomes and tax payments to the relevant tax authority in a timely manner using the applicable tax laws and regulations, as well as court orders (Jackson & Milliron, 1986). It can also be defined as an individual's "act of filing tax returns, declaring all income accurately for tax purposes and paying tax liabilities on the due dates as stipulated by the authority or applicable tax laws" (Palil & Mustapha, 2011). Tax compliance is divided into two perspectives: administrative compliance, i.e., adherence to applicable tax laws; and judicious compliance, i.e., in terms of accurate completion of tax returns (Chow, 2004). Tax compliance can take two forms: Voluntary and Enforced tax compliance. Voluntary tax compliance is defined as "timely filing and reporting of required tax information, the correct self-assessment of taxes owed and the timely payment of those taxes without enforcement action" (Silvani & Baer, 1997, p. 11). It can be deduced that in voluntary tax compliance, taxpayers pay tax willingly without enforcement action by assessing himself/herself and paying the correct amount of his/her tax liability to the relevant authority, using appropriate procedure under the relevant laws and regulations. However, enforced compliance can be described as a situation in which taxpayers' willingness to pay tax is as a result of fear of detection. Voluntary compliance is achieved through trust, while enforced compliance is through power. Therefore, this study investigates how trust and power affect tax compliance in both direct and interactive relationships.

2.1 The concept of slippery slope framework

In an effort to understand how tax compliance is explained by deterrence and non-deterrence variables, the *slippery slope framework* has been introduced into tax compliance studies (Kirchler, et al., 2008). The framework tries to explain why taxpayers pay tax through deterrence and non-deterrence measures. The framework presents four assumptions, i.e., tax compliance can be explained by: 1) high trust and low power; 2) high power and low trust; 3) high power and high trust; and 4) the interaction of both power and trust as they moderate each other. Trust in authority means that taxpayers perceive that the authorities are compassionate and act in such a way to benefit the general public; their decisions are always for the benefit of common citizens. This means that authorities always act in such a manner that ensures good governance, which can free the society from corrupt practices. On the other hand, power of authorities refers to taxpayers' perception of the ability of tax officers to detect illegal tax noncompliance, through rigorous audit to detect evasion; and the authorities' power to fine the evaders.

2.2 Prior research on the empirical analysis of the slippery slope framework

To confirm the assumptions of the *slippery slope framework*, the first empirical analysis was conducted two years after its introduction (Wahl, Kastlunger, & Kirchler, 2010). The authors tested the main hypotheses of the *slippery slope framework* in two experiments using students and self-employed taxpayers. The results from the two samples showed that voluntary tax compliance is high when the authorities are trustworthy. Similarly, Kastlunger et al. (2013) tested the assumptions of the *slippery slope framework* through model testing. Their work improved the existing evidence about the framework by distinguishing coercive power from legitimate power. Their study correlated tax evasion as a dependent variable with five independent variables: enforced tax compliance, voluntary tax compliance, legitimate power, coercive power and trust. The result showed that trust in authorities improves voluntary compliance, and voluntary tax compliance has a strong negative relationship with tax evasion. A similar result was obtained by Muehlbacher et al. (2011) who also found the combined effect of trust and power on tax compliance.

Additionally, assumptions of the *slippery slope framework* were tested in four European countries (Kogler, et al., 2012). The study tested the mediation effect of voluntary tax compliance, enforced tax compliance and strategic tax compliance on the relationship between tax compliance behaviour and its three determinants: trust, power and country. Results indicated that the assumptions of the framework hold in those four countries. In a similar study, Pellizzari & Rizzi (2013) presented a more robust model with heterogeneous agents who maximized their individual utility based on after-tax income and the conjectured level of per capita public expenditure. The study extended the *slippery slope framework* by using more improved measures of voluntary compliance called citizenship. The model depicted the relationship between tax compliance as a dependent variable and citizenship (perception of public expenditure, peer influence, risk aversion, morality) and power as independent variables. The result showed that the independent variables have an effect on tax compliance. However, citizenship had more influence on compliance than power.

Findings from these studies show that tax compliance can be explained by the existence of both trust and power, and the interaction between them. However, previous studies used primary data collected via questionnaires. No attempt has been made to test these assumptions using cross-country data, although as indicated earlier, some cross-country data is evident in tax compliance studies (Halla, 2012; Porcano, et al., 2011; Riahi-Belkaoui, 2004; G. Richardson, 2006; M. Richardson & Sawyer, 2001). Therefore, this study intends to use a different research dimension to test the framework's assumptions. Hence, the following hypotheses are developed under the cross-country approach:

H1 Trust in authorities is significantly related to tax compliance.

H2 Power of authorities is significantly related to tax compliance.

H3 Trust in authorities and power of authorities have joint significant relationship with tax compliance.

H4 Trust in authorities and power of authorities moderate each other in the relationship with tax compliance

3. Methodology

This section presents the methodology used to conduct this study. Specifically, the section discusses the population, sample, variables and its measurement, data as well as the research model.

3.1 Population and sample

The study comprises a population of 49 African countries as disclosed by the World Bank Group (WBG) (2012). Of these 49 countries, 29 serve as sample for the study. Nine countries did not fit in the study due to inconsistent data; 11 countries were deleted for being outliers. Thus, we arrived at a final sample of 29 countries. It is noted that in a regression model, a sample of 10-15 observations for each predictor variable can allow a good

estimate of the model (Babyak, 2004). This study has two predictor variables and the number of observations is 29 countries; hence, it meets the minimum requirement as noted by Babyak (2004).

3.2 Variables and variable measurement

The dependent variable, tax compliance (TC) was measured using tax as percentage of Gross Domestic Product (GDP) for all the countries in our sample. The data was sourced from the Central Intelligence Agency (CIA) World Fact Book for 2012. Scores of 1-10 from the cross-country data were generated by dividing tax as percentage of GDP by 100 and multiplying by 10. Therefore, the scores ranged from 1-10, where 10 signified high compliance and 1 signified low compliance.

For the first independent variable, i.e., trust (TRUST), Transparency International (TI) and Corruption Perception Index (CPI) were used as proxies. Similar studies on cross-country analysis, such as (Kastlunger, et al., 2013; Torgler, Schaffner, & Macintyre, 2007; Torgler & Schneider, 2009) used the same indicators as proxies of trust.

For the second independent variable, i.e., power (POWER), the Rule of Law was used as a proxy based on definition of power by the WBG, as contained in the Worldwide Governance Indicators (WGI) (2012). (Kastlunger, et al., 2013) used a similar indicator as proxy to compare Austria with other European countries in terms of power of authorities. The Rule of Law was measured in WGI based on the methodology used by Kaufmann, Kraay and Mastruzzi (2010).

3.3 Data

The data was sourced from three different databases. For tax compliance, i.e., tax as percentage of GDP as a proxy, data was sourced from the United States (US) CIA database (2012). CPI data which was used as a proxy of trust in authorities was sourced from the TI report (2012). Lastly, the Rule of Law data which was used as a proxy for power was sourced from the WBG report also for (2012).

3.4 Research models

Therefore, from the above variables, the following models were formulated:

$$TC_i = \beta_0 + \beta_1 TRUST_i + \mu_i \quad (1)$$

$$TC_i = \beta_0 + \beta_1 POWER_i + \mu_i \quad (2)$$

$$TC_i = \beta_0 + \beta_1 TRUST_i + \beta_2 POWER_i + \mu_i \quad (3)$$

$$TC_i = \beta_0 + \beta_1 TRUST_i + \beta_2 POWER_i + \beta_3 POWER \times TRUST_i + \mu_i \quad (4)$$

Where TC_i is tax compliance rating for a country, β_0 constant, $TRUST$ is the trust in authorities, $POWER$ is power of authorities and μ the error term.

4. Result and discussions

Table 1 presents the regression results of trust and power independently, the joint effect of trust and power and the interaction effects of trust and power.

Table 1. Regression Analysis

Independent Variable	Model 1 (Trust Individually)	Model 2 (Power Individually)	Model 3 (Trust and Power)	Model 4 (Interaction Effect)
Constant	0.010 (2.782)*	0.000 (8.262)*	0.001 (3.842)*	0.000 (4.206)*
Trust	0.354 (0.944)	NIL	0.035 (-2.227)*	0.018 (-2.532)*
Power	NIL	0.095 (1.733)	0.012 (2.702)*	0.010 (2.788)*
Power X Trust	NIL	NIL	NIL	0.026 (2.358)*
R ²	3%	10%	24.4%	39.2%
R ² Adjusted	-0.04%	0.67%	18.9%	31.9%
F	0.891	3.002	4.201*	5.364*
F test significance	0.354	0.095	0.026*	0.005*

Note. Dependent Variable: TC. * Significant at $\alpha = 0.05$

In Table 1, model 1 presents the result of the relationship between TRUST and TC for testing hypothesis one. The results for H_1 show insignificant relationship between TRUST and TC at 0.05 ($t = 0.944$, $p = 0.357$). This does not support our hypothesis that trust is significantly related to tax compliance. The result is consistent with the assumption of the *slippery slope framework* that tax compliance is explained by a combination of trust and power (Kirchler, et al., 2008). Equally, R^2 is found to be very weak (-0.04). Cohen (1988) has pointed out that R^2 for single predictor variable is weak if it is 0.02 and below, moderate if it is 0.13 and substantial if it is 0.26 and above.

Likewise, for H_2 , model two presents the result on the relationship between POWER and TC, which is also insignificant at 0.05 ($t = 1.733$, $p = 0.095$). Similar to H_1 , the result is consistent with the assumption of the *slippery slope framework* that tax compliance is explained by a combination of trust and power. Similarly, the R^2 of 0.067 is not up to 0.13 for the moderate range, as indicated by Cohen (1988).

Furthermore, for H_3 , model three presents the result on the relationship between TRUST, POWER and TC which is significant at 0.05 ($t = -2.227$, $p = 0.035$) for TRUST and TC, and $t = 2.702$, $p = 0.012$, for POWER and TC. This confirms our hypothesis that TRUST and POWER are significantly related to TC. This is consistent with the assumption of the *slippery slope framework* that combination of TRUST and POWER (high trust/low power, low trust/high power or high trust/high power) can explain TC (Kirchler, et al., 2008). Moreover, R^2 has improved from weak to moderate (0.189), as it exceeds the threshold of 0.13.

Lastly, for H_4 , model 4 presents the result of moderating/interaction effect of TRUST and POWER in relation to TC, which is found to be positive and significant at 0.05 ($t = 2.358$, $p = 0.026$). Apart from p and t values which have improved compared to those in other models, other statistics confirm this moderating effect. For instance, R^2 in this model is higher than that of the other models; it is found to be substantial (0.319), as it is greater than the threshold of 0.26. The result is consistent with the assumption of the *slippery slope framework* that TRUST and POWER moderate each other (Kirchler, et al., 2008). To a certain extent, the results from these analyses depict a significant level of reliability based on results from similar studies (Riahi-Belkaoui, 2004; G. Richardson, 2006, 2008).

5. Conclusion

This study examines the assumptions of the *slippery slope framework* using cross-country data. More specifically, it examines the moderating effect of trust and power in explaining tax compliance as proposed by the framework. The findings from the study show that the assumptions of the *slippery slope framework* hold even in empirical cross-country analysis. It also shows that there is strong interaction effect between trust and power in explaining tax compliance. Further, it shows that the presence of trust in authorities alone without power of authorities to detect evasion and punish evaders, may not improve tax compliance. Similarly, the power of authorities alone, without trust in authorities by citizens, also may not improve tax compliance. The result clearly indicates that tax compliance improves through the combination of trust in and power of authorities. By implication, if African countries are so concerned with improving tax compliance, they should be committed to increasing the level of trust that their citizens have on the government, as well as use their power to enforce compliance. This can be done by providing high quality of services and building high quality institutions. At the same time, tax authorities must beef-up their efforts to detect and punish evaders. If these two measures are undertaken and enforced, the result would be improvement in tax compliance among African countries.

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