

Full Length Research Paper

Tax costs and tax compliance behaviour in Kenya

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Received 3 October 2017; Accepted 18 December, 2017

This study examines the influence of measures of tax compliance costs on tax compliance behaviour among medium and large corporate taxpayers in Kenya. It uses a Structural Equation Modelling (SEM) technique to establish the key cost drivers built using survey data, while controlling for key attributes of the tax system as well as firm characteristics. The results indicate that tax compliance in Kenya significantly declines with increase in tax compliance costs, particularly those related to understanding of the existing complex tax laws, changes in tax rules as well as general costs of meeting the compliance and regulatory requirements. The model constructs account for about 40% of variations in tax compliance behaviour in Kenya, which is above the empirically accepted minimum for exploratory studies. From the results, the study recommends a focus by tax authority and policymakers on measures to reduce these identified tax compliance costs. In addition, greater emphasis should be put on investing in opportunities that reduce financial pressure on firms thus encouraging tax compliance.

Key words: Tax costs, tax compliance behaviour, income tax, corporate taxpayers, Kenya.

INTRODUCTION

Tax compliance^a is an important government policy issue for developing countries for several reasons. First, tax revenue is the bread-and-butter of state and local governments (Slemrod, 2015). In Kenya, it is the single largest source of government revenue. Second, taxation is the most viable strategy in the long run to wean a country out of foreign aid dependency.

Developing countries are already financing most of their budgets with taxation, but the least developed countries are still highly dependent on foreign assistance (Mascagni, Moore and McCluske, 2014). Higher reliance on domestic, non-resource and non-aid revenues would allow for a higher level of stability, predictability and control in the budget process. An international monetary

fund (IMF) working paper found that “for each additional percentage point of gross domestic product (GDP) in resource revenue, there is a corresponding reduction in domestic (non-resource) revenues of about 0.3% points of GDP” (Crivelli and Gupta, 2014). Due to the significance of tax revenues, tax administrators in most countries usually put an enormous effort into understanding and dealing with noncompliance. However, most of the previous tax compliance studies have focused on developed countries, mainly in the US, UK and Australia. There is still very little literature on tax compliance behaviour in developing countries in general and Africa in particular, and more so focusing on the corporate taxpayers-notwithstanding the role played by

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^aThis study defines tax compliance as the ability of taxpayers to obey tax laws made by tax authority, to inform their real income in tax return and to pay the amount of tax correctly, in which it must be conducted at the right time appropriate with the tax regulation (Palil and Mustapha, 2011).

this segment in overall tax revenue mobilization. In dealing with noncompliance, most tax authorities have used deterrence as a policy instrument of choice (Schneider, 2011). However, Devos (2014) recommends that selective demographic and other variables should be included in an expanded model in order to best measure deterrence. This will not only ensure that deterrent measures are revealed but more importantly, how taxpayers' perceptions of deterrent measures are formed. In this regard, demographic and cost considerations emerge as important determinants of tax compliance behaviour. The Kenya Revenue Authority (2013) estimates noncompliance in Kenya at around 50% of collectible taxes. In this regard, the need to understand the determinants of tax compliance remains a fundamental concern to policymakers. Most importantly, there is an increasing need for research to focus on the influence of tax compliance costs on tax compliance. Kenya has a small tax base comprising mainly of the large corporate taxpayers that contribute on average about 50% of the total domestic tax revenues collected through income tax revenue (KRA, 2015). This study seeks to examine the influence of tax compliance costs on tax compliance among corporate income taxpayers in Kenya. The specific objectives of the study include an identification of the influence of specific measures of tax compliance costs on compliance behaviour.

This study is important in providing insights on possible means of enhancing income tax compliance, and thus revenue collection. Developing countries raise substantially less revenue than advanced economies. The ratio of tax to GDP in low-income countries is between 10 and 20% whereas for organisation for economic co-operation and development (OECD) economies are in the range of 30 to 40% (International Monetary Fund, 2014). These ratios show that there is still a lot of research required to improve tax revenue mobilisation. In this regard, this study would be beneficial to tax authorities in developing countries in general and Kenya in particular.

LITERATURE REVIEW

Evans and Tran-Nam (2014) observe that there are two main types of tax compliance costs that a taxpayer can incur gross monetary and psychological costs. Gross monetary compliance costs include both actual money paid and opportunity costs relating to the time and other resources expended when complying with tax laws whereas psychological costs involve the estimation of stress and anxieties resulting from complying with tax laws (Evans and Tran-Nam, 2014).

In this study, tax compliance costs refer to the monetary compliance costs. Most of the studies on compliance costs have measured the compliance costs that firms and individuals incur in complying with tax laws. For example, Evans and Tran-Nam (2014), who

comprehensively reviewed research on tax compliance costs in New Zealand, concluded that tax compliance costs in that country were large and regressive, with tax reforms failing to reduce them. The same conclusions were observed by Lignier et al. (2014) who surveyed 10,000 SME taxpayers in Australia, and found that small and medium-sized enterprises (SMEs) faced high, regressive and increasing tax compliance costs. Luca et al. (2012) found limited studies on how tax compliance costs relate to tax compliance levels, and thus recommended further studies to determine the relationship between compliance costs and compliance behaviour.

Besides focusing on tax compliance, it is important that other attributes of the tax system are controlled for. These include tax fairness, simplicity, as well as firm characteristics such as firm size, age, legal and ownership structures. Erich et al. (2006) argues that tax fairness (or equity) can be captured from varied perspectives, that is, vertical, horizontal, procedural and exchange fairness. All these measures of fairness tend to show a positive association with tax compliance (Slemrod, 2007). Complexity in tax laws and tax compliance costs are positively interlinked (Evans, 2003; Marcuss et al., 2013). Marcuss et al. (2013) found a positive relationship between the level of complexity of income tax and the level of tax compliance costs. In addition, complex tax laws may require sophisticated accounting records, which may necessitate hiring bookkeepers, therefore increasing tax compliance costs (Schoonjans et al., 2011). Evans and Tran-Nam (2010) enlists four additional perspectives that need attention, including policy, statutory, administrative and compliance complexity¹.

The firm specific characteristics should also be included as potential determinants of tax compliance. Factors such as business profile, industry and economic elements (OECD, 2004) may have an influence on corporate compliance. Sapiei et al. (2014) examined corporate taxpayers in Malaysia, and found that tax complexity, firm age and tax liability have an effect on tax noncompliance behaviour through three ways, that are understatement income, over charged cost and both of them combined. Yusof et al. (2014) found the size of business also has the affect with a negative sign,

¹Evans and Tran-Nam (2010) define policy complexity as the number of all taxes at various levels of government in a country, tax expenditures relating to business taxpayers as a proportion of tax revenue collected from businesses; and proportion of business taxpayers affected by those taxes; Statutory complexity measures the length of tax laws; readability of tax laws; proportion of business taxpayers requesting private rulings; proportion of external tax disputes by business taxpayers; frequency of tax rule changes; administrative complexity which covers the tax administrative costs incurred by revenue authorities as a proportion of tax revenue collected; frequency of tax reporting; and frequency of tax payments; and, compliance complexity, which captures taxpayers' tax compliance costs as a proportion of GDP, the extent of use of professional tax advisers as well as use of IT in tax administration/business interactions.

meaning that small companies have more noncompliance than large companies because the tendency to maintain the reputation is lower than larger business.

McKerchar (2003a) observes that despite the large volume of research undertaken on tax compliance there is still no consensus on an optimal tax compliance model due to limited access to actual compliance data. One way of dealing with this problem is to conduct a survey study, and obtain the data directly from the tax payers rather than from the revenue authority. In addition, examining taxpayer behaviour is complex and challenging as the relevant literature emanates from a variety of disciplines including economics, psychology, and sociology.

Most previous studies on compliance have focused more on the individual rather than the corporate taxpayer. This has been attributed to the fact that the tax revenue generated from individual taxpayers represents a major single contribution to government in most of the western countries. However, this is not the case in Kenya. Nonetheless, several tax compliance studies (Abdul-Jabbar, 2009; Hani and Sapiei et al, 2014), have acknowledged that prior tax compliance studies on individuals provide a formal framework for the analysis of corporate tax compliance decisions.

Despite this, it must be recognised that for corporate, non-compliance requires multiple parties to behave strategically and that evidence on individual tax noncompliance behaviour cannot be directly extrapolated to corporate tax behaviour (Chan and Mo, 2000). More appropriate, non-human factors, applicable to the corporate taxpayer, such as business profile, industry and economic elements should be considered (OECD, 2004).

METHODOLOGY

This survey-based study adopts Structural Equation Modelling (SEM) for analysis of its objectives. The approach was pioneered by Jöreskog (1973). Before a review of this approach, a brief discussion of the population and the sampling procedure adopted is carried out. The population includes three categories of tax payers; large and medium-size tax payers.²

As at 1st May 2016, 1,315 companies were registered as large tax payers and 1,538 companies registered as medium sized tax payers. Due to the nature of the population, stratified sampling technique is adopted to generate a sample of 200 firms from the two main strata; large and medium-sized private firms. A sample size of 100 is considered sufficient in SEM applications as long as measurement is good where Ave is 0.5 or better (Hair et al., 2017). In this regard, and based on the proportions of the firms in the total population, the study targets 92 large-sized firms and 108 medium-sized firms³. 200 firms operate in 19 key sectors of the economy.

² KRA defines large tax payers as those with an annual turnover of \$7.5million and above and provides a comprehensive list of all large companies. A medium tax payer company is one with an annual turnover of between \$3 million and \$7.5 million per annum

³ The sample of large firms to be targeted for the study is obtained by multiplying the proportion of large firms in the population by 200, i.e.

Survey primary data were collected using a structured questionnaire. The survey method has been used extensively in tax compliance studies (Sapiei et al., 2014; Mohammed, 2016). The primary respondent to the questionnaires was the tax manager or the accountant in these firms who are directly involved in firm tax compliance. Some of the tax managers filled the questionnaire and sent it via email (these were mainly managers based in towns far away from the capital city), and the others filled the questionnaire which was later picked by the researcher.

The questionnaire was divided into four parts. The first part captured the four demographic characteristics of the businesses in the sample: the size (as measured by turnover), age of the business (as measured by the number of years in operation), the industry/sector in which the company operates and the legal structure of the company (whether limited liability, Public company etc.). These demographic variables have been used in other studies with mixed results, Hanlon et al. (2007) assessed the impact of the following corporate characteristics: firm size, industry, foreign ownership, multi-nationality on compliance behaviour. Larger firms were found to be more noncompliant.

Abdul-Jabbar (2008) used business size, tax level, compliance costs and perceived tax fairness. His findings on the impact of business age, industry sector, tax rate and incentives on the compliance behaviour of corporate SMEs were inconclusive. Sapiei et al. (2014) used business size, age, business sector and tax liability and found size to be a significant determinant of tax compliance behaviour. The corporate characteristics influence the dependent variable directly. The second part captured the tax compliance behaviour, the dependent variable; this variable is measured by three indicators, namely filing of tax returns, actual tax payment and incidences of tax overpayment (form of tax over-compliance). These variables were influenced by studies such as Chan et al. (2000), Kaplan et al. (1997) and Sapiei et al. (2014).

The third part of the questionnaire captured the tax system characteristics namely: complexity, fairness and compliance costs. The first two variables were used as control variables as they affect compliance costs indirectly. The measurement of estimated tax compliance costs in this study used the methods employed by researchers who have carried out studies in this field such as Evans et al. (1997), Pope (1993) and Evans and Tran-Nam (2010). The study measured compliance costs using both monetary and non-monetary measures as discussed in the findings.

In this study, tax compliance costs refers to the actual money paid in the process of complying with tax laws, for example the actual amount of money paid to external advisers, employees who deal directly with tax matters, time managers used to deal with tax cases, and legal costs of compliance. The last part of the questionnaire captured the variables used to explain the theory of planned behaviour namely: Attitudes towards compliance, intentions to comply and the perceived behavioural control variables.

The SEM technique is a multivariate statistical approach which, unlike other widely used methods, such as multiple regression, multivariate analysis of variance and factor analysis that can only examine a single relationship at a time, combines factor analysis with multiple regressions and facilitate the investigation of a series of dependent relationships (Hair et al., 2011).

SEM is widely used in various social science fields because of its ability to model latent variables while simultaneously taking into account various forms of measurement errors (Hair et al., 2014). This study has several independent variables (determinants of tax compliance) which are not observable and it also has a dependent variable (tax compliance) which will be measured using several constructs. In this case, the choice of SEM is also supported by a

(1,315/2853)*200 which yields 92 firms. Similarly, Medium-sized firms sample is obtained by multiplying their proportion in population by 200.

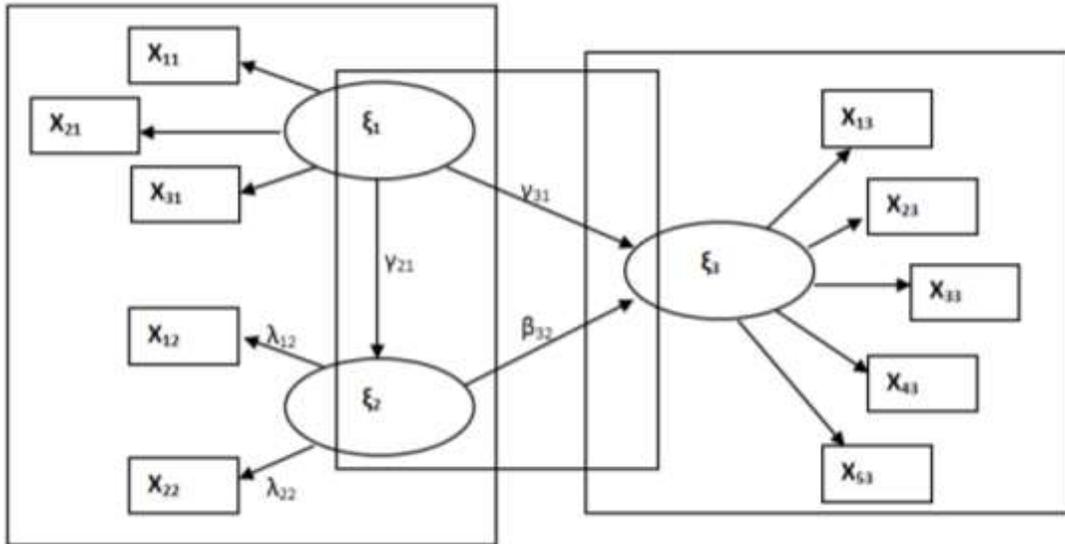


Figure 1. Measurement and structural models in a SEM.
Source: Adopted from Chin (2009).

number of reasons which are desirable for this study. For instance, Haenlein and Kaplan (2004) observe that SEM allows researchers to model measurement error for observed variables⁴; incorporate abstract and unobservable constructs (latent variables) measured by indicators; simultaneously model relationships among multiple predictor and criterion variables; and combine and test of a priori knowledge and hypotheses with empirical data. The complex networks analysis facilitated by SEM characterize real world situation better than correlation-based models. In this regard, it is best suited to serve both theory and practice (Hair et al., 2014). There are two types of variables in SEM: the measured (observed / manifest) variables or indicators and factors (latent variables/ constructs). The basic idea is that a latent variable or factor is an underlying cause of multiple observed behaviours. Factors are weighted linear combinations that are created by the researcher and represent underlying constructs that have been discovered. Variables and factors in SEM may be classified as either “independent” or “dependent” variables; a classification that is commonly based on a theoretical causal model that may be formal or informal. This model generally assumes multivariate normality and linearity of relationships between variables⁵. It is divided into two parts which represent stages in the analysis; the measurement model and the structural model (that relates latent variables to one another).

A SEM model facilitates the evaluation of the measurement and structural models in a single systematic and comprehensive analysis (Gefen et al., 2000; Barroso et al., 2010). This allows measurement errors of the observed variables to be analyzed as an integral part of the model and factor analysis to be combined in one operation with the hypothesis testing (Gefen et al., 2000). A typical SEM model is usually presented in a diagram, as shown in Figure 1⁶.

⁴ Unlike Path analysis methodology that assumes all variables are measured without error.

⁵ This, however, does not completely bar one from including powers of variables to test polynomial relationships.

⁶ The measured variables are within rectangles and the names of factors/ latent variables in ellipses. Rectangles and ellipses are connected with lines having an

The figure illustrates the relationship between a measurement model and the structural model in SEM framework adopted from Chin (2009). The latent variable ξ_1 is the unobserved variable implied by the covariance among the measured block of indicators X_{11} , X_{21} and X_{31} . Similarly, the latent variables ξ_2 and ξ_3 are measured by their associated observed measures; X_{12} & X_{22} and X_{13} , X_{23} , X_{33} , X_{43} & X_{53} , respectively. The number of latent variables represents the number of measurement models of the analysis.

In this case, the three latent variables and their associated indicators represent three measurement models. The relationship among the latent variables is shown by the structural model that is represented by the middle square. The arrows between the latent variables show the path coefficients measuring the relations between the constructs. For this study, there are 10 latent variables, including measures of tax fairness (exchange, procedural, horizontal and vertical), complexity (statutory, legal, administrative and policy), compliance costs and international compatibility of the tax system. These latent variables (constructs) are measured by a total of 55 indicator variables.

There are two approaches to estimate the relationships in SEM which are: covariance based SEM (CB-SEM) and partial least squares (PLS-SEM) (Ringle et al., 2012; Hair et al., 2014). Each of the approaches are appropriate for different research contexts although both of them analyse cause-effect relations between latent constructs (Hair et al., 2014). They differ in terms of their underlying assumptions and parameter estimation procedures. In terms of advantages, compared to CB-SEM, PLS can handle a large number of latent variables, it uses simpler algorithms since the PLS structure is obvious; therefore, estimations of latent variables are more practical. PLS also tolerates the creation of a complex conceptual framework from the multi-block analysis, and it facilitates the work of assessing all the formative latent variables (Hair et al., 2014).

Moreover, in addition to these advantages, the most noticeably cited reasons for using PLS refer to small sample sizes, non-normal data and the use of formatively measured latent variables (Henseler

arrowhead on one (unidirectional causation) or two (no specification of direction of causality) ends.

Table 1. Frequency distribution of measures of how firms deal with tax compliance issues.

Measure	Response	Frequency	Percentage	Cumulative
How company undertakes tax activities	In-House	53	37.32	37.32
	Outsource	7	4.93	42.25
	Both (partially outsource)	82	57.75	100.00
	Total	142	100	-
Presence of a dedicated tax expert /agent or department	Yes	101	73.72	73.72
	No	36	26.28	100.00
	Total	137	100.00	-
Time (days) spent in dealing with tax issues	Nil (0 days)	-	-	-
	1-59 days	28	20.44	20.44
	60-70 days	5	3.65	24.09
	71-90 days	83	60.58	84.67
	91-120 days	15	10.95	95.62
	over 120 days	6	4.38	100.00
	Total	137	100.00	-

et al., 2009). Since the objective of this study is to predict tax compliance behaviour, the PLS approach that is prediction-oriented would be preferred since it offers better prediction capability alongside the other benefits listed earlier.

In general, SEM is composed of two sub-models, the measurement model and the structural model (Hair et al., 2014). The measurement model identifies the nature of the relationship between the manifest indicators and latent variables whereas the structural model deals with the causal relationships among the latent variables.

RESULTS AND DISCUSSION

Based on the stratified sample of 200 participants, a total of 142 questionnaires were duly filled and returned. This represents 71% response rate. As such, data screening was done by checking for completeness and consistencies.⁷ Apparently, no observation had more than 10 missing data points, posing limited danger to unbiasedness of results.

In this case, all the observations were used for analysis. It is necessary for all parametric statistical techniques to assess normality and the presence of outlier observations. Normality test was performed by evaluating skewness and kurtosis as in Pallant (2011). Results on descriptive statistics presented in Table A1 in the Appendix show that a majority of the skewness and kurtosis were within the acceptable range of +/- 2. However, for a large sample size, the influence of excess

kurtosis or skewness is minimal on results (Hair et al., 2011).

An extreme value analysis was also done to ascertain the existence and potential impact on estimation results (Pallant, 2011). The 5% trimmed means statistic is used as a threshold to assess whether any extreme values are distorting the results. The top and bottom 5% of the extreme cases are removed from analysis. The results show that a majority of the variables have their mean values not significantly different after trimming. Data description through an analysis of the mean, standard deviation, and min/max scores therefore followed (Table A1 in the Appendix). They represent main indicators of the TPB (particularly the perceived behavioural and subjective norm), tax fairness, complexity, international compatibility and tax compliance measures. Since this study focuses on the influence of tax costs measures on compliance, the discussions exclude the rest of the control variables in the model. However, a detailed description of the measures is presented in Table A2 in the Appendix.

On the measures of tax compliance costs, tax compliance costs are reviewed on the basis of how company undertakes tax related activities, and the time each firm takes to deal with tax matters. It is evident from Table 1 that while only 38% deal with tax matters in-house, a very small majority (5%) fully outsource the service to experts or agents. Notably, slightly over half of the (58%) partially deal with tax issues in-house while some activities are outsourced to tax experts/agents. Out of all the firms sampled, 74% have a dedicated tax expert or department to deal with tax matters. In terms of days spent in dealing with tax issues, a majority of firms (61%) use between 70 and 90 days. There is however a notable proportion (20%) that use less than 60 days.

⁷ In particular, consistency checks were conducted by comparing and cross-checking the responses to similar questions. This examination revealed that very few items were overlooked or disregarded and consistencies in responses were apparent. The variables were also checked for missing observations. The idea was to isolate variables with more than 10 missing observations.

In addition, the study further analysed the reasons for firms' use of tax experts / agents when dealing with tax issues. The results show that while 83% of the firms believe that there would be faster resolution of tax disputes if an agent is engaged, 62% additionally believe that tax agents would enhance the firm's ability to legitimately minimise their tax liabilities. In terms of the direct monetary costs in tax administration, it is evident that over 86% of firms spend less than US\$ 100,000 every year on tax administrative costs such as accountant fees, legal fees and other internal costs. Out of this, 36% of them spend between US\$ 10,000 and US\$ 100,000. It is noteworthy to indicate that 27% of firms spend less than US\$ 5,000 on tax administration and only 9% of the firms spend over US\$ 200,000 (Table 1).

The dependent variable; tax compliance is measured by three indicators, namely filing of tax returns, actual tax payment and incidences of tax overpayment (form of tax over-compliance). In terms of filing of tax returns (BEHV2), which has been a statutory requirement since 2002, data shows that a majority of the firms (126 out of 142 firms or 88.7%) fully comply, as 11.3% partially comply. None of the firms indicated nil compliance. This may be because of the fact that, unlike for small firms that can hide from being thoroughly scrutinized by the tax authority, the medium and large firms have too much exposure that their presence and operations are clearly evident to the tax authority.⁸

In terms of timely payment of tax liabilities (BEHV3) as stipulated by the guidelines, 120 firms out of the sampled 142 firms (84.5%) always made tax payments as and when the payments fell due; 11.9% of them made their tax payments four times in a year, and only 1.4% of the firms made tax payment once in a year.⁹ Based on tax over-compliance (BEHV4), 60.0% of the firms did not over-pay their taxes. Out of the 40.0% that overpaid, 21.4% overpaid once while 9.3% and 6.4% overpaid, twice and thrice, respectively.

Tax overpayment reflects failure on the part of firms to accurately compute their tax liabilities and the fear to meet penalties imposed when full tax payments are not remitted. Out of the 120 firms that fully comply with timely tax payments, 119 fully comply with submission of tax returns and the remaining firm partially submits tax returns. Similarly, out of the 17 firms that make tax payments four times in a year, only 4 firms fully comply with tax returns. There are notable 2 firms that fully comply with submission of returns but do not make tax payments - an indication of firms enjoying tax exemptions.

A very large majority of the firms actually make tax payments. This means that a majority of the responses

can be credibly associated with relevant information for examining tax compliance behaviour from the view of actual tax payments. In terms of tax payment and overpayment, the data shows that out of the 118 firms that always made tax payments as and when tax fell due, more than half (73 firms) did not make any tax overpayment, while 26 of them overpaid once as 7 and 9 firms made overpayments twice and thrice, respectively. In total, 56 firms out of 142 sampled made some form of overpayment of taxes with a majority of them overpaying taxes between once and three times.

Model evaluation results

Here, the models that explain tax compliance behaviour are evaluated based on the TPB. This involves an examination of the relationships of the elements of TPB and other tax compliance variables with an objective of providing their link to actual tax compliance behaviour. The study adopts the validation guidelines provided in literature (Straub et al., 2004; Chin, 2010; Gotz et al., 2010; Smart, 2012), where the measurement models are subjected to four main tests, including indicator reliability (loadings), construct reliability (composite reliability), convergent validity (average variance extracted (AVE) analysis and discriminant validity (square root of AVE and loadings and cross loadings analysis). These validity and reliability tests provide some level of assurance that the survey items are capturing the constructs that they are designed to capture.

The exploratory nature of this study required that a majority of the measures used in analyses to develop models were newly created, while some were adopted from previous studies. In this regard and in many cases, a large number of measures were used with the expectation that some may not meet the required test. Measures not meeting the requirements were eliminated from analysis. A commonly accepted minimum threshold for loadings is 0.707 which technically implies more shared variance between the constructs and its measures than error variance (Hulland, 1999; Barroso et al., 2010; Gotz et al., 2010). In cases where new items for newly developed scales are employed, it is common to have several items in an estimated model with loadings measuring less than the threshold.

In this study, an item trimming process was done that involved dropping of measures with negative loadings and those with very low loadings one at a time, until most measures achieved reasonable loadings compared with the acceptable minimum threshold of 0.707. In the trimming process, 22 measures out of a total of 64 measures were eliminated; which represents about 34.4 percent of all the measures. A summary of the results on loadings are presented in Table A2. The loadings of all the measures in the final measurement model were all examined to assess the measure's reliability.

Following the approach employed by Smart (2012), a

⁸ In addition, failure by firms to submit tax returns attracts a 5% default penalty or ksh.100, 000, whichever is greater.

⁹ Non-payment where declaration is made attracts 20% penalty and 2% interest per month until the amount is paid in full.

cut-off point of 0.5 was used. The loadings of the 11 constructs used in this study, 31 variables out of the 42 remaining variables / measures displayed loadings over 0.70 (as recommended by Chin, 1998). Out of the remaining 11 variables, only 3 variables displayed loadings less than 0.60. As argued by Chin (1998b), these measures can be used in analyses since there are other measures for the same construct. In this regard, the measures that were deleted had extremely low loadings.

In summary, a majority of the measures used in the study exceeded the more stringent cut off threshold of 0.707. Composite reliability as a measure of construct reliability is assessed using measures of Cronbach's alphas. Its index ranges between 0 (indicating completely unreliable) to 1 (for perfect reliability). The acceptable reliability threshold is 0.6 (Dibbern and Chin, 2005; Gotz et al., 2010; Kerlinger and Lee, 2000; Urbach and Ahlemann, 2010). The Cronbach alpha measures for all constructs (except PBC, procedural justice, Exchange Fairness and Horizontal fairness) as used in the study exceeded the acceptable threshold of 0.6, thus establishing construct reliability for subjective norms, tax compliance costs, complexity (statutory, legal and administrative perspectives), procedural fairness and international compatibility.

The next step was to examine convergent validity of the measurement model using the Average Variance Extracted (AVE). This is to ensure that the constructs share more variance with its measures than with other constructs in the model (Fornell and Larcker, 1981). The recommended acceptable minimum threshold for the AVE measure is 0.50 (Gefen and Straub, 2005; Hair et al., 2006), so that at least 50% of the indicator variance is accounted for. The results of AVE tests show that all the average variances extracted, except for statutory complexity measures, were above the acceptable level of 0.50. As to whether the AVE measure for statutory complexity of 0.480 is accepted or not depends on the test for discriminant validity (Chin, 2009). Discriminant validity seeks to establish the extent to which a given construct is different from other constructs in the model (Gefen and Straub, 2005). It is confirmed when each measurement item correlates weakly with all other constructs except for the one to which it is theoretically associated. It is primarily assessed by comparing correlations of measures within and across constructs in the model i.e. by examining the loadings and cross loadings matrix.¹⁰ There is no universally accepted threshold to establish discriminant validity. But, it is commonly accepted in literature that all loadings of the measurement items on their assigned constructs or latent variables should be larger than any other loadings (Barclay et al., 1995; Gefen and Straub, 2005; Schwarz and Schwarz, 2007; Chin, 1998; Chin, 2010; Urbach and

Ahlemann, 2010).

In this study, the loadings and cross loadings were generated by a correlations matrix of the measures used in the study, whose results are provided in Table A2 in the Appendix. The results show that all the measures loaded higher with other measures within their intended construct than with other measures of different constructs. There were, however, a few exceptions. For instance, *perceptions_13* loads higher on procedural justice construct (with a loading of 0.269), on Administrative Complexity construct (0.227) than on its own Subjective norms construct; *Perceptions_5* loads higher on procedural justice (0.308) and international compatibility (0.339) constructs on its own; *intcomp_3* loads more on all other constructs (except Horizontal fairness construct) than within its own international compatibility construct. In addition, *Intcomp_7* loads more with *statcomp* (0.281) and *legalcomp* (0.254) constructs than its own international compatibility construct. Finally, *complexity_1* and *complexity_2* load more highly with administrative complexity construct (0.218 and 0.331, respectively) than with their own statutory complexity construct.

Despite the fact that Chin (1998) recommended the removal of these measures that portray little evidence for discriminant validity, their cross loadings are too small to warrant their elimination, and thus are retained to preserve the information content in the model (Schwarz & Schwarz)¹¹. In this respect, the study confirmed widespread discriminant validity in the model. Collectively, the reliability and validity tests aforementioned confirm the overall quality of the final measures used in this study. In particular, the test statistics indicate that the component measures are reliable, internally consistent and have both convergent as well as discriminant validity. In this regard, the measurement model is therefore acceptable for structural model analysis.

Structural model estimation and evaluation results

The structural model illustrates the relationship between the different latent variables / constructs that were generated and hypothesised based on TPB. In evaluating the structural model's predictive power, measures of R-squared and path coefficients between constructs are analysed. The path coefficients indicate the size, direction and significance of the statistical relationship between any two constructs (Hair et al., 2006).

A summary of the assessment of the structural model is presented in Table 2. Diagrammatic representations of the structural models are provided in Figures A1 to 4. The results show each independent construct's effect on the

¹⁰ Cross loadings are derived by correlating the component scores of each latent variable with both their respective block of indicators and all other items included in the model (Chin, 1998).

¹¹ In fact, marginal cross loadings are attributed to 'noise' (Chin, 1998) and are therefore retained in the model.

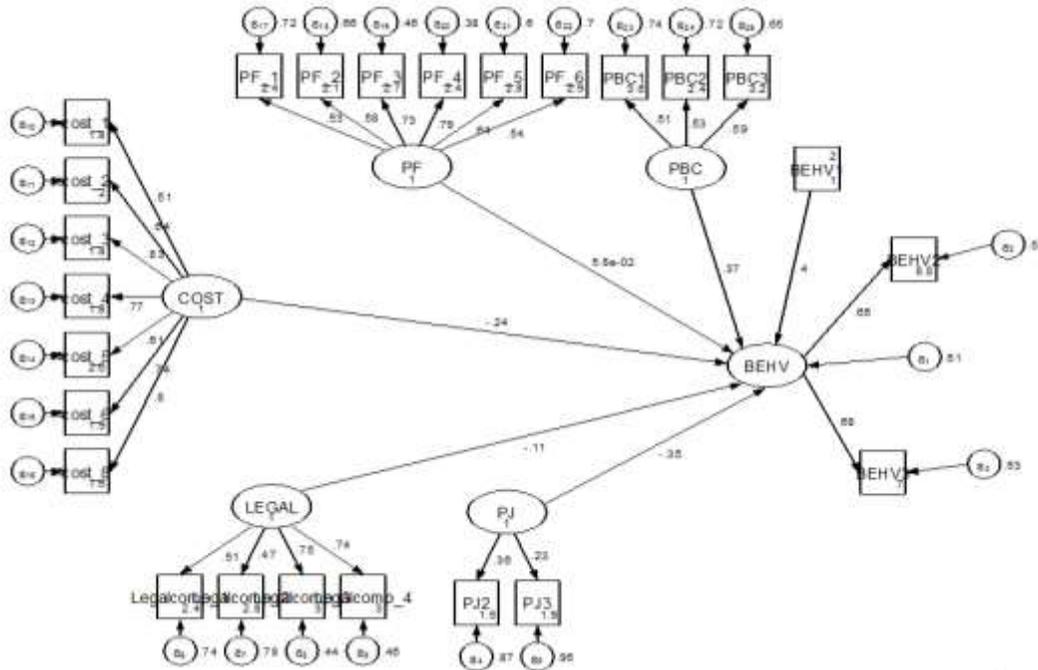


Figure A1. Structural business taxpayer compliance model (standardized estimates controlling for firm size).

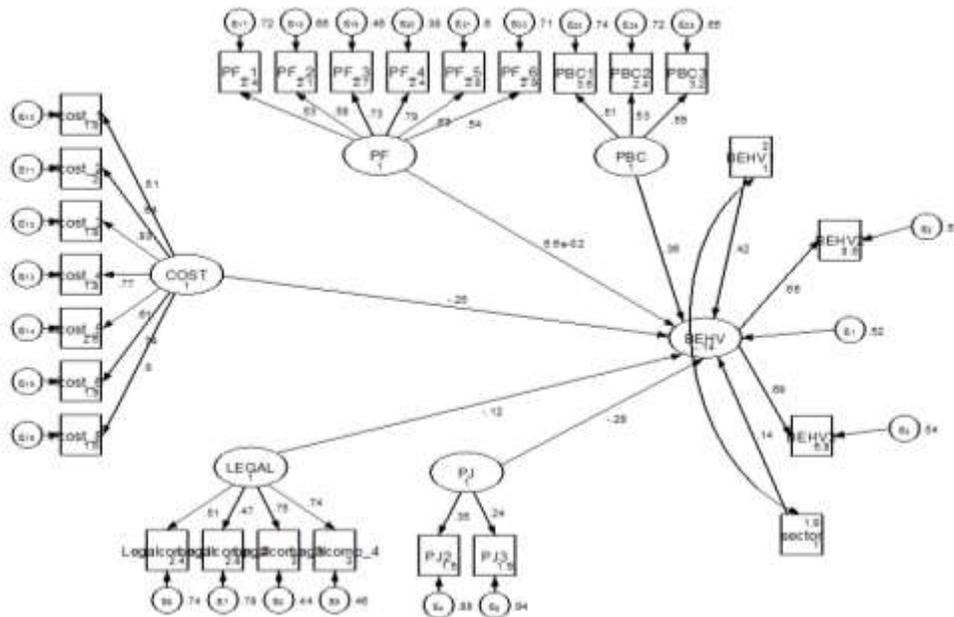


Figure A2. Structural business taxpayer compliance model (standardized estimates controlling for firm size and sector).

corresponding dependent constructs, the path coefficients and standard errors as well as the coefficients' respective levels of significance. In addition,

the measurement model results are also presented showing how each of the indicators of the different independent constructs affect the respective constructs

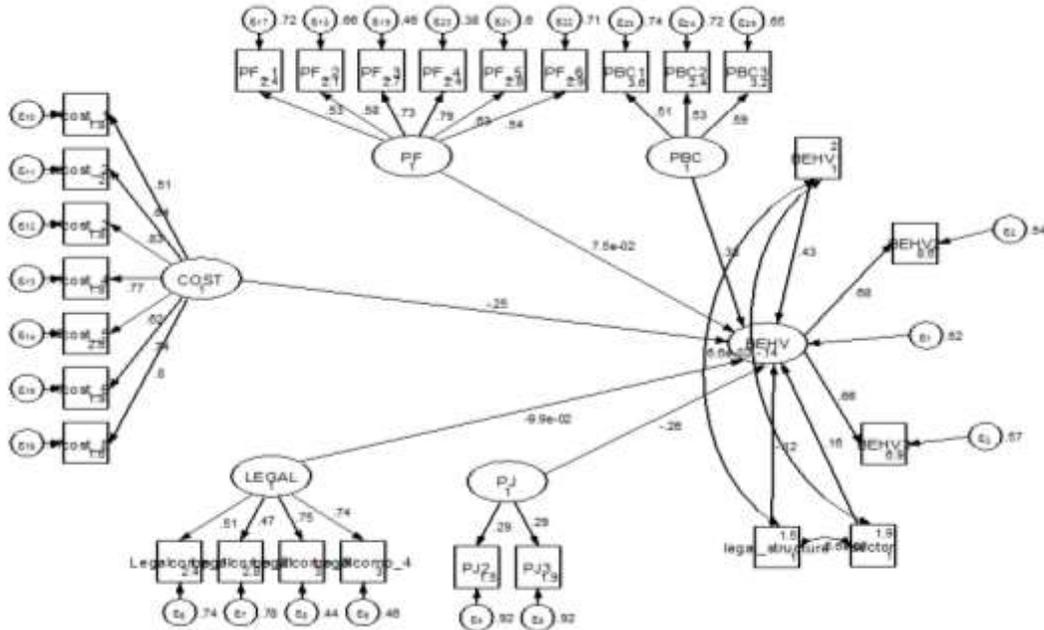


Figure A3. Structural business taxpayer compliance model (standardized estimates controlling for firm size, sector and legal structure).

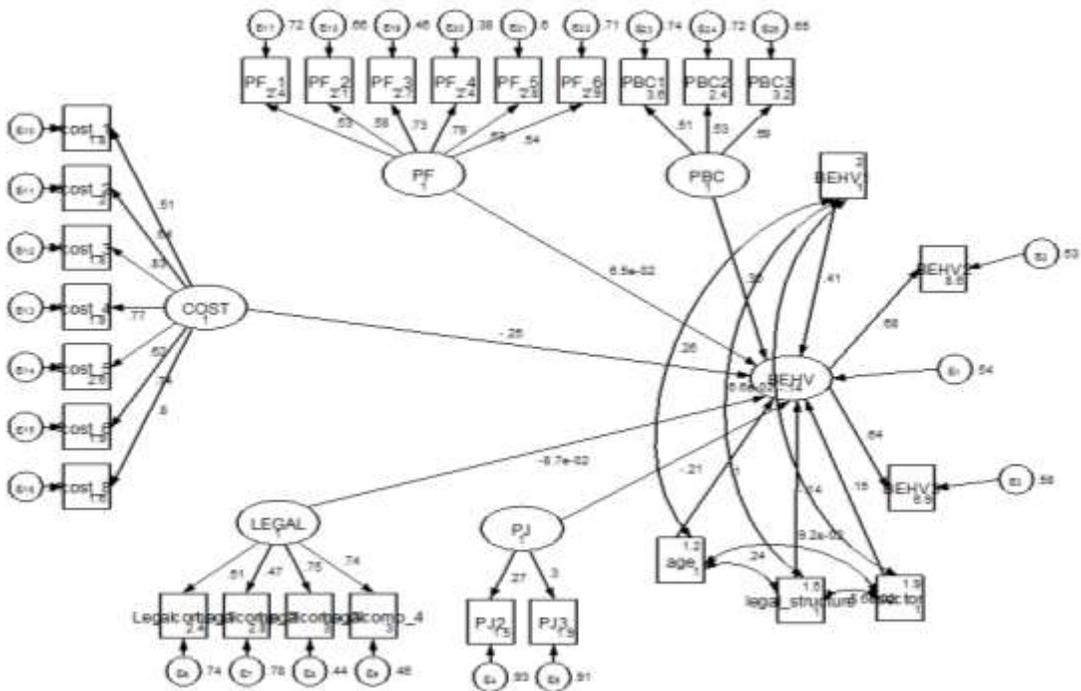


Figure A4. Structural business taxpayer compliance model (standardized estimates controlling for firm size, sector, legal structure and age).

that they measure. Model I-IV, show a summary of the different specifications of the tax compliance structural

model, respectively controlling for firm size (measured by total turnover), sector within which each firm operates,

Table 2. Summarized results estimation and evaluation of the structural model.

Dependent variable: Tax compliance [#]	Path coefficients			
	Model 1	Model 2	Model 3	Model 4
Procedural justice	-0.3517 (0.3370)	-0.2892 (0.3185)	-0.2627 (0.3068)	-0.2109 (0.3094)
Legal complexity	-0.1103 (0.1239)	-0.1202 (0.1199)	-0.0985 (0.1246)	-0.0873 (0.1267)
Compliance costs	-0.2421** (0.1182)	-0.2499** (0.1166)	-0.2503** (0.1191)	-0.2474** (0.1209)
Procedural fairness	0.0583 (0.1120)	0.0658 (0.1084)	0.0752 (0.1067)	0.0646 (0.1041)
Perceived behavioural control	0.3679** (0.1539)	0.3638** (0.1506)	0.3757** (0.1472)	0.3592** (0.1504)
Firm size	0.3971*** (0.1031)	0.4201*** (0.0968)	0.4281*** (0.0975)	0.4057*** (0.1055)
Firm sector	-	0.1434 (0.0968)	0.1557 (0.0997)	0.1510 (0.09817)
Legal structure	-	-	-0.1151 (0.1069)	-0.1431 (0.1195)
Age	-	-	-	0.1007 (0.0836)
Average communalities	0.393	0.393	0.392	0.392
Average R-Squared	0.397	0.397	0.396	0.396
Goodness of fit measure	0.395	0.395	0.394	0.394

Notes: The symbols *, ** and *** represent 10, 5 and 1% levels of significance, respectively. Figures in parentheses are respective coefficient standard errors. [#]An increase in tax compliance implies more evidence of compliance.

firm legal structure as well as how long the firm has been in existence (that is, firm age). We earlier hypothesized that these firm specific characteristics can potentially influence tax compliance behaviour (Table 2).

Model I to IV controls for firm size (measured by total annual turnover) in the compliance behaviour structural model. The results provide evidence that measures of compliance costs and perceived behavioral control as well as firm size are the only significant variables that affect tax compliance behaviour. Specifically, an increase in tax costs reduces tax compliance (coefficient of between -0.2421 and -0.2503 across the four models). However, an increase in perceived behavioral control (which implies infrequent occurrence of opportunities that would compel firms to underreport income or lack of financial pressure, and / or infrequent episodes of financial distress) improves tax compliance behaviour among corporate taxpayers in Kenya (coefficient of between 0.3592 and 0.3757).

Both of these constructs are significant at 5% level of significance. Similarly, as firm sizes increase there is a tendency for the firms to be more compliant. This variable has a coefficient of between 0.3971 and 0.4281 and is significant at 1% level of significance across all the four models. The rest of the variables, despite the fact that their direction of influence on compliance behaviour was as expected, were found not to be significant.

Discussions on the interpretation of path coefficients in the measurement model as well as R-squared measures focus on the indicators of the compliance costs and perceived behavioural control constructs as well as firm size. The other constructs capturing measures of subjective norms, exchange and horizontal fairness as well as administrative complexity despite having been found reliable and consistent with validity tests were

excluded from analyses in the process of seeking a well-behaved and robust model whose properties are in line with theoretical predictions. Based on the path coefficients, the study identifies some of the key drivers of compliance costs and PBC constructs; the significant factors that influence compliance behaviour.

The results on the measurement model show that all the cost measures used in the study are significant at 1% level of significance in explaining compliance cost. But their level of influence on compliance costs would vary from one measure to another. The strongest measure of cost that explains compliance cost is related to dealing with complexity of tax laws (*cost_3*), with a coefficient of 0.83 followed by costs related to general compliance and dealing with regulatory tax requirements of KRA (*cost_8*) whose coefficient is 0.80. The rest of the cost measures have coefficients ranging between 0.50 and 0.77. This is reflected across the four models. Based on these results, the study therefore concludes that the key drivers of compliance costs that eventually affect compliance behaviour originate from the tax authority and are specifically incurred on understanding complex tax laws as well as ensuring that firms meet the regulatory tax requirements of KRA.

From the measurement model of the PBC construct, there are three measures that capture: chances of underreporting income in case of receipt of income not subject to third party reporting, when a firm faces a financial pressure and the frequency of occurrence of financial distress. From the results, all the measures were significant at 1% level of significance but their path coefficients differ from one measure to another. The largest path coefficient is borne by the measure of PBC that captures the incentive to underreport income if an enterprise is frequently faced with a financial distress

(0.59) followed by when opportunity of underreporting when there is a financial pressure (0.52) then finally when a firm receives income that is not subject to third party reporting. From the results of the four models, the study can conclude that the most important measure of PBC that has the strongest influence on compliance behaviour is when firms are frequently faced with financial distress. It is therefore not so much about occurrence of financial distress but how often the distress circumstances occur that significantly influences firms' compliance decisions.¹²

The models predictive power was assessed using R-squared at both independent construct levels, that is, within the measurement models as well the structural model level. The R-squared value shows the extent to which the independent constructs (measures of tax costs, complexity, fairness, procedural justice and perceived behavioural control) help explain the dependent construct; the compliance behaviour. In this case, a model with perfect prediction has R-squared value of 1. The predictive power test results of model show the fraction of variance of compliance behaviour explained by each indicator /measure. The study focuses on the significant variables, that is, compliance costs and measures of PBC. The study analyses measures of R-squared on each indicator of all the constructs used. Discussions here focus on the significant construct measures – tax compliance costs and measures of PBC.

On the measures of tax compliance costs, it is evident from the results that the most important measures of tax costs, that is, *cost_3* and *cost_8* as identified earlier are the ones that explain the greatest proportion of variation in compliance behaviour. For instance, *cost_3* that captures costs in dealing with complexity of tax laws account for 69% of variation on tax compliance behaviour. Tax costs incurred in meeting compliance and other regulatory tax requirements (*cost_8*) account for 63% of variation on the compliance behaviour. This implies that activities of KRA directed at influencing complexity of tax laws as well as enhancing the avenues through which taxpayers can easily comply with tax requirements would greatly influence compliance behaviour. On the PBC that ascertains the ease with which firms would be tempted to under-report income, the R-squared measure for the most significant measure (that is, the frequency of occurrence of financial distress that may compel firms to underreport income) is at 0.35. This implies that the measure of PBC linearly accounts for 35% of variations on tax compliance behaviour. These values for R-squared are reflected across the four models even when different attributes of the firms – size, sector, legal structure and age- are accounted for.

The goodness of fit (GoF) test was also conducted and a global goodness of fit index for validating the research model was computed based on Tenenhaus (2004) and applied as in Smart (2012). The index accounts for the

performance of both the measurement and structural model; providing a single measure for the overall predictive power of the causal model (Tenenhaus, 2004; Tenenhaus et al., 2005). The global GoF index is computed from explained variability (R-squared) and average communality.¹³ This study uses five constructs (on procedural justice, legal complexity, compliance costs, procedural fairness and perceived behavioural control) to compute the weighted average communality measure (using number of factors in each construct as the weights). This yielded average communality measures of between 0.393 and 0.392 for all models. The average measure of variability (R-squared) on the other hand ranged between 0.397 and 0.396 across all the four models. In this regard, the global GoF index, range between 0.395 and 0.394.

For an exploratory study, these results indicate that the models being examined are significant since their respective GoF indices are above 0.3; the empirically recommended minimum for an exploratory study to be described as adequate (Chin, 2009; Tenenhaus et al., 2005; Duarte and Raposo, 2010). In fact, the results compare fairly well with those of Smart (2012) that found GoF index measure of 0.42. This implies that the quality of models used for this study is generally within acceptable limits. From the GoF results, we can infer that the combined effect of constructs capturing procedural justice, PBC (a component of the TPB), attributes of the tax system fairness (tax fairness as measured by procedural fairness measures) and tax complexity (measured by legal complexity attributes) account for slightly over 39% of variations in tax compliance behaviour among medium and large corporate taxpayers in Kenya. At group level and focusing on the significant constructs in influencing compliance behaviour, it is evident that while cost measures jointly account for about 50% of variations in compliance behaviour, measures of PBC jointly account for about 30%. This reflects the relative importance of costs over PBC in influencing compliance behaviour.¹⁴

For robustness sake, the study considers the measurement of GoF approach proposed by Bentler and Raykov (2000) that compares each measure's correlation with the dependent variable (tax compliance) as well as the squared multiple correlation coefficients. The minimum threshold acceptable for individual measure correlation coefficient is 0.3. It is evident from the results that all the individual correlation coefficients were greater than 0.3, thus an indication of adequate goodness of fit in all the models used in the study. These results indicate strong predictive power of the model for an exploratory

¹² The rest of the other measurement models are not discussed since they are not significant drivers of compliance behaviour.

¹³ Tenenhaus *et al.* (2005) argues while R-squared measures are only calculated for endogenous constructs, communalities are computed for both endogenous and exogenous constructs.

¹⁴ Group R-squared are computed as average of individual measures within the construct. For this case, the average R-SQUARED measure of 50% for costs is computed from seven cost measures while the PBC measure of 30% was computed from three measures.

study.

Conclusion

This section summarizes the findings of the study based on measures of tax costs and their influence on tax compliance behaviour in Kenya. Results after controlling for other attributes show that tax compliance costs negatively influence tax compliance behaviour. This result was significant at 5% of significance. It implies that as tax compliance costs increase, tax compliance reduces. Based on the measurement model, the study identified the most important cost measures (in terms of size of coefficient), despite the fact that all the seven measures used in the study were significant. It is evident that the most important compliance cost drivers identified by respondents in the study was the complexity of tax laws, the compliance and regulatory tax requirements and the frequency of changes in tax rules. These two factors linearly account for 69% and 63% of variations in compliance behaviour, as measured by their respective R-squared. It must be noted that the overall influence of tax compliance costs on compliance behaviour does not change when we control for firm size, sector, legal structure and age. This is evident from the fact that the size of the coefficient does not change significantly when different control variables are additionally applied.

The finding that tax compliance costs are important drivers of compliance is consistent with the results established in New Zealand (Smart, 2006). While a host of studies have studied the scope of compliance costs (Blumenthal and Slemrod, 1992), few of them have sufficiently examined the relationship between compliance costs and compliance behaviour (Richardson and Sawyer, 2001). In fact, hardly any has studied tax compliance behaviour among corporate taxpayers from a developing country perspective - with widespread structural and institutional challenges. On PBC, while this construct is also found to significantly influence compliance behaviour, one of its major drivers is the frequency of occurrences of financial distress that has been found empirically to strongly influence compliance behaviour. As such, it does not matter much occurrence of financial pressure but rather the frequency with which they appear.

For instance, while several studies argue that tax compliance behaviour involves a complicated decision making process (McKerchar, 2010); there are no many important factors that potentially influence tax compliance. This study attempts to capture perceived behavioural control measures drawn from TPB to examine tax compliance behaviour in Kenya. While the study takes note of the inconclusive evidence on the role of behavioral intentions in influencing tax compliance, this result is consistent with that established by other studies (Bobek and Hatfield, 2003; Saad, 2010) that did not also

cover the role of behavioural intentions on compliance. The study by Trivedi et al. (2005) that analyzed the full TPB model for the case of Canada focused on individual taxpayers (students). This study focuses on the business/corporate taxpayers who are primarily the largest category of taxpayers in Kenya. This perhaps reflects the fact that such measures as horizontal fairness were found to be unreliable and invalid for this study since all corporate taxpayers are subjected to the same tax rate in Kenya.

The other contribution of this study is the application of SEM to model taxpayer compliance behaviour in a developing country. Previous work, such as that of Smart (2006) focused on a developed tax jurisdiction (New Zealand). There is little (if any) evidence for a tax compliance behaviour study for a developing country. While this study may not be the first one, it is definitely one of the few to address the role of both TPB measures as well as procedural justice elements in understanding tax compliance behaviour directly. Finding evidence for the adequacy and applicability of TPB elements in understanding tax compliance behaviour from a developing country perspective is an important contribution to literature.

Policy implications

There is a continuous search for effective strategies to increase tax compliance, which would generate more revenue for tax authorities. Increasing revenues without burdening the compliant taxpayers through increased tax rates or incurring higher administrative costs is an essential and beneficial strategy (Smart, 2006).

For the case of Kenya, with compliance rate estimated at about 50% there is obviously need and room to enhance tax compliance. Due to high tax noncompliance, the government has continually increased domestic borrowing overtime to finance the ever-increasing public expenditures. The resultant high fiscal deficits that have emerged have created policy debates on options for increasing tax collection on one hand and enhancing sustainability of debt on the other. In this regard, formulating tax policies that enhance compliance requires an in-depth understanding of the tax compliance behaviour. This includes testing the adequacy of the traditional tax compliance theory to tease out the important factors that influence compliance, with an objective of designing appropriate interventions.

This study identified a few important determinants of tax compliance in Kenya, which may have implications for the tax authority in particular and policymakers in general. Traditionally, raising taxes and increasing enforcement strategies are the two most applicable and widely used approaches to enhancing revenue collections (Kirchler, 2007). These strategies if applied to enhance compliance can lead to high tax administration costs and can promote a negative attitude towards the

tax authority. In fact, there is limited support in literature on the effectiveness of these strategies in increasing compliance. For instance, Frey (1992) argues that increased monitoring enforcement especially when accompanied by heavy punishment on non-compliant payers can crowd out tax morale, ultimately leading to greater noncompliance.

This study finds significantly strong influence of tax compliance costs and perceived behavioural control on tax compliance behaviour in Kenya. The key drivers of tax costs are costs incurred in dealing with complex tax laws and in meeting regulatory requirements. The broader implication for tax authority, therefore, is to focus on reducing tax compliance costs, especially those related to understanding the complexity of commercial transactions, complexity of tax rules, dealing with frequent changes in tax rules, managing a large number of different taxes, changes in tax administrative practices and general costs incurred in the process of complying with all the regulatory tax requirements in place. In particular, there seems to be notably high costs in understanding the existing tax laws, dealing with frequently changing tax rules and the general compliance of tax requirements. Perhaps a consideration to simplify the tax laws and avoiding frequent reviews may provide the needed reduction in tax compliance with direct and significant effects on enhancing compliance.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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APPENDICES

Table A1. Descriptive statistics for all the variables (measures).

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Admincomp_1	142	1	7	3.74	2.01	4.04	0.14	0.20	-1.31	0.40
Admincomp_2	142	1	7	3.80	2.00	4.01	0.07	0.20	-1.31	0.40
Admincomp_3	141	1	7	4.01	1.92	3.69	0.06	0.20	-1.20	0.41
Admincomp_4	142	1	7	6.20	1.24	1.54	-1.93	0.20	4.02	0.40
Admincomp_5	142	1	7	6.34	1.25	1.57	-2.63	0.20	7.36	0.40
Admincomp_6	142	1	7	5.45	1.78	3.17	-1.16	0.20	0.42	0.40
Age	142	2	115	25.04	21.85	477.36	1.98	0.20	4.68	0.40
BEHV1	142	1	6	3.56	1.80	3.24	0.13	0.20	-1.41	0.40
BEHV2	142	1	2	1.11	0.32	0.10	2.48	0.20	4.19	0.40
BEHV3	142	1	5	4.77	0.65	0.42	-3.92	0.20	17.86	0.40
BEHV4	140	1	7	1.75	1.22	1.50	2.23	0.21	5.90	0.41
BI1	142	1	3	2.21	0.96	0.92	-0.44	0.20	-1.79	0.40
BI2	139	1	2	1.26	0.44	0.19	1.11	0.21	-0.77	0.41
BI3	139	2	6	2.70	1.08	1.17	1.64	0.21	2.02	0.41
BI3	141	1	6	2.40	1.20	1.44	0.63	0.20	0.10	0.41
BI4	116	1	8	3.55	2.51	6.28	0.43	0.23	-1.30	0.45
Cost_1	141	1	8	4.48	2.47	6.08	-0.25	0.20	-1.31	0.41
Cost_2	141	1	8	4.80	2.45	6.00	-0.38	0.20	-1.21	0.41
Cost_3	141	1	8	4.38	2.44	5.95	-0.08	0.20	-1.37	0.41
Cost_4	141	1	8	4.13	2.31	5.31	0.13	0.20	-1.26	0.41
Cost_5	141	1	8	5.57	2.17	4.70	-0.82	0.20	-0.39	0.41
Cost_6	141	1	8	4.28	2.29	5.25	-0.08	0.20	-1.22	0.41
Cost_7	141	1	8	4.42	2.35	5.53	-0.18	0.20	-1.31	0.41
Cost_8	141	1	8	4.29	2.64	6.95	-0.04	0.20	-1.52	0.41
EF_1	142	1	7	4.92	1.95	3.81	-0.49	0.20	-0.90	0.40
EF_2	142	1	7	4.76	2.01	4.06	-0.43	0.20	-1.02	0.40
EF_3	142	1	7	5.13	2.17	4.73	-0.87	0.20	-0.67	0.40
HF_1	142	1	7	5.25	1.70	2.90	-0.76	0.20	-0.05	0.40
HF_2	142	1	7	4.54	2.24	5.02	-0.37	0.20	-1.30	0.40
HF_3	142	1	7	3.68	2.52	6.35	0.23	0.20	-1.64	0.40
Intcomp_1	117	1	7	3.00	1.95	3.79	0.39	0.22	-1.20	0.44
Intcomp_10	116	1	7	5.48	1.41	1.99	-1.17	0.23	1.14	0.45
Intcomp_2	117	1	7	4.21	1.73	2.99	-0.04	0.22	-0.75	0.44

Table A1. Contd.

Intcomp_3	117	1	7	5.33	1.28	1.64	-0.95	0.22	1.77	0.44
Intcomp_4	117	1	7	3.01	1.91	3.66	0.52	0.22	-0.93	0.44
Intcomp_5	116	1	7	3.66	1.78	3.17	0.15	0.23	-0.98	0.45
Intcomp_6	115	1	7	4.43	1.72	2.97	-0.43	0.23	-0.67	0.45
Intcomp_7	116	1	7	3.59	1.78	3.18	0.18	0.23	-0.82	0.45
Intcomp_8	116	1	7	3.74	1.88	3.55	0.13	0.23	-0.98	0.45
Intcomp_9	116	1	7	5.13	1.55	2.41	-1.04	0.23	0.63	0.45
Legal_structure	142	2	12	2.89	1.96	3.83	2.43	0.20	5.39	0.40
Legalcomp_1	142	1	7	3.78	1.55	2.41	-0.01	0.20	-0.36	0.40
Legalcomp_2	142	1	7	4.25	1.50	2.26	-0.14	0.20	-0.28	0.40
Legalcomp_3	142	1	7	4.39	1.47	2.17	-0.44	0.20	-0.08	0.40
Legalcomp_4	142	1	7	4.46	1.50	2.25	-0.68	0.20	-0.02	0.40
Legalcomp_5	142	1	7	3.78	1.97	3.89	-0.12	0.20	-1.22	0.40
Legalcomp_6	142	1	7	3.55	2.18	4.73	0.08	0.20	-1.46	0.40
Legalcomp_7	142	1	7	4.87	1.72	2.95	-0.62	0.20	-0.32	0.40
PBC_1	141	1	7	5.88	1.65	2.71	-1.19	0.20	0.15	0.41
PBC_2	141	1	7	5.23	2.19	4.78	-0.70	0.20	-1.15	0.41
PBC_3	141	1	7	5.86	1.82	3.29	-1.40	0.20	0.64	0.41
PENAL_1	142	1	6	1.77	0.95	0.90	1.18	0.20	1.59	0.40
PENAL_2	141	1	7	2.32	1.77	3.15	1.38	0.20	0.86	0.41
PF_1	142	1	7	4.00	1.65	2.71	-0.35	0.20	-0.70	0.40
PF_10	142	1	7	5.50	1.69	2.86	-1.27	0.20	0.85	0.40
PF_11	142	1	7	3.01	1.79	3.20	0.56	0.20	-0.66	0.40
PF_2	142	1	7	3.66	1.79	3.20	-0.04	0.20	-1.03	0.40
PF_3	142	1	7	4.25	1.60	2.56	-0.52	0.20	-0.26	0.40
PF_4	142	1	7	3.97	1.69	2.86	-0.26	0.20	-0.71	0.40
PF_5	142	1	7	4.40	1.60	2.55	-0.47	0.20	-0.12	0.40
PF_6	141	1	7	4.27	1.46	2.13	-0.55	0.20	0.04	0.41
PF_7	142	1	7	3.53	1.65	2.72	-0.15	0.20	-0.95	0.40
PF_8	142	1	7	3.04	1.97	3.88	0.54	0.20	-0.92	0.40
PF_9	142	1	7	5.42	1.68	2.81	-1.05	0.20	0.34	0.40
PJ1	142	1	6	4.06	1.55	2.40	-0.42	0.20	-0.86	0.40
PJ2	142	1	7	1.99	1.72	2.96	1.79	0.20	2.03	0.40
PJ3	142	1	6	1.56	1.06	1.13	2.48	0.20	6.47	0.40
Sector	142	1	19	8.16	4.32	18.66	0.34	0.20	-0.61	0.40
SNORM_1	142	1	7	1.82	1.57	2.48	2.00	0.20	3.09	0.40

Table A1. Contd.

SNORM_2	141	1	7	3.20	2.26	5.09	0.44	0.20	-1.38	0.41
SNORM_3	141	1	7	1.81	1.50	2.24	2.25	0.20	4.69	0.41
SNORM_4	141	1	7	1.85	1.64	2.70	2.00	0.20	2.99	0.41
SNORM_5	142	1	7	1.73	1.53	2.33	2.22	0.20	3.99	0.40
Statcom_1	142	1	7	3.49	2.01	4.05	0.13	0.20	-1.33	0.40
Statcom_2	142	1	7	3.75	1.98	3.92	-0.01	0.20	-1.18	0.40
Statcom_3	142	1	7	3.64	1.76	3.11	-0.10	0.20	-1.08	0.40
Statcom_4	142	1	7	3.63	1.82	3.33	-0.06	0.20	-0.98	0.40
Statcom_5	142	1	7	3.49	1.92	3.70	0.09	0.20	-1.18	0.40
Tax_agent_reason_2	116	1	8	3.72	2.43	5.92	0.28	0.23	-1.38	0.45
Tax_agent_reason_3	116	1	8	2.98	2.34	5.48	0.88	0.23	-0.55	0.45
Tax_agent_reason_4	116	1	8	5.04	2.52	6.34	-0.41	0.23	-1.21	0.45
Tax_agent_reason_5	116	1	8	6.32	2.08	4.31	-1.36	0.23	0.83	0.45
Tax_agent_reason_6	116	1	8	6.72	1.92	3.68	-1.91	0.23	2.88	0.45
Taxdifficulty_1	141	1	8	2.02	1.65	2.74	1.72	0.20	2.18	0.41
Taxdifficulty_10	142	1	8	2.92	2.60	6.78	0.99	0.20	-0.59	0.40
Taxdifficulty_2	142	1	8	2.47	2.04	4.17	1.24	0.20	0.32	0.40
Taxdifficulty_3	142	1	8	2.89	2.17	4.71	0.83	0.20	-0.59	0.40
Taxdifficulty_4	142	1	8	3.65	2.37	5.61	0.40	0.20	-1.17	0.40
Taxdifficulty_5	142	1	8	3.77	2.40	5.74	0.26	0.20	-1.36	0.40
Taxdifficulty_6	142	1	8	3.54	2.41	5.81	0.44	0.20	-1.14	0.40
Taxdifficulty_7	142	1	8	2.91	2.22	4.94	0.92	0.20	-0.39	0.40
Taxdifficulty_8	142	1	8	3.86	2.32	5.38	0.28	0.20	-1.13	0.40
Taxdifficulty_9	142	1	8	2.69	2.06	4.23	0.95	0.20	-0.29	0.40
Turnover	142	1	4	2.74	1.39	1.93	-0.33	0.20	-1.78	0.40

Table A2. Loadings and cross loadings.

		Subjective Norms			Perceived Behavioral Control			Procedural Justice		International Compatibility					Statutory Complexity					Legal Complexity				Administrative Complexity			Exchange Fairness		Procedural Fairness					Horizontal Fairness								
		perceptio ~13	perceptio ~14	perceptio ~15	perceptio ~5	perceptio ~7	perceptio ~8	perceptio ~2	perceptio ~3	Intcomp 5	Intcomp 6	Intcomp 7	Intcomp 8	Intcomp 9	Complex ty_1	Complex ty_2	Complex ty_3	Complex ty_4	Complex ty_5	Complex ty_6	Complex ty_7	Complex ty_8	Complex ty_9	Complex ty_13	Complex ty_14	Complex ty_15	Fairness 2	Fairness 3	Fairness 4	Fairness 5	Fairness 6	Fairness 7	Fairness 8	Fairness 9	Fairness 15	Fairness 16						
Subjective Norms	perceptio~13	1.000																																								
	perceptio~14	0.350	1.000																																							
	perceptio~15	0.217	0.637	1.000																																						
Perceived Behavioral Control	perceptio~5	-0.144	-0.137	-0.147	1.000																																					
	perceptio~7	-0.268	-0.288	-0.161	0.265	1.000																																				
	perceptio~8	-0.158	-0.134	-0.136	0.430	0.264	1.000																																			
Procedural Justice	perceptio~2	0.060	0.093	0.081	-0.235	-0.014	-0.300	1.000																																		
	perceptio~3	0.160	0.162	0.139	-0.308	-0.210	-0.202	0.499	1.000																																	
International Compatibility	Intcomp_3	-0.058	-0.009	-0.018	-0.028	-0.064	-0.335	-0.389	1.000																																	
	Intcomp_5	0.060	0.060	0.069	-0.117	-0.068	-0.112	0.149	0.028	1.000																																
	Intcomp_6	0.205	0.076	0.016	-0.042	-0.072	-0.048	-0.024	-0.042	0.451	0.301	1.000																														
	Intcomp_7	0.184	0.206	0.240	-0.238	-0.061	-0.068	0.187	0.187	0.040	0.456	0.299	1.000																													
	Intcomp_9	-0.075	-0.056	-0.047	0.032	0.138	0.070	-0.131	-0.200	0.500	0.416	0.493	0.251	1.000																												
Statutory Complexity	Complexity_1	0.052	0.048	0.085	-0.142	-0.122	0.021	-0.013	0.092	0.011	-0.015	0.207	0.141	0.009	1.000																											
	Complexity_2	0.095	0.113	0.068	-0.149	-0.199	-0.077	-0.012	0.021	0.051	-0.071	0.164	0.118	0.025	0.820	1.000																										
	Complexity_3	0.160	0.002	0.065	-0.225	-0.086	-0.176	0.231	0.218	-0.202	0.102	-0.114	0.281	-0.038	0.275	0.333	1.000																									
	Complexity_4	0.096	0.005	0.072	-0.194	-0.138	-0.155	0.202	0.288	-0.271	-0.068	-0.200	0.146	-0.280	0.306	0.186	0.417	1.000																								
	Complexity_5	0.183	0.064	0.044	-0.153	-0.124	-0.163	0.156	0.251	-0.258	-0.053	-0.136	0.051	-0.522	0.086	0.248	0.360	0.740	1.000																							
Legal Complexity	Complexity_6	-0.041	0.110	0.234	-0.268	-0.096	-0.202	0.188	0.096	0.120	0.297	0.089	0.254	0.237	-0.105	-0.182	-0.061	0.004	-0.038	1.000																						
	Complexity_7	-0.113	-0.025	0.110	-0.150	-0.006	-0.202	0.183	0.014	0.014	0.183	0.124	0.254	0.091	0.050	-0.002	0.067	0.028	0.007	0.530	1.000																					
	Complexity_8	0.020	-0.074	0.040	-0.063	0.034	0.026	0.138	-0.069	0.076	0.218	0.235	0.256	0.283	0.107	0.077	0.050	-0.170	-0.132	0.376	0.316	1.000																				
	Complexity_9	0.067	0.080	0.082	-0.095	-0.066	-0.004	-0.086	-0.056	0.275	0.345	0.547	0.253	0.522	0.095	0.057	-0.018	-0.167	-0.123	0.280	0.299	0.602	1.000																			
Administrative Complexity	Complexity_13	0.146	0.133	0.042	-0.057	-0.253	-0.133	0.006	0.140	-0.282	-0.157	-0.145	0.123	-0.282	0.197	0.331	0.401	0.409	0.463	-0.203	0.119	-0.075	-0.076	1.000																		
	Complexity_14	0.227	0.183	0.126	-0.091	-0.234	-0.018	0.158	0.150	-0.248	-0.112	-0.085	0.171	-0.294	0.218	0.265	0.371	0.422	0.400	-0.176	0.195	-0.076	-0.104	0.848	1.000																	
	Complexity_15	0.104	0.158	0.145	-0.238	-0.216	-0.098	0.217	0.129	-0.229	-0.096	0.015	0.226	-0.136	0.162	0.229	0.338	0.284	0.252	0.079	0.137	0.044	-0.066	0.478	0.452	1.000																
Exchange Fairness	Fairness_2	0.180	0.163	0.066	-0.021	-0.148	-0.211	0.064	0.165	-0.220	-0.057	-0.065	0.094	-0.189	-0.066	0.005	0.190	0.579	0.257	-0.156	-0.164	-0.223	-0.048	0.345	0.299	0.282	1.000															
	Fairness_3	0.026	-0.063	-0.057	0.079	0.013	0.010	0.196	0.134	-0.184	-0.078	-0.202	-0.201	-0.125	-0.125	-0.194	-0.036	0.350	0.522	0.096	-0.038	-0.038	-0.032	0.030	0.002	0.082	0.335	1.000														
Procedural Fairness	Fairness_4	0.018	0.153	0.208	-0.039	-0.089	-0.093	-0.161	0.168	0.168	0.122	0.068	0.086	0.228	0.013	-0.018	0.063	0.119	0.210	0.242	0.017	0.253	0.185	-0.054	-0.051	0.003	-0.061	-0.047	1.000													
	Fairness_5	0.088	-0.066	-0.010	-0.057	0.002	-0.180	0.025	0.047	0.009	0.028	0.064	-0.064	0.068	-0.225	-0.203	0.057	-0.025	0.019	0.367	0.195	0.205	0.159	-0.082	-0.112	0.012	-0.058	0.091	0.238	1.000												
	Fairness_6	0.010	0.061	0.110	-0.156	-0.118	-0.054	0.046	0.030	0.140	0.009	0.124	0.078	0.141	-0.022	0.066	0.156	0.112	0.166	0.435	0.277	0.211	0.041	-0.002	0.011	0.197	-0.063	0.043	0.368	0.458	1.000											
	Fairness_7	0.096	0.135	0.169	-0.169	-0.151	-0.214	-0.084	0.027	0.131	0.008	0.065	0.142	0.087	0.054	0.094	0.047	0.013	0.091	0.285	0.263	0.181	0.119	0.069	0.060	0.194	-0.196	-0.178	0.432	0.390	0.656	1.000										
	Fairness_8	-0.092	-0.220	-0.121	-0.014	-0.089	-0.077	-0.081	-0.115	0.263	-0.051	0.258	0.111	0.270	-0.034	-0.055	0.030	-0.115	-0.168	0.220	0.178	0.157	0.069	-0.179	-0.213	0.003	-0.106	-0.004	0.195	0.328	0.361	0.409	1.000									
	Fairness_9	-0.126	-0.187	-0.094	-0.066	-0.013	-0.098	-0.060	-0.140	0.254	-0.015	0.284	0.114	0.308	-0.077	-0.079	-0.066	-0.201	-0.203	0.248	0.263	0.238	0.081	-0.300	-0.105	0.056	-0.186	-0.083	0.230	0.347	0.271	0.291	0.746	1.000								
Horizontal Fairness	Fairness_15	-0.160	-0.267	-0.247	0.034	0.198	0.158	-0.109	-0.178	0.280	0.030	0.024	-0.047	0.085	0.002	0.028	-0.078	-0.085	-0.102	0.006	-0.011	-0.340	-0.087	-0.077	-0.139	-0.207	-0.115	-0.068	-0.122	-0.068	-0.023	-0.068	0.151	0.162	1.000							
	Fairness_16	-0.128	-0.226	-0.158	0.012	0.222	0.300	-0.181	-0.248	0.202	0.104	0.133	0.015	0.166	0.220	0.240	-0.159	-0.230	-0.068	-0.035	0.150	0.044	0.066	-0.057	-0.147	-0.158	-0.232	-0.124	0.031	-0.008	0.044	0.071	0.086	0.173	0.368	1.000						