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**Article**

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Cogent Business & Management

**Provided in Cooperation with:**

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*Suggested Citation:* Musimenta, Doreen (2020) : Knowledge requirements, tax complexity, compliance costs and tax compliance in Uganda, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 7, Iss. 1, pp. 1-19, <https://doi.org/10.1080/23311975.2020.1812220>

This Version is available at:

<https://hdl.handle.net/10419/244935>

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To cite this article: Doreen Musimenta | (2020) Knowledge requirements, tax complexity, compliance costs and tax compliance in Uganda, Cogent Business & Management, 7:1, 1812220, DOI: [10.1080/23311975.2020.1812220](https://doi.org/10.1080/23311975.2020.1812220)

To link to this article: <https://doi.org/10.1080/23311975.2020.1812220>



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Received: 22 June 2020  
Accepted: 14 August 2020

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Reviewing editor:  
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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Knowledge requirements, tax complexity, compliance costs and tax compliance in Uganda

Doreen Musimenta<sup>1\*</sup>

**Abstract:** The purpose of this study is to examine the relationship between knowledge requirements, complexity of the tax system and tax compliance in Uganda while exploring the indirect effects of compliance costs. The research design was cross sectional and correlational using VAT registered withholding agents. This study results suggest that knowledge requirements do not have a significant relationship with compliance costs. Knowledge requirements are best suited in explaining the internal costs of compliance than external costs. Our results indicated that taxpayers have sufficient tax knowledge to enable them comply with taxes but that does not rule out the fact that taxpayers still incur the cost of complying. When the system of taxation becomes more complex, then the cost of complying also becomes high. The complex tax systems require taxpayers to obtain extra training as well as seeking external professional advice in order to comply. Therefore, that tax complexity has a direct and indirect impact (through compliance costs) on tax compliance. Rather than focusing only on the importance of the normal analytical deliberation of knowledge requirements and tax complexity by taxpayers in influencing their tax compliance, the current paper shows that in addition, the indirect effect of compliance costs in establishing the basis for understanding taxpayers' compliance. Methodologically, this study solicits responses from taxpayers who are deemed to be tax compliant and have been

### ABOUT THE AUTHOR

Doreen Musimenta is a Lecturer in the Department of Accounting, Makerere University Business School. She holds a degree of Master of Science in Accounting and Finance and Bachelor of Commerce of Makerere University. Her research interests are in the areas of tax compliance, accountability and financial reporting

### PUBLIC INTEREST STATEMENT

Tax compliance is currently a topical issue, especially in developing countries as governments are seeking for ways to improve efficiency in tax revenue collection to finance their budgets without relying on unpredictable donor funding. However, this has not been achieved given the fact that most of the taxpayers do not understand the tax system due to its complexity and the higher costs involved in ensuring compliance. This has resulted into higher costs of complying. Due to the costs of compliance and the complexity of the tax system, the tax compliance has remained low in developing countries (notwithstanding the fact that the developing countries are majorly characterized by the informal sector). This study, therefore, suggests that in improvement in the knowledge of the taxpayers about the tax system, ease of the laws and regulations, and flexed compliance costs will result into greater tax compliance.

designated to withhold VAT (which is one of the biggest indirect taxes collected in Uganda) in addition to paying income taxes. This probably offers a unique way of deriving better results than previous studies which have basically concentrated on just taxpayers regardless of whether they are presumed compliant or not.

**Subjects: History of Economic Thought; Business, Management and Accounting; Accounting**

**Keywords: knowledge requirements; tax complexity; compliance costs; tax compliance; Uganda; tax agents**

### 1. Introduction and motivation

Governments are mandated to provide public services to their citizens. In order to fulfil this mandate, they require revenue which is majorly generated through taxes. The total amount of tax (and non-tax) revenue is the primary concern in meeting infrastructure, social and other spending needs, including those required to achieve the sustainable development goals (SDGs). This helps to reduce dependence on volatile and sometimes disempowering aid which may also blunt the incentive to develop own sources of revenue and securing macroeconomic stability and resilience (IMF, OECD, UN and World Bank Group (WBG), 2016). Compliance of taxpayers with the tax obligations is very important and that's why it has attracted the attention of very many academicians across the globe (Das-Gupta et al., 2004; Musimenta et al., 2017; Nkundabanyanga et al., 2017; Palil & Mustapha, 2011). Tax compliance has become a more significant aspect of tax policy because most of the old problems remain as new considerations are raised by developments like self-assessment, E-filing, and E-invoicing.

Lakuma (2019) found that the true "baseline" tax liability for 2015/16 was Shs. 3,381.90 billion, compared to Shs 1, 598.59 billion, which was voluntarily reported on returns for tax year 2015/16. The gross tax gap was therefore estimated at Ug.Shs 1, 783.31 billion, or 52.73% of the baseline tax. The baseline amount of tax owed estimated by comparing income amounts reported on the 2015/16 Uganda Revenue Authority (URA) income tax returns with similar income amounts households reported on the 2015/16 Uganda National Panel Survey (UNPS). IMF (2015) also reported the average VAT compliance gaps of about 20% in Europe and 30% in Latin America and for low-income countries it was reported that information is hard to find, which tends to confirm that compliance is in many cases very poor. The few estimates for sub-Saharan Africa indicate a broad range, from very high around 50–60 % in Uganda, to low (less than 10% in South Africa). For Pakistan, the overall tax gap has been put at 41%. Tax compliance is therefore an issue hassling both developed and developing countries, and one of the possible determinants of tax noncompliance is complexity of tax system (Gambo et al., 2014).

As the tax system becomes complex, it follows that more taxpayers will opt for an assisted tax preparation method which include self-preparation with tax software and using tax consultants, and this has indeed increased over the years (Marcuss et al., 2013). To date, tax authorities around the world are using electronic tax administration systems to interact with taxpaying public in tax collection, administration and compliance settings (Ling & Nawawi, 2010). This implies that the taxpayers must be knowledgeable about these developments including having the competence to prepare returns that conform to the law requirements using these systems. With the introduction of the self-assessment system, E-filing and the ever-changing tax policies in Uganda (the most recent being the introduction of OTT, mobile money tax on transactions and introduction of withholding agents for VAT), taxpayers require to have human resources capable of understanding and interpreting the systems and the new tax laws accurately to avoid noncompliance. This has thus forced many taxpayers into seeking advice from external tax consultants to avoid penalties of noncompliance. The Tax Agents Registration Committee (TARC) approved 289 Tax Agents applications (URA, 2017) effective January 2017. In 2016, the committee was launched as provided for by the Tax Procedure Code (TPC) Act 2014, which came into force on 01/06/2016 to harmonize different tax types, Uganda

Revenue Authority has today launched TARC. This list was the first to be vetted and selected by this committee. These tax agents are aimed at helping taxpayers in complying with the tax obligations. Similarly, The Institute of Certified Public Accountants of Uganda (ICPAU) in 2016 designed a tax qualification course for tax policy professionals, tax administrators, tax consultants and graduates who are interested in becoming Certified Tax Advisors (CTAs). This was the Uganda's first professional tax qualification by an accredited Institution.

Extant research has explored various explanations for tax compliance such as compliance costs (Eichfelder & Schorn, 2012; OECD, 2015), tax fairness, isomorphic forces (Musimenta et al., 2017); tax morale, complexity of the tax system (Gambo et al., 2014), Tax knowledge (Marcus et al., 2013; Palil & Mustapha, 2011) fines and penalties (Kirchler, 2007) and taxpayers attitudes (Alm & Torgler, 2006) among others. Alm and Torgler (2006) found out that once tax morale is crowded out, it is difficult for the government to raise tax morale very quickly back to previous levels. Regardless of these studies in place, tax compliance has remained a pervasive issue in developing countries which has time and again attracted the attention of international bodies like the IMF, World Bank, OECD and the UN. Research on tax compliance has been based on the “economic deterrence” approach which considers both economic and structural factors in relation to compliance. This approach uses the utility function equation and experimental economics methods to help explain and predict compliance outcomes. The economic deterrent theory assumes that taxpayers are moral profit seeking and their actions are motivated by the calculation of costs and the opportunities that come with that. The economic deterrence approach suggests that taxpayers make a cost–benefit analysis when deciding on compliance outcomes, and relies on enforcement for compliance to work (Yong, 2006). Therefore, the cost of complying will determine their attitude towards voluntary compliance.

Most studies have examined compliance costs, tax knowledge and complexity as possible determinants of compliance independently but a few if any has explored these factors in a single suit (especially in developing economies like Uganda). Also, there are hardly any studies in Africa that have examined the mediating role of compliance costs in the relationships between tax complexity and tax compliance. This study, therefore, was motivated by the need to add knowledge to the already existing literature and recommend policy for improvement of tax compliance in developing countries which has remained uncertain.

The results of this study are significant for a number of reasons. First, for the first time, as far as we are aware, the study examined the indirect effects of compliance costs in the relationship between tax complexity and tax compliance representing an influential scheme of addressing compliance issues and subjected it to empirical analysis. So, this research contributes to this stream of literature by generating empirical evidence on the value of this concept. Future research can qualitatively explore the benchmarks of reducing the compliance costs as it is seen to be significant in improving compliance. Notably, the costs of compliance are operating costs and therefore reduce the taxable profits or even increasing the prices of goods and services. This can itself increase inflation. It is therefore palatable that governments (revenue authorities) look into ways of reducing compliance costs for taxpayers. Second, the level at which taxpayers comply with tax laws in terms of filing of tax returns and remittance are determined by their level of tax knowledge, complexity of the tax system and compliance costs. In order to cover the gap of taxpayers' knowledge and tax complexity, the government through its taxing agencies should continue to educate the potential and prospective taxpayers on tax laws and regulations through direct-free symposium and seminars, give them tax incentives, and door to door sensitisation. Also, taxation should be taught at all levels of education, starting from primary schools to secondary schools, up to university level, with an emphasis of promoting voluntary tax compliance. Currently, taxation is taught as a topic in economics in high school and at the university level to only business-oriented students ignoring the other levels below and other fields yet they also form a basis for charging taxes.

The remainder of this paper is as follows. Section two is literature review and in this the hypotheses are developed. The third section is the methodology adopted for this study to deliver the objectives. The fourth section is a presentation of the results. The fifth section is the discussion and last section is conclusions and recommendations

## **2. Literature review**

### **2.1. Theoretical review**

Tax compliance is a major problem for many tax authorities. It is not an easy task to persuade taxpayers to comply with tax requirements even as the tax laws are not always precise in some respects (James & Alley, 2004). Olaoye et al. (2017) concluded that the level at which taxpayers comply with tax laws in terms of filing returns and remittance are determined by their level of knowledge and information on tax administration in respect to tax rates, allowance, allowable and non-allowable expenses and penalty for tax default. The theoretical approaches of tax compliance have commonly been divided into economic deterrence theory and the wider behavioral theory (Frey & Feld, 2002).

Deterrence theory is one of the major theoretical areas of taxpayer compliance. There have been great research advances made in deterrence theory over the years, with particular reference to the deterrent effect of different forms of sanctions (Devos, 2007). The deterrence theory is premised on dealing with the challenges of tax compliance, in an attempt to seek an enforcement mechanism that can be complemented or substituted by the appeal to the citizen's tax morality. The concept of deterrence is a complex and difficult one. The term deterrence is used more restrictively, applying only to cases where a threat causes individual who would have committed the crime a threatened behaviour to refrain from doing so.

Research on tax compliance has been based on the "economic deterrence" approach which considers both economic and structural factors in relation to compliance. The economic deterrent theory assumes that taxpayers are moral profit seeking and their actions are motivated by the calculation of costs and the opportunities that come with that. The economic deterrence approach suggests that taxpayers make a cost-benefit analysis when deciding on compliance outcomes, and relies on enforcement for compliance to work (Yong, 2006). The deterrence model attempts to explain the change in compliance behaviour rather than the level of compliance. Taxpayers will always way the costs against benefits in making compliance decisions. If for instance, the penalty for noncompliance is lower compared to the cost of compliance, then the taxpayer will chose to evade and wait for the penalty which is likely to come later or even never comes. When the cost of complying becomes higher than the benefits, then taxpayers agility to evade or avoid takes priority. So, in order to improve compliance, the cost of compliance must be at the minimum.

### **2.2. Knowledge requirements and tax compliance**

Tax knowledge is the level of awareness or understanding of the taxpayers to tax legislation. Tax knowledge refers to the processes, by which taxpayers become aware of tax legislation and other tax-related information (Hasseldine et al., 2009). The knowledge that taxpayers have or do not have about the tax system affects compliance, but the impacts are unresolved (Alm, 2018). The level of education received by taxpayers is an important factor that contributes to the understanding of tax requirements, especially regarding registration and filing requirements (Maseko, 2014). Previous studies have evidenced that general tax knowledge has a very close relationship with taxpayers' ability to understand the laws and regulations of taxation, and their ability to comply with them. Taxpayers often do not know what they should pay in taxes, given a complex and uncertain tax system. As a result, they have increasingly come to rely upon paid tax practitioners (and also tax preparation software) in the preparation of their taxes. An increase in complexity leads to greater use of a tax practitioner (Christian et al., 1993; Dubin et al., 1992), in large part because a taxpayer's lack of understanding about taxes leads him or her to rely upon someone else (e.g., the tax professional) who is seen as much more knowledgeable (Eriksen & Fallan, 1996; Sakurai & Braithwaite, 2003). Alm (2018) found out that taxpayers vary considerably in their knowledge of tax requirements, their capacity to learn about their

responsibilities, their perceptions of the consequences of not meeting those responsibilities and their awareness of any services to assist them with their taxes. The legal and procedural issues related to taxation are taxing themselves. Significant knowledge about the procedural aspects of tax laws is required which is challenging since tax laws tend to be changed frequently (Chittenden et al., 2003). Business owners with knowledge deficiencies end up seeking the help of tax practitioners to handle part of the taxpaying process they would have handled themselves and all they do is to keep the necessary records to help the tax practitioners do their work. Acquiring taxation knowledge is costly in terms of time and money. Machogu and Amayi (2013), concluded that tax knowledge is essential in improving tax compliance; hence, more revenue to finance the recurrent and development expenditure of the government and also implies less administrative costs for the collection of revenue. Also, the findings of Nzioki and Peter (2014) indicate that tax knowledge and education has a significant positive effect on tax compliance in Real Estate Sector. An increase of tax knowledge level can lead to the increase of tax compliance level. They also suggested that improve awareness of taxpayers with regards to their tax obligations can be better improved through enhanced tax education services rather than just provide them simple guideline on filling tax returns. When the level of awareness is advanced, the costs of compliance to the taxpayers are likely to reduce. This reduces the chances of intentional and unintentional non compliance. The foregoing discussion leads to the following hypothesis:

*H1a: There is a relationship between knowledge requirements and compliance costs*

*H1b: There is a relationship between knowledge requirements and tax compliance*

### **2.3. Tax complexity and compliance costs**

Tax laws are often too complex to be understood by a laymen person (Kirchler, 2007). Tax complexity has been defined from different perspectives by Tran-Nam & Evans (2014). To a tax accountant, tax complexity refers to the time it takes to prepare income tax returns including tax planning or the time it takes to give tax advices and consultancies. To a tax lawyer, tax complexity can be viewed from the point of difficulty in reading, understanding, and interpreting tax laws for their application in tax compliance. To a taxpayer, tax complexity is viewed from the point of time taken and cost incurred in complying with the relevant tax legislations. Tax complexity can take many forms such as computational complexity, forms complexity, compliance complexity, rule complexity, procedural complexity and the low level of readability (Pau et al., 2007; Saad, 2014; Saw & Sawyer, 2010).

Thomas et al. (2019) observed countries with a very complex tax code tend to have a larger population, a higher GDP, and higher tax rates. On the other hand, countries with a very complex tax framework tend to have a lower GDP, a poorer infrastructure, a lower development level, and a lower quality of governance in place. In accordance with these correlation patterns, many highly industrialized countries, such as Germany, the United Kingdom or the United States, are characterized by high tax code complexity but low tax framework complexity. These countries are also among those that strongly promote fair and equitable tax policies. Hence, the high level of tax code complexity in these countries may be interpreted as reflecting those policies, which could have positive implications for the economy. Developing countries are majorly characterised by framework complexity (as measured by Tax guidance, Tax law enactment, Tax filing and payments, Tax audits and Tax appeals) which hinders compliance majorly. (Nugent, 2013) states that the impact of the complexity of taxation laws can affect risk behavior and cost perceptions of taxpayers related to justice. Therefore, taxpayers who are law obedient and find it hard to comply, they opt for external sourcing of tax professionals to provide guidance towards compliance. The more complex the tax system becomes, the higher the cost of compliance.

Eichfelder and Schorn (2012) argue that a high degree of outsourcing can be interpreted as a proxy for a low in-house productivity of a business and/or a high complexity of tax returns if businesses behave cost-efficiently. A study by Masato (2009) found out that an excessively complex regulatory system and tax regime enforcement makes tax compliance disproportionately

taxing and have a distortionary impact on the development of small and medium scale enterprises as they are tempted to change into forms that offer a lower tax burden or no tax burden at all. Tax laws are too complicated for taxpayers to keep up to date considering the frequent changes in the tax law (Loo et al., 2010) and that's why some corporate taxpayers deploy services of external tax professionals when they experience difficulties in tax issues (Sapiei & Kasipillai, 2013). Therefore, the complexity of the tax system consequently and usually results in unintentional noncompliance. This is because some taxpayers may find it hard sourcing the services of the external tax professionals given that it is not a free service. The researcher can, therefore, hypothesize that:

*H2a: There is a relationship between tax complexity and compliance costs*

*H2b: There is a relationship between tax complexity and tax compliance*

*H2c: compliance costs mediate the relationship between complexity and tax compliance*

#### **2.4. Compliance costs and tax compliance**

Tax compliance costs are costs incurred by taxpayers, or third parties such as businesses, in meeting the requirements laid upon them in complying with a given structure and the level of tax (Eichfelder & Schorn, 2012). From literature, Eichfelder and Schorn (2012) analysed three reasons as to why compliance costs can be considered a major economic problem. First, they reduce the resources of private businesses without raising the financial budget of the government. Thus, they are an economic waste. Second, the economic burden of tax compliance decreases with growing business size and rises with the international orientation of businesses. These effects could reduce the competitiveness of small and medium-sized enterprises and reduce their access to international markets. Thirdly, Tax compliance costs seem to be linked to the compliance level. Hence, they could lead to tax evasion. Maseko (2014) found that taxpayers prefer tax bribes to reporting all their tax affairs implying that compliance costs influenced them to avoid tax compliance. Tax compliance costs include internal costs and external costs. Internal costs arise from the time costs of internal staff spent on maintaining and preparing information for professional advisers, completing tax forms and dealing with tax authorities on matters pertaining to inquiries, objections, and appeals (Loh et al., 1997). External costs arise from payments to acquire the services of lawyers, accountants, and investment advisers from outside the company (Loh et al., 1997). External costs are more easily recognisable and quantifiable compared to internal costs. Internal costs are difficult to quantify as their estimation requires fairly subjective apportionment of joint overhead and other costs. External costs, mainly in the form of advisors costs, using professional tax service providers is one of the main costs contributing to the cost of complying with taxation legislation (Coolidge et al., 2009).

Abrie and Doussy (2006) found out that compliance swallows up resources that could be devoted to a more effective running of the businesses. The majority of SMEs experience their tax liability as an increasing burden; they do not have enough skilled staff to handle tax compliance issues and often have to incur "extra" tax costs as a result. Loh et al. (1997) found out that regressive nature of tax compliance costs is robust and statistically significant and the major proportion of compliance costs relates to computation costs and that there is a heavy reliance on external advisers even for the larger companies. Musimenta et al. (2019), found compliance costs are significantly related to tax compliance of financial services firms. Therefore, it can be clear from the foregoing discourse that:

*H3: There is a relationship between compliance costs and tax compliance*

### **3. Research methodology**

#### **3.1. Design, population, and sample**

The research design was cross-sectional and correlational. A cross-sectional research design analyses data collected from a population at a specific point in time (Saunders et al., 2007;



Sekaran, 2003). This study employed a cross-sectional survey design because we aimed at finding out the prevalence of tax compliance, by taking a cross section of taxpayers in Uganda in 2019. In addition, the characteristics of variables being measured would not change much due to the short period of data collection. Correlational research is concerned with establishing relationships between two or more variables in the same population or between the same variables in two populations (Leedy & Ormrod, 2010). The population under study was 680 VAT registered withholding agents (Legal Notices Supplement to the Uganda Gazette No. 33, Volume CXI, dated 29 June 2018). The VAT withholding agents are those taxpayers required to withhold tax on payment for a taxable supply and remit the tax to URA. These taxpayers are deemed to be tax compliant and have been designated to withhold VAT (which is one of the biggest indirect taxes collected in Uganda) in addition to paying income taxes. This probably offers a unique way of deriving better results than previous studies which have basically concentrated on just taxpayers regardless of whether they are presumed compliant or not. A sample of 242 withholding agents was selected using Krejcie and Morgan table (Krejcie et al., 1970) table of sample selection approach and used the simple random sampling in selecting the firms. A rotary method of sampling was used as it gives equal chances of selection to the entire population. This study solicited responses from the persons responsible for filing and payment of taxes (tax accountants). Tax accountants are persons supposed to provide services relating to ascertaining or advising about liabilities, obligations or entitlements of entities and representing entities in their dealings with the Uganda Revenue Authority. Table 1 indicates sample and respondent characteristics.

Of the sampled 242 withholding agents, completed questionnaires were obtained from 176 respondents indicating 73% response rate. Most of the respondents 61.9% were males implying that most of the firms designated to withhold VAT employ males as tax accountants than females. About 40% of the respondents have the first degree, 32% diplomas and 17% certificates. The respondents had the basic knowledge to understand the data collection tool. The youth constituted about 59.7% of the respondents and majority had worked in these firms for less than 10 years.

Only 44% of the firms use of external tax professionals and majority seek advice from professional accountants and registered tax agents. Over 42% of the firms (withholding agents) had existed for at least more than 5 years but less than 10 years. 38.6% had existed for over 10 years and 11.9% had less than 5 years. This can be explained by the fact that Uganda is a growing economy and therefore most of the firms are still in infant stages. Most of the firms are small employing less than 50 employees (72.2%). Fifty-one percent of the firms were trading firms, 22% manufacturing and 20% service firms.

### **3.2. Questionnaire and measurements**

Data were collected from respondents using a questionnaire with close-ended questions. We considered the recording of the response in the questionnaire design as recommended by (Sekaran, 2003; Sudman & Bradburn, 1982). There are two questionnaire design approaches; one that uses an open-answer format and allows respondents to give their opinions fully with as much distinction as they are capable (Sudman & Bradburn, 1982). This approach appeared inapplicable in this research where the intention was to calculate the mean ratings of the extent of agreement with each statement; in the alternative; therefore, we considered the approach which uses closed-answer format which is easier to analyse (Sudman & Bradburn, 1982). The questions were anchored on a six-point Likert scale ranging from strongly disagree (1) to strongly agree (6), allowing the respondent to register the degree of agreement. Regarding operationalisation of the study variables, tax compliance was operationalized by reporting compliance and payment compliance (Braithwaite, 2009; Musimenta et al., 2017). Knowledge requirement was measured by general knowledge, legal knowledge and technical knowledge (Fauziati et al., 2016). Complexity was measured through administrative, statutory and compliance complexity (Pau et al., 2007; Saad, 2014; Saw & Sawyer, 2010). Compliance costs were measured through internal and external costs (Eichfelder & Schorn, 2012; Loh et al., 1997).

**Table 1. Characteristics of the respondent**

		<b>Frequency</b>	<b>Percent</b>
Gender of the respondent	Male	109	61.9
	Female	67	38.1
	Total	176	100.0
Highest level of education	Secondary	7	4.0
	Certificate	30	17.0
	Diploma	57	32.4
	Degree	71	40.3
	Masters	10	5.7
	PhD	1	.6
	Total	176	100.0
Working experience	0-5 years	69	39.2
	6-10 years	68	38.6
	over 10 years	39	22.2
	Total	176	100.0
Age of the respondent	Below 35 years	105	59.7
	Above 35 years	71	40.3
	Total	176	100.0
Use of external tax professionals	Yes	77	43.8
	No	99	56.3
	Total	176	100.0
source of external advice	professional Accountants	39	22.2
	Registered tax agents	31	17.6
	URA	35	19.9
	Others	71	40.3
	Total	176	100.0
source of finance	Equity	24	13.6
	Loans	18	10.2
	Both	134	76.1
	Total	176	100.0
Nature of the organisation	Service	36	20.5
	Manufacturing	39	22.2
	Trading	90	51.7
	NPO	3	1.7
	Others	8	4.5
	Total	176	100.0
Number of employees	0-50 employees	127	72.2
	51-100	38	21.6
	Above 100	11	6.3
	Total	176	100.0
Age of the organisation	0-5 years	33	18.8
	6-10 years	75	42.6
	Over 10 years	68	38.6
	Total	176	100.0

Source: *primary data*

### 3.3. Data management

The research instrument was given to five knowledgeable persons that is, two academicians, two withholding agents and one tax official to test for validity. The Cronbach Alpha coefficient was used to test for the reliability of the questionnaire. Table 2 shows the results which show that the instrument was reliable since the Cronbach alpha coefficient was above the recommended 0.7 by Nunnally (1978). The Cronbach Alpha coefficients were 0.895, 0.811, 0.865 and 0.816 for knowledge requirements, complexity, compliance costs and tax compliance, respectively.

### 3.4. Model

This study utilizes a hierarchical regression model in investigating the contribution of knowledge requirements, tax complexity and compliance costs to tax compliance while controlling for source of finance, nature of the business, size of the firm and use of external tax experts. Hierarchical regression analysis is ideal for studies that aim to establish the contribution of any independent variables to the variances in the dependent variable (Field, 2009; Sekaran, 2003). If the intention of the study is to find out among the list of predictors which one is the most important in explaining the variance and then which follows next, and so on, a stepwise multiple regression analysis can be used (Sekaran, 2003). However, if the intention is to know which variable would significantly add to the variance explained in the dependent variable over and above that explained by other independent variable(s), a hierarchical regression analysis can be used (Sekaran, 2003). Field (2009) explains that in stepwise regressions, decisions about the order in which predictors are entered into the model are based on a purely mathematical criterion and the computer is used to select the predictor variable with the highest simple correlation with the outcome variable. Field (2009) further explains that using a hierarchical regression model, known predictors from previous work are entered first but the researcher decides in which order to enter the predictors into the model. Therefore, for this study, a hierarchical regression model is more suitable than stepwise regression and simple ordinary least squares (OLS) regression. Specifically, the models below were tested.

Model 1

$$TC = \beta_0 + \beta_1SF + \beta_2AGE + \beta_3SIZE + \beta_4NATURE + \beta_5EXT + \beta_6SOURCE + \epsilon_j$$

Model 2

$$TC = \beta_0 + \beta_1SF + \beta_2AGE + \beta_3SIZE + \beta_4NATURE + \beta_5EXT + \beta_6SOURCE + \beta_7CC + \epsilon_j$$

Model 3

$$TC = \beta_0 + \beta_1SF + \beta_2AGE + \beta_3SIZE + \beta_4NATURE + \beta_5EXT + \beta_6SOURCE + \beta_7CC + \beta_8COX + \epsilon_j$$

Model 4

$$TC = \beta_0 + \beta_1SF + \beta_2AGE + \beta_3SIZE + \beta_4NATURE + \beta_5EXT + \beta_6SOURCE + \beta_7CC + \beta_8COX + \beta_8KR + \epsilon_j$$

**Table 2. Reliability analysis**

Variable	No of items	Cronbach's alpha
Knowledge requirements	20	0.895
Tax Complexity	20	0.811
Compliance costs	16	0.865
Tax compliance	7	0.816

Source: Primary data

Where

TC is the tax compliance of taxpayers

$\theta_0$  is the intercept

$\beta$  is the gradient

SF is the source of finance for the business

AGE is the period for which the organisation has been operating

SIZE is the number of employees

NATURE is the Nature of the organisation

EXT is whether the company uses external tax professionals to handle tax matters

SOURCE is the Source of external advice

CC is the cost of compliance

COX is the complexity of the tax system

KR is the knowledge requirement of the taxpayers

$\epsilon_j$  is the error term

#### 4. Results

##### 4.1. Descriptive results

Descriptive statistics generated included means and standard deviations and are presented in Table 3. The means and standard deviations are reported since the means represent a summary of the data and standard deviations show how well the means represent the data (Field, 2009).

Table 3. Descriptive statistics								
	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
General knowledge	2.86	6.00	4.6185	.77172	-.134	.183	-.986	.364
Legal knowledge	2.33	6.00	4.2225	.83602	-.340	.183	-.569	.364
Technical knowledge	2.00	6.00	4.1688	.92394	-.102	.183	-.818	.364
Knowledge requirements	2.60	5.75	4.3366	.72216	-.259	.183	-.778	.364
Administrative costs	1.83	4.00	2.7680	.43788	.191	.183	-.143	.364
Compliance complexity	1.86	3.57	2.4748	.39004	.500	.183	-.629	.364
Statutory complexity	1.29	3.57	2.2102	.54680	.337	.183	-.571	.364
Tax complexity	1.76	3.45	2.4844	.32051	.388	.183	.560	.364
Internal compliance costs	1.00	3.78	2.3030	.49839	.207	.183	.083	.364
External compliance costs	1.29	3.86	2.4448	.56977	.006	.183	-.542	.364
Compliance Costs	1.29	3.60	2.3739	.43966	.194	.183	.254	.364
Tax compliance	3.86	6.00	5.0032	.56154	-.289	.183	-.878	.364

Source: Primary data

On a scale of strongly disagree (1) to strongly agree (6), the means for knowledge requirements, tax complexity, compliance costs and tax compliance were 4.34, 2.48, 2.37 and 5.00, respectively. The standard deviations for knowledge requirements, tax complexity, compliance costs and tax compliance are 0.722, 0.320, 0.646 and 0.561, respectively. Mean values for the study variables range from 2.24 to 5.00. According to Field (2009) when deviations are small compared to mean values, it is apparent that the data points are close to the means and hence calculated means highly represent the observed data. In Table 3 we note that there are small standard deviations relative to the mean which suggests that the data points are close to the means and hence the calculated means highly represent the observed data. In the Table above, we also reported the skewness and kurtosis statistics to assess normality among single variables. According to Field (2009), the values of skewness and kurtosis should be near 0 in a normal distribution. Skewness and Kurtosis statistics for normal data range from  $-3.29$  and  $3.29$  (Field, 2009). Positive values of Skewness show a pile-up of scores on the left of the distribution and negative values indicate a pile-up of scores on the right (Field, 2009). Garson (2012) recommends Skewness and Kurtosis statistics to be within the  $+2$  to  $-2$  range, though for kurtosis a more lenient  $+3$  to  $-3$  range can also show normality. Following these benchmarks, the normality of the data was tenable (Table 3).

The results in Table 3 suggest that taxpayers have general knowledge in regards to which type of taxes have to be paid and the technical know-how. This is not surprising given the kind of taxpayers involved in this study. It is also apparent that these taxpayers have legal knowledge (laws and regulations) guiding compliance of taxes. For Uganda Revenue Authority to register a taxpayer as a withholding agent, certain conditions must be satisfied. The taxpayer should be in a position to keep proper books of accounts, file returns and pay taxes. Intuitively, it means that these taxpayers are knowledgeable and have the capacity to pay taxes. The lower means of less than three indicate that taxes are complex and the costs of complying with these taxes are quit both internally and externally. However, regardless of the complex tax system and high compliance costs, these taxpayers indicate that they comply with the taxes. The cost of noncompliance could be higher than the cost of compliance given that noncompliance comes with heavy punishments which include penalties and damaged public image in case the company is caught. Nonetheless, these obliged taxpayers have to trade-off between compliance and noncompliance.

#### 4.2. Correlational results

Hypotheses H1a, H1b, H2a and H3 were initially tested by correlation analysis. Table 4 shows the results of this test. Zero-order correlations establish whether or not there are associations between the study variables (Field, 2009) as hypothesized from the literature review. The results in Table 4 show that there is a nonsignificant negative relationship between knowledge requirements and compliance costs ( $r = -.126, p < 0.01$ ). This dismisses H1a which indicates that there is relationship between knowledge requirements and compliance costs, given that the relationship is not significant. This implies that the knowledge of a taxpayer about the tax affairs does not have a significant impact. Knowledge requirements have a positive and significant relationship with tax compliance ( $r = .378, p < 0.01$ ) therefore, H1b was supported. The results also show a significant and positive relationship between tax complexity and compliance costs ( $r = .282, p < 0.01$ ), which support H2a. Also, tax complexity has a significant and negative relationship with tax compliance ( $r = -.291, p < 0.01$ ) hence supporting H2b. Compliance costs have a significant and negative relationship with tax compliance ( $r = -.240, p < 0.01$ ) implying that H3 was supported.

#### 4.3. Regression results

For further confirmation of the hypotheses, we now run the regression analysis. Table 5 shows the results. Table 5 shows the contribution of the predictor variables onto dependent variable tax compliance without the control variables. The results in Table 5 show that knowledge requirements and tax complexity are significant predictors of tax compliance except and compliance costs. In order to eliminate common methods, bias which may originate from the control variables, Table 6 shows hierarchical regression results in 4 models; the first model (Model 1) includes only control variables. The models 2, 3 & 4 show each predictor being introduced in succession to determine the contribution

**Table 4. Correlations**

	1	2	3	4	5	6	7	8	9	10	11	12
General knowledge (1)	1											
Legal knowledge (2)	.675**	1										
Technical knowledge (3)	.534**	.591**	1									
<b>Knowledge requirements (4)</b>	<b>.844**</b>	<b>.878**</b>	<b>.845**</b>	<b>1</b>								
Administrative complexity (5)	-.103	-.104	.026	-.066	1							
Compliance complexity (6)	-.019	.022	.033	.016	.348**	1						
Statutory complexity (7)	-.157*	-.146	-.142	-.173*	.194*	.164*	1					
<b>Tax complexity (8)</b>	<b>-.144</b>	<b>-.121</b>	<b>-.055</b>	<b>-.122</b>	<b>.707**</b>	<b>.658**</b>	<b>.723**</b>	<b>1</b>				
Internal compliance costs (9)	-.121	-.149*	-.123	-.153*	.121	.187*	.319**	.313**	1			
External compliance costs (10)	-.043	-.087	-.028	-.061	.029	-.172*	.385**	.162*	.352**	1		
<b>Compliance Costs (11)</b>	<b>-.096</b>	<b>-.141</b>	<b>-.088</b>	<b>-.126</b>	<b>.088</b>	<b>-.005</b>	<b>.430**</b>	<b>.282**</b>	<b>.795**</b>	<b>.848**</b>	<b>1</b>	
<b>Tax compliance (12)</b>	<b>.358**</b>	<b>.386**</b>	<b>.238**</b>	<b>.378**</b>	<b>-.227**</b>	<b>.057</b>	<b>-.371**</b>	<b>-.291**</b>	<b>-.218**</b>	<b>-.179*</b>	<b>-.240**</b>	<b>1</b>

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Source: *Primary data*

**Table 5. Regressions**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.212	.425		12.266	.000
Knowledge requirements	.260	.053	.335	4.913	.000
Compliance Costs	-.176	.090	-.138	-1.955	.052
Tax complexity	-.370	.123	-.211	-2.999	.003

a. Dependent Variable: Tax compliance

R = 0.470, R Square = 0.221, Adjusted R Square = 0.207, Std. Error of the Estimate = 0.49993, F = 16.262, Durbin-Watson = 0.424

Source: *Primary data*

**Table 6. Hierarchical regression results**

	Model I	Model II	Model III	Model IV
Constant	4.864**	5.509**	6.463**	5.321**
<b>control variables</b>				
the source of finance for your business is	-.134	-.101	-.097	-.115
The organisation has been operating for	.202	.190	.189	.168
Number of employees	-.119	-.114	-.156	-.164
Nature of the organisation	.017	-.011	-.012	-.006
Does your company use external tax professionals to handle tax matters	.165	.163	.129	.051
Source of external advise	-.069	.003	.042	-.034
Compliance Costs		-.247**	-.181*	-.111
Tax complexity			-.252**	-.221**
Knowledge requirements				.329**
R	0.263	0.351	0.423	0.516
R Square	.069	.123	.179	.266
Model F	2.091	3.379	4.561	6.701
Adjusted R square	.036	.087	.140	.227
F change	2.091	10.406**	11.378**	19.728**
R square change	.069	.054	.056	.087
Durbin Watson				.502

Dependent variable: Tax compliance;

\*\* Significant at the 0.01 level

\* Significant at the 0.05 level

Source: *Primary data*

made by each variable to the variances in the dependent variable tax compliance. All the models show that knowledge requirements are the most significant predictor of tax compliance and singularly contributed about 8.7%. This result provides evidence in support of  $H1_b$  and suggests that when there are low knowledge requirements, then tax compliance improves significantly. Tax complexity also significantly explains a variance in tax compliance but negatively. This implies that increase in complexity of the tax results into noncompliance or reduced compliance.

Compliance costs is a nonsignificant predictor of tax compliance in the initial regression analysis. This is surprising given that the initial results in correlations indicated a significant link. This puzzle is partly solved by the results reported in Table 6; a table which shows test results for the sensitivity of the results to the control variables and the contribution of each dependent variable using hierarchical regression analysis.

Model 1 reports only control variables and the results show that except for nature of the organization, all the other control variables do not explain any significant variance in tax compliance. This suggests that the models in this study are not sensitive to confounding factors and the models are highly acceptable (Field, 2009). Results in Models 2 indicate that compliance costs is a significant predictor of tax compliance (standardized  $\beta = -0.247$ ,  $p < 0.01$ ). In model 3 we introduce tax complexity and it is a significant predictor (standardized  $\beta = -0.252$ ,  $p < 0.01$ ) & Model 4 shows that knowledge requirements (standardized  $\beta = 0.329$ ,  $p < 0.01$ ) as significant predictors of tax compliance. Compliance costs is not significant in the 4<sup>th</sup> model. Knowledge requirements neutralizes the relationship between compliance costs and tax compliance. This means that when taxpayers are knowledgeable about taxes and know how to file returns and pay then compliance costs become meaningless in the tax compliance model. Model 4 presents the combined effect of all the predictor variables on the outcome variable, and the results show that knowledge requirements is the best and significant predictor variable of tax compliance (standardized  $\beta = 0.329^{**}$ ), followed by tax complexity. Overall, the model explains variance 22.7% in tax compliance.

We also extended the analysis to test for mediation of compliance costs in the relationships between tax complexity and tax compliance. This is to test for H2c.

There are two statistical strategies for testing mediated effects: multiple regression (as reviewed by Baron & Kenny, 1986) and structural equation modeling. This study adopts the regression strategy. According to Baron and Kenny (1986), four conditions must be met for a variable to be considered a mediator: (a) the predictor must be significantly associated with the hypothesized mediator (b) the predictor must be significantly associated with the dependent measure (c) the mediator must be significantly associated with the dependent variable and (d) the impact of the predictor on the dependent measure is less after controlling for the mediator. A corollary of the second condition is that there has to be a significant relationship between the predictor and the dependent variable for a mediator to serve its mediating role. Baron and Kenny (1986) discussed that it would be unusual independent variable—dependent variable effect to be reduced from significance to zero and for this, the degree to which the effect is reduced (e.g., the change in regression coefficients) is an indicator of the potency of the mediator. Moreover, the significance of the indirect effect can be tested (Baron & Kenny, 1986).

All the above-mentioned conditions were met for H2a and H2b are significant therefore, supported. To test for the significance of the mediation, the Sobel test was conducted using the Jose's Medigraph. We, therefore, test for the mediation effect of compliance costs in the relationship between tax complexity and tax compliance. The results in figure one indicate that compliance costs partially mediate the link between tax complexity and tax compliance ( $Z = -1.98$ ,  $p = 0.048$ ) (Figure 1).

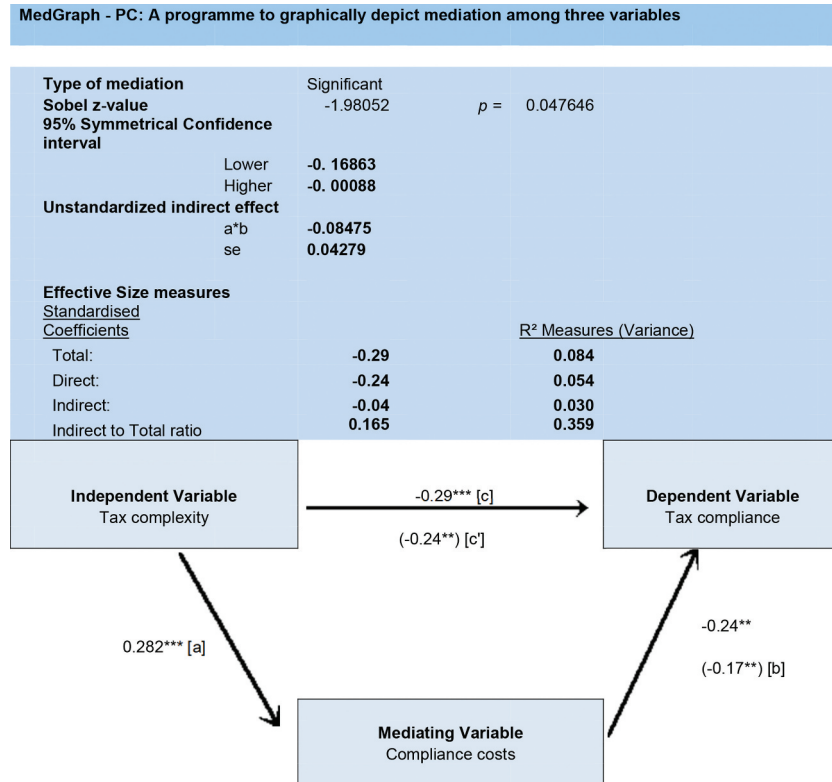
#### 4.4. Discussion

Our results suggest that knowledge requirements do not have a significant relationship with compliance costs. However, the relationship with the internal costs of compliance was significant. This implies as taxpayers become more knowledgeable, the external cost of compliance reduces as there will be no need for expert opinion in computing and payment of taxes. These results are consistent with the results of Eichfelder and Schorn (2012) who argue that a high degree of outsourcing can be interpreted as a proxy for a low in-house productivity of a business and/or a high complexity of tax returns if businesses behave cost-efficiently. Knowledge requirements are best suited in explaining the internal costs of compliance than external costs. This is because taxpayers opt for external tax practitioners (resulting to external costs) when they have no in-



**Figure 1. Depiction of the mediation among the three variables: tax complexity, compliance costs and tax compliance.**

Note: the numerical values in parentheses are beta weights taken from the second regression and other values are zero-order correlations.



house skills to do the taxation work. Our results indicated that taxpayers have sufficient tax knowledge to enable them comply with taxes but that does not rule out the fact that taxpayers still incur the cost of complying. Nonetheless, Chittenden et al. (2003) found out that significant knowledge about the procedural aspects of tax laws is required which is challenging since tax laws tend to be changed frequently and therefore, business owners with knowledge deficiencies end up seeking the help of tax practitioners to handle part of the taxpaying process they would have handled themselves. This study finds that when taxpayers have the necessary technical and legal knowledge then tax compliance will also increase. This finding can be linked to behavioural analytical theories of change because education can change the behavior of an individual. The more taxpayers become knowledgeable about the tax affairs, the more we should expect tax compliance behaviour to change positively. It is intuitively assumed that when a taxpayer is learned, they understand the basis of taxation and they will be willing to pay their tax dues. When taxpayers are aware of what should be done, the cost of compliance will automatically reduce, and there will be no reason to evade taxes. This justifies the conclusion made by Machogu and Amayi (2013), that tax knowledge is essential in improving tax compliance, hence more revenue to finance the recurrent and development expenditure of the government and also implies less administrative costs for the collection of revenue. Also, consistent with scholars who argue that the knowledge that taxpayers have or do not have about the tax system affects compliance, but the impacts are unresolved (Alm, 2018).

Also, nature of the firm was found to have a significant relationship with tax compliance. This is consistent with the tax compliance behavioural literature which indicate that among other factors, demographic variables found in the social and psychology models of taxpayer compliance play an important role in the compliance behaviour of taxpayers (Devos, 2007).

Tax complexity has been found to be significant and negatively related to compliance costs. When the system of taxation becomes more complex, then the cost of complying also becomes high. The

complex tax systems require taxpayers to obtain extra training as well as seeking external professional advice in order to comply. Also, our findings reveal that tax complexity has a significant and negative relationship with tax compliance. It has been revealed that tax complexity has a direct and indirect impact (through compliance costs) on tax compliance. These results are consistent with Loo et al. (2010) who argues that tax laws are too complicated for taxpayers to keep up to date considering the frequent changes in the tax laws implying that they have to incur extra time and cost to get acquainted with the new changes which happen often. This is the basic reason as to why many taxpayers employ external tax professionals to provide services of tax advisory when experienced with difficulties in tax issues (Sapiei & Kasipillai, 2013).

Finally, compliance costs have been found to have a negative and significant relationship with tax compliance. Internal costs have a bigger significant impact than external costs. This could be because, even if a taxpayer is using external practitioners, they still incur internal costs like preparing books of accounts which require extra staff and time. These results are consistent with Musimenta et al. (2019) who found out that compliance costs both administrative and speciality costs significantly affect tax compliance.

## 5. Conclusions and implications

Tax noncompliance is hard to prove as taxpayers always acknowledge the fact that they are tax compliant. Musimenta et al. (2017) found that there are significant difference between taxpayers and tax authorities in regards to tax compliance; therefore, it's hard to conclude that taxpayers are compliant or non-compliant. The baseline is the tax compliance can only be proved through physical checks of the taxpayers accounting records and tax authorities records which is not possible for confidentiality reasons. The debate about tax compliance in developing countries like Uganda remains conspicuous. The study finds that compliance costs (both internal and external) partially mediate the relationship between tax complexity and tax compliance. As the tax laws become more complex, the cost of complying also rises. Uganda tax laws are seen to change regularly and this requires taxpayers to be flexible enough to acquire the necessary knowledge to abide by the changes otherwise the cost of compliance remains high, therefore, knowledge requirements gap will always appear in times of changes. This has led to taxpayers opt for external help. As with the previous scholars, tax laws are too complicated for taxpayers to keep up to date considering the frequent changes in the tax law and that's why some corporate taxpayers deploy services of external tax professionals when they experience difficulties in tax issues. The research did not try to make propositions as to how compliance costs can be reduced or redistributed. However, the opportunity to reduce the costs of compliance is every taxpayers dream, perhaps, one of the greatest challenges facing tax policymakers and administrators in Uganda now and even in the periods forward.

These results are significant for a number of reasons. First, for the first time, as far as we are aware, the study examined the indirect effects of compliance costs in the relationship between tax complexity and tax compliance representing an influential scheme of addressing compliance issues and subjected it to empirical analysis. So, this research contributes to this stream of literature by generating empirical evidence on the value of this concept. Future research can qualitatively explore the benchmarks of reducing the compliance costs as it is seen to be significant in improving compliance. Notably, the costs of compliance are operating costs and therefore reduce the taxable profits or even increasing the prices of goods and services. This can itself increase inflation. It is therefore palatable that governments (revenue authorities) look into ways of reducing compliance costs for taxpayers. Second, the level at which taxpayers comply with tax laws in terms of filing of tax returns and remittance are determined by their level of tax knowledge, complexity of the tax system and compliance costs. In order to cover the gap of taxpayers' knowledge and tax complexity, the government through its taxing agencies should continue to educate the potential and prospective taxpayers on tax laws and regulations through direct-free symposium and seminars, give them tax incentives, and door to door sensitisation. Also, taxation should be taught at all levels of education, starting from

primary schools to secondary schools, up to university level, with an emphasis of promoting voluntary tax compliance. Currently, taxation is taught as a topic in economics in high school and at the university level to only business-oriented students ignoring the other levels below and other fields yet they also form a basis for charging taxes.

#### Funding

The author received no direct funding for this research.

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#### Citation information

Cite this article as: Knowledge requirements, tax complexity, compliance costs and tax compliance in Uganda, Doreen Musimenta, *Cogent Business & Management* (2020), 7: 1812220.

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