

Tax compliance cost and international trade in Africa

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Abstract

International trade in Africa could be one of the antidotes to the precarious poverty and economic deficiency in which the continent finds itself. An outward orientation towards international trade opens the continent to many opportunities including an increase in productivity and the development of redistributive channels for both natural and manufactured products. Resources in Africa could also be efficiently allocated and other consumption opportunities will be exploited when international trade is encouraged and reformed. However, one of the major bottlenecks which affect the growth of international trade in the continent is tax compliance costs. Taxation and its compliance cost could be the most burdensome and costly business activity which has the potential to discourage business growth and investments. Tax compliance costs which include the cost and time involved in complying with various tax regulations in Africa could be a disincentive to trading firms. Adopting the institutional theory, this study has investigated the impact of tax compliance cost on international trade in Africa. The evidence shows that while the number of taxes paid by firms in a year and the tax rate as a percentage of commercial profit has a negative impact on international trade in Africa. However, the time taken for tax registration/compliance and post-tax filing time of firms seem not to have any immediate impact on international trade in Africa. This paper, therefore, argues that Africa needs tax reforms in the form of self-assessments, simplification of tax administration, risk-based inspections and electronic submissions of tax returns in order to reduce the current level of tax compliance burden on firms in Africa.

Keywords: Africa, Tax compliance, International trade, Tariffs, Quotas, Reforms

Introduction

The current economic stagnation which is witnessed across the African continent is partly attributed to the low level of international trade regarding both imports and exports. As far back as 1817, David Ricardo wrote that international trade is beneficial to a country in the sense that it increases the variety of gains which accrues to an economy (Feenstra, 2018). In a similar vein, economic theory propounds that outward-oriented export growth has a tremendous economic benefit and it is central to economic well-being for nations including Africa (Bresnahan *et al.*, 2016). Undoubtedly, Africa's share of Global trade has dwindled over the past few decades and this downward trend has been attributed to high tariffs, poor regional integration, lengthy shipping times, conflicts and corruption among others (Macphree, Peter, & Sattayanuwat, 2013). Across the 54 African countries, apart from South Africa which has some level economic stability, the other economies have been growing at a slower pace with acute infrastructural, economic and political challenges coupled with weak markets which have culminated into low international trade abilities (Anelich, 2014). A recent study using a firm-level data from Ghana, Tanzania, and Kenya indicate that trade liberalisation and export intensity raise the average total factor productivity (TFP) of the firm and this needs to be encouraged and promoted in Africa. However, this evidence is based on the fact that there is a conducive environment relating to factor markets, trade patterns and the cost associated with international trade (Bresnahan, Coxhead, Foltz, & Mogue, 2016). Again, Anelich, (2014) argues that the standardisation of products and the inability of African countries to meet international standards in their exports is a major factor which has hindered international trade in Africa.

It is expected that growth as a result of international trade translates into poverty reduction and improvement in the general well-being of Africans. Particularly, the export of manufacturing products is an important step to raise productivity as well as economic growth (Bresnahan *et al.* 2016). Thus, an open trade regime expands market-size for domestic producers as well as gains in knowledge spillovers from foreign firms and markets. However, Giovanni and Levchenko (2012) argue that trade openness could lead to volatility whereby only large firms are able to compete effectively in an international market.

Among the several challenges facing international trade in Africa, tax compliance requirements and high tax compliance costs serve as one of the biggest hurdles to the growth of international trade (Smulders & Naidoo 2013). Ordinarily, the main purpose of any taxation is to raise sufficient income for both central and local governments to support government expenditure.

However, the introduction of any form of tax comes with it an additional cost to the trading firm apart from the amount of taxes imposed. This is referred to as tax compliance cost (Sapiei & Kasipillai, 2014). Tax compliance costs refer to the various costs incurred by firms in meeting tax requirements (Smulders & Evans, 2017). Ojeka (2011) indicated that enormous tax burdens and multiple taxation policies of both central and local governments provide a disincentive to firms to engage in international trade. Smulders *et al.* (2016) intimate that tax compliance cost measured by the amount of time and money in meeting tax regulations could serve as a barrier to firm growth. In spite of the various studies measuring the impact of the tax burden on business growth, very little empirical studies exist on how tax compliance cost affect international trade (Eichfelder & Kegels, 2014). More importantly, there is a limited research on tax compliance costs in developing countries such as in Africa where tax regulations are inhibitive to firm growth and trading activities (Sapiei & Abdullah, 2014; Yesegat, Coolidge, & Corthay, 2017). Many other tax experts also agree that studies on the various tax compliance costs still remain in the black box of which there is the need to unpack tax compliance costs and its impact on international trade in Africa (Cui, 2015).

The institutional theory has been used over the years to understand the nature, role and impact of regulatory institutions on the growth of firms and how these institutions themselves change over time (North, 1990; Scott, 1992). In tax administration, regulatory institutions are usually tasked to enact, administer and regulate various tax policies both at the local and central government levels (Hasseldinea, Holland, & Rijt, 2011). The tax institutions in Africa have the potential to affect firms both large and small in various ways which could impact either positively or negatively on international trade. The Institutional theory, therefore, provides the opportunity to analyse the various tax institutions which affect international trade in Africa (Bruton *et al.*, 2009). More importantly, Africa presents a unique context to study tax compliance cost and its impact on international trade where a large number of regulatory and tax institutions are void which increases the cost of tax compliance on importing and exporting firms (Aidis *et al.*, 2008; Sutter *et al.*, 2013; Khavul *et al.*, 2013).

In light of the issues raised thus far, this study makes two main contributions. First, studies of this nature focusing on the impact of tax compliance cost on international trade in Africa is scarce (Tengs, 2016). Therefore, this study fills this gap by investigating how tax compliance cost issues can stifle outward export/import-orientation of firms in Africa. Second, this study also contributes to the understanding of the role of tax regulatory institutions and how the tax is administered generally in Africa and the various compliance issues that firms encounter.

Background

International Trade and the Promise of Economic Growth

The international economics literature proposes that countries which are export-oriented are found to be more productive than those who do not (Chen, Minjia, & Guariglia, 2013). Globally, between 1960-2010, the total share of international trade over the real-domestic product (GDP) has increased by 172% (Fagiolo & Mastrorillo, 2014). International trade is seen as a redistributive process whereby countries by means of various channels make both natural and manufactured products available to other countries through a bargaining process (Huang *et al.* 2017). Huang *et al.* (2017) argue that due to the uneven geographical distribution of both natural resources and consumption patterns, international trade has been the only way whereby nations overcome the deficiencies associated with production and consumption. When nations trade among themselves, resources are more efficiently allocated, consumption possibilities are exploited, and the output of firms are also increased in a country (Mullings & Mahabir, 2018). In most cases, trade barriers restrict largely the number of goods and prices that are available to consumers in a country (Nigai, 2017). Trade openness is an important factor in economic growth (Mullings & Mahabir, 2018). Therefore, greater openness in trade attracts foreign direct investment, encourages entrepreneurship, and drives the acquisition of new knowledge and specialised technology to produce manufactured products.

Developing countries are therefore encouraged to actively participate in the export promotion. An outward export-orientation contributes enormously to economic growth. Feenstra (2018) identifies that there are three gains for countries when they engage in international trade. Firstly, countries which produce differentiated products for exports do operate under some level of monopolistic competition which makes them to price their products above the marginal cost. Secondly, international trade allows firms to be heterogeneous in their levels of productivity whereby the most productive firms continue to expand their exports while the least productive ones exit the market. Finally, the competition between exporting firms in an international market leads to the reduction in the mark-ups that are charged. At the firm level, there are two main theoretical reasons for engaging in exports. Firstly, it allows the firm to do self-selection whereby only the most productive firms are able to participate and compete in international markets. Secondly, most firms learn the business of exports by engaging in it (Chen, Minjia, & Guariglia, 2013). Thus, exports allow firms to develop various capacities, expertise and knowledge which increase their productivity in trade. Fernandes and Tang (2014) argue that the firm learns mainly by engaging neighbouring firms by updating its prior

knowledge about demand in foreign markets based on factors such as the heterogeneity of sales activity and general export performance.

In the current economic difficulties of African countries, international trade could be one of the most important strategies for economic growth. Research evidence has indicated that the rapid economic growth which has been witnessed in China over the past few decades is attributed to a massive expansion in their export trade. For instance, between 2000 and 2007; Chinese exports grew by 390% transitioning her from a net-importer to a huge net exporter of mainly industrial products (Lin *et al.*, 2014). In order to promote international trade in Africa, the prerequisites can be numerous but few of them are discussed below. Firstly, for very small economies such as those found in Africa, there is the need for proactive government export promotion assistance. Such government interventions needed to be backed by public policies to encourage particularly smaller firms to become exporters to increase their productivity (Feng, Li, & Swenson, 2017). In this direction, several countries have operated export promotion agencies to support domestic firms to penetrate international markets with their products. Such assistance comes in the form of locating distributors, observing product regulations and adaptations to foreign tastes (Broocksa & Biesebroeck, 2017).

Secondly, Feenstra (2018) indicates that in order for countries to derive the best gain from international trade, there is the need for fewer restrictions in tariffs and quotas in order to encourage domestic firms. Favourable trade policies among the various trading blocks in Africa and those of other countries are therefore needed to promote international trade. More importantly, Jarreau and Poncet (2014) also argue that the efficiency of the financial sector in a country is one of the major ingredients for an export-oriented economy. This is the hurdle for most African countries since financial services remain shallow and unresponsive in Africa (Bowen *et al.*, 2009; Klyton & Rutabayiro-Ngoga, 2017). Africa is noted to have one of the lowest financial penetrations globally. Apart from South Africa, 20% of all Africans are said to be unbankable and this is likely to affect the conduct and operation of international trade (Popoola, 2009; Bouët & Vaubourg, 2016). Bouët and Vaubourg (2016) imply that since exporting firms need to make upfront cost on foreign customers, administrative procedures, and translation of export documentation as well as on foreign distribution networks, the availability of domestic financial capital is crucial in promoting international trade. The vibrant nature of the domestic market, as well as access to adequate credit to meet upfront cost, is a major determining factor for the promotion of international trade (Brandt & Peter, 2017).

In addition, a greater access to efficient energy for direct use has an impact on the production of manufactured goods for exports (Wu & Chen, 2017). This is essential because energy is

fundamental to economic growth. More so, the type and availability of intermediaries used by exporting firms determine the success that is achieved through their activities (Bai, Krishna, & Hong, 2017). Thus, the type of intermediary used by exporters could affect the cost incurred in an export business. Various trade reforms are also important in the conduct of trade in Africa (Ramanarayanan, 2017). In order to increase international trade in Africa, imports should also be able to meet the heterogeneous income levels of citizens which would encourage the patronage of a variety of differentiated products. Thus, a broad level of differentiated products is needed to meet various demand levels in Africa. This is essential because there is a positive relationship between per capita income and the quality of exports consumed by an individual (Fajgelbaum, Grossman, & Helpman, 2011). This is because the vertical specialisation of imported products has distributional consequences on the pattern of trade in a country. In both agricultural and other manufactured product exports from Africa, there is the need for the enforcement of intellectual property rights which encourages innovation, productivity and economic development (Campi & Duenas, 2016).

According to Cao and Wang (2017), one of the most important aspects of international trade which countries could take advantage of is the importation of foreign technologies to support domestic technological innovation. This has been the experience of China which was achieved through series of imitation and learning processes and looking at the current level of technological development across the African continent, this could be a driving factor for economic development to increase the production of standardised exportable products.

International Trade in Africa

Apart from the period 1990-2009, international trade in Africa has seen much growth over the past few decades particularly in natural resources such as cocoa, coffee, bauxite, coltan and gold. A number of reasons account for this growth. The most important among these reasons is the growth in bilateral trade agreements between Africa and other trading blocs such as China and Europe and America (Mullings & Mahabir, 2018). Among these three major bilateral partners, China perhaps has been the most important partner in spurring Africa's growth in international trade particularly in oil-producing countries in Africa such as Nigeria (Huang *et al.* 2017). These bilateral relationships have seen growth in the private sector as well as foreign direct investments into the development of the export sectors in Africa. For instance, both the Cotonou Agreement and the African Growth and Opportunity Act (AGOA), passed by the American government in the year 2000 have increased export activities among African countries (Hurreeram & Little, 2004; Mullings & Mahabir, 2018). However, using a trade data

between China and South Africa, Algeria, Nigeria and Egypt, (Huang, *et al.* 2017) has called for a comprehensive impact analysis of the ecological and environmental consequences of these trade relationships to encourage a balanced trade. More so many researchers argue that even though trade in various commodities in Africa has increased over the past decades, it has not contributed to the economic growth of the continent. For instance, even though the Democratic Republic of Congo is noted for the massive exportation of coltan, it has not contributed to any observed economic development in the country (Bleischwitz, Dittrich, & Pierdicca, 2012).

International trade in Africa has faced several challenges over the years. Firstly, erratic and severe climatic changes in Africa remain one of the most important factors which have affected international trade in Africa. Climatic changes have reduced the ability of farmers to produce mainly food and other cash crops for the international market. Secondly, the African continent is noted to have a high trade cost across the three main markets namely domestic, domestic intra-African and the international (Bresnahan *et al.* 2016) Thirdly, the current observations is that most African countries produce a narrow range of exportable products which is only geared towards supplying rich countries with raw material without adequate mechanisms and intention to process these raw materials themselves (Bresnahan, Coxhead, Foltz, & Mogues, 2016).

In the African region, the lack of a common currency market and exchange rate volatility has been one of the major hurdles facing ECOWAS and other trading blocs in Africa such as the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), West African Economic and Monetary Union (WAEMU) Economic Community of Central African States (ECCAS) and the Southern the African Development Community (SADC). (Qureshi & Tsangarides, 2012; Cieřlik,2015). There is, therefore, a consistent call over the years for regional trade integration through the African monetary union to boost international trade in the continent. Hurreeram and Little (2004) also argue that the lack of raw materials, technical know-how, inadequate and unreliable financial resources and lack of the appropriate infrastructure has dwindled the progress of international trade across the African continent. Other factors include lack of macroeconomic stability, high transport and transaction cost, high labour cost and lack of international distribution networks. It has been recommended that African Governments should therefore stop using control mechanisms but rather adopt market-based incentive system to boost trade (Asafu-Adjaye, 2004) In East African region, for instance, several barriers to trade such as institutional and infrastructural weaknesses, political instability and lack of effective regional integration policies to promote trade (Cieřlik, 2015). Trade reforms are therefore necessary to increase transparency and to promote firm and country

competitiveness in Africa. For instance, a lot of reforms have been initiated in Southern Africa states (Botswana, Lesotho, Namibia, Swaziland, and South Africa) over the past decade which was aimed at reducing unnecessary trade barriers as well as reducing the cost of doing the international trade (Havenga, Simpson, & Goedhals-Gerber, 2017). As much as possible, efficient energy level is needed to support high levels of production and quick transport systems to facilitate international trade (Ben Aïssa, Jebli, & Youssef, 2014).

Tax compliance cost and the conduct of International Trade in Africa

Within the tax literature, there has been a consistent and extensive ongoing debate on the extent to which taxation and tax compliance costs affect general business growth. The major source of revenue for governments of both developed and developing countries alike is corporate tax. However, compliance with tax policies comes with both direct and indirect costs on the firm which needs to be investigated properly (Yrjanson, Paolillo, & Jackson, 2011). The complexity that is associated with tax regulations and policies has become a widely discussed subject in both economic and public finance literature (Eichfelder & Vaillancourt, 2014). For instance, in Ethiopia, tax revenue collection has increased over the years and has covered 70% of government expenditure. Similarly, research evidence shows that tax regulatory compliance cost in South Africa makes a large portion of the total regulatory cost of a firm (Smulders & Stiglingh, 2008). In spite of the various studies measuring the impact of the tax burden on business growth, very little empirical studies exist on how tax compliance cost affect international trade (Eichfelder & Kegels, 2014). Even though research on tax compliance in developed countries started since the 1930s, empirical research on the concept in developing countries only started in the 1990s and this creates a research gap as far as Africa is concerned (Susila & Pope, 2012).

The current economic difficulties that is observed in almost all African countries is likely to put pressure on African governments to meet its revenue collection targets by introducing tax policies which may not be in consonance with business growth and may also create several complexities for the firm in meeting those tax policies (Yesegat, Coolidge, & Corthay, 2017). A common phenomenon according to Cui (2015) in tax administration particularly in developing countries is that tax payments and the costs associated with it remain largely informal and does not follow any observed rules in its administration. In some cases, tax laws are present, but they are largely not observed.

Eichfelder and Kegels (2014) identified both voluntary and enforced tax compliance costs which affect businesses directly and indirectly. In recent studies such as those of Marcuss *et al.*, (2013), Sapiei and Ismail (2014), and Yesegat, Coolidge, and Corthay, (2017); Hansford and Hasseldine (2012) and Sapiei and Abdullah (2014), it has been identified that tax compliance cost remains one of the barriers to growth for many firms in their attempt to comply with taxation policies of their various central and local governments. Tax compliance cost refers to all costs that are associated with corporate tax compliance in the form of time and money (Das-Gupta, 2006). Sapiei and Abdullah (2014) also indicate that corporate tax compliance cost includes all the resources that are expended by firms in complying with tax regulations. Such cost comes in the form of staff costs associated with furnishing tax returns, payments to external tax professionals and other incidental costs associated with tax compliance such as postage, phone calls, printing and travelling. Currently, there exists an extensive literature on tax compliance cost measurement and estimating the various elements of tax compliance costs including accounting costs, computational costs, social and psychological compliance costs. Broadly, tax compliance cost is categorised into both computational and planning costs (Sapiei & Ismail, 2014). Computational cost refers to all the cost which is associated with meeting mandatory compliance requirements by tax authorities whiles planning cost are discretionary cost that is incurred at the firm level due to internal arrangements. Similarly, Sapiei and Abdullah (2014) also classified tax compliance cost into economic and non-economic costs. Economic cost consists of time and money which is spent on tax compliance efforts of the firm. Non-economic costs include all the psychological costs which are very difficult to measure but have a negative impact on the firm (Tran-Nam, 2001). The imposition of any form of trade tax on the firm results in both direct and indirect tax compliance cost. In the context of Africa, various trade reforms are needed to reduce the cost of both imports and exports on firms. By so doing, firms will be encouraged to adopt an open orientation to exports which bring economic advantages to the continent (Havenga, Simpson, & Goedhals-Gerber, 2017). The various elements of tax compliance cost are illustrated in Figure 1 below.



Forms of tax compliance cost

Source: adapted from Sapiei and Ismail (2014)

Theory and Hypothesis Development

Institutional Theory, International Trade and tax compliance cost in Africa

Institutions remain at the forefront of international trade in Africa. Favourable trade policies and general trade openness are as a result of the effectiveness of the various institutions that are set up by the African countries themselves to oversee trade activities in the continent themselves (Bresnahan *et al* (2016). Therefore, many governments in Africa regulate trade flows by adopting trade policies which includes import tariffs, quotas, export taxes, subsidies and a host of trade barriers on goods and services in order to support an open orientation to trade (Aboua, 2013) Unfortunately, many institutions which are set up in Africa to oversee the growth of businesses are noted to be void and ineffective due to various institutional bottlenecks (Sutter *et al.*, 2013; Khavul *et al.*, 2013). The institutional theory, therefore, provides a unique framework to analyse the various environmental conditions that affect the growth of firms in their bid to expand their business activities (North, 1990; Scott, 1992). Alvarez *et al.* (2011) indicate that the institutional theory does not only provide the tool to analyse the external environmental factors which affect firms but rather it analyses the beliefs,

values and attitudes of a given society which has an impact on the conduct of businesses. Whiles DiMaggio and Powel (1983) classified these institutions into coercive, normative and mimetic, Scott (2001) has classified them into regulatory, normative and cognitive.

One of these regulatory institutions which affect the conduct of business in Africa are tax regulatory institutions and they are very important for the delivery of tax policies which helps countries to raise revenue for their activities (Eichfelder & Vaillancourt, 2014). In terms of tax administration in Africa, regulatory institutions are responsible for enacting, implementing and enforcing tax policies in Africa. Empirical evidence has shown that countries which keep regulations to the barest minimum provide incentives to firms to increase their productivity (Gnyawali & Fogel, 1994). According to Aboua, (2013) the current downward trend of trade in Africa needs effective institutions and trade policies which will provide the conducive environment for foreign direct investments, access to the market, credit availability, intellectual property rights, standardisation and regional economic integration. In the Democratic Republic of Congo, Bleischwitz, Dittrich, and Pierdicca (2012) noticed that even though the country earns most of its income from the exports of coltan, the system is involved with poor property rights, ineffective trade policies and weak institutions which has plunged the country into civil wars and insecurities. Similarly, trade and tax regulations in South Africa are seen as nothing but red tape to business expansion and growth (Smulders & Stiglingh, 2008). Therefore, trade reforms are important for trade growth in the African continent whereby governments endeavour to provide favourable conditions to attract foreign direct investments and participate in the global economy through efficient institutions (Asafu-Adjaye,2004). Based on the institutional theory, the various hypotheses guiding this study are developed and presented below.

The growing cost of tax compliance and its impact on international trade in Africa

Tax compliance cost remains one of the costs associated with international trade in Africa. Cui (2015) argues that the capacity of tax administration in Africa largely determines the range of tax policy instruments and efficiency thereof. Mostly, African firms are faced with both direct and indirect cost of meeting tax regulations in their transactions with both domestic and international tax authorities (Tregenna & Kwaramba, 2014). Three aspects of tax compliance costs namely monetary, time and psychological costs are noted in the literature (Smulders & Stiglingh, 2008). Firstly, the monetary cost of tax compliance in Africa is regarded as high compared to other continents (Tengs, 2016). This is mainly attributed to irregular tax payments and the volume and amount of tax that both importing and exporting firms are required to pay

yearly. Other monetary costs include record-keeping costs, cost of filing tax returns, the engagement of tax professionals on tax-related issues and other incidental costs such as postage costs, telephone, travel and other communication costs. Secondly, the value of time is part of the cost that is associated with tax compliance (Macphee, Peter, & Sattayanuwat, 2013). Usually, time remains unmeasured in calculating tax compliance costs. However, the time that is associated with preparing, completing and submitting tax returns remains high in Africa. For instance, it has been estimated that it takes 116 days to move an export container from a factory in Bangui (Central African Republic) to the nearest port of departure to complete all necessary customs, administrative and port regulatory requirements. Similarly, it takes 71 days to perform the same function in Ouagadougou (Burkina Faso). In contrast to this experience, it takes only five (5) days in Copenhagen, 6 from Berlin, 16 from Port Louis in Mauritius and 20 days in Shanghai (Djankov, Freund, & . Pham, 2008).

It has also been estimated that the time for completing and submitting provision tax returns takes between 1.1 to 1.2 hours per submission. However, annual income tax and VAT returns take an average of 3.1 hours per return (Smulders & Stiglingh, 2008). Also, the time associated with shipping delays due to tax compliance which results into inventory holding costs, depreciation and spoilage are usually quantified and factored into tax compliance costs (Macphee, Peter, & Sattayanuwat, 2013). Thirdly, exporting and importing firms in Africa are faced with psychological and social costs which cause emotional, mental stress and anxiety among firms and this undermines the tax regulations and increases the cost of tax compliance in Africa (Sapiei & Ismail, 2014). Based on the above discussion and evidence in the literature, four but interrelated hypotheses are presented for this study as follows:

H_{1a}: The number of tax payments per annum is negatively related to the growth of international trade in Africa

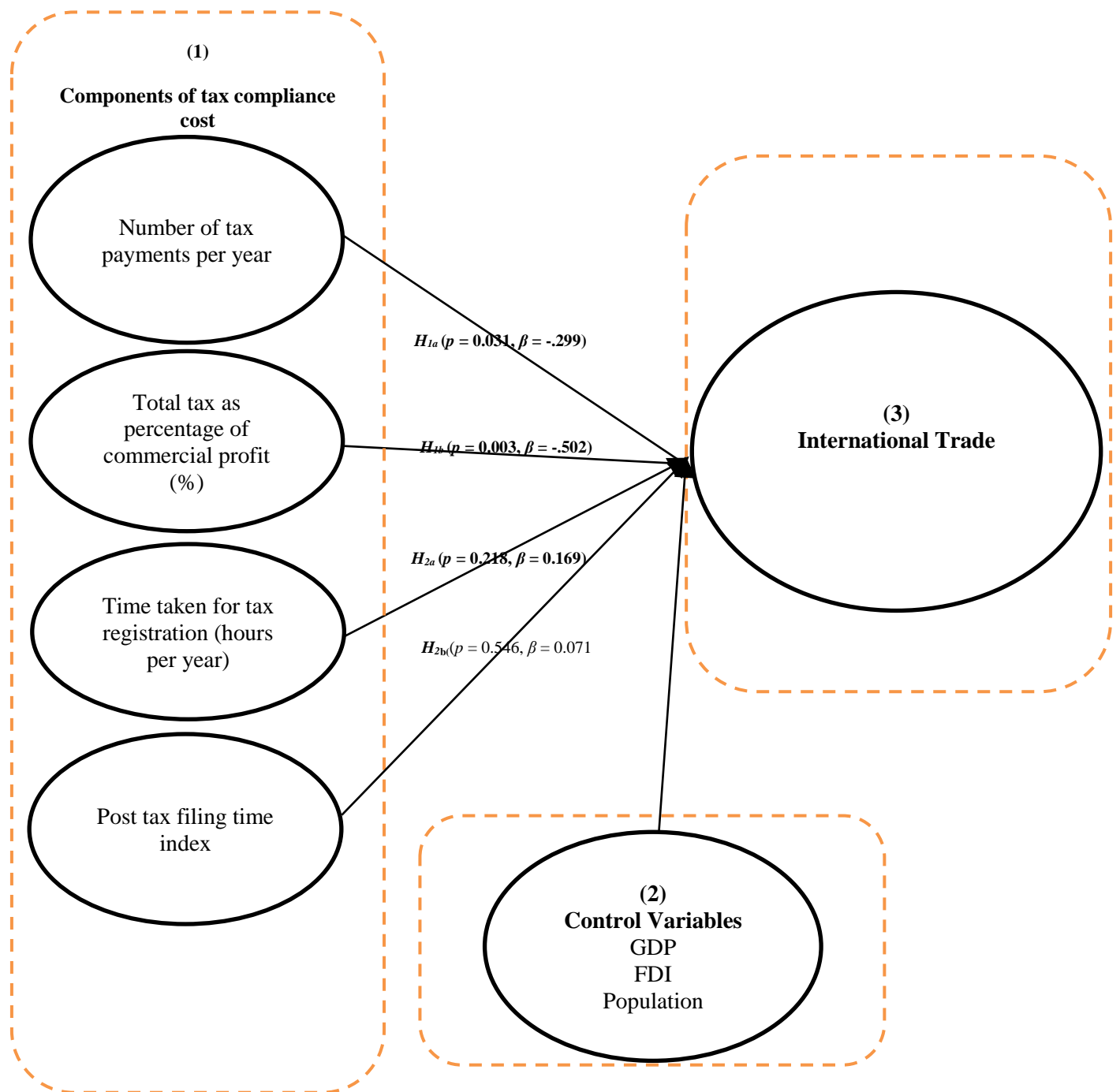
H_{1b}: The percentage of commercial profit paid as tax per annum is negatively related to the growth of international trade in Africa

H_{2a}: The time taken for completing tax registrations is negatively related to the growth of international trade in Africa

H_{2b}: The post-tax filling time associated with tax compliance is negatively related to the growth of international trade in Africa

Based on the above discussion and considering the major findings from the literature, the following conceptual framework as shown in Figure 2 is proposed for this study in relation to the hypotheses stated above.

Figure 2: A hypothesised model for the impact of tax compliance cost on international trade



Research Context and methodology

Sample and data sources

The main source of data for this study comes from the World Bank's Doing Business Report (2018) for 46 countries in Africa (4 in North Africa and 31 in Sub-Saharan Africa). Firstly, the international trade variable (index) which is the dependent variable records the *time* and *cost* (excluding taxes) associated typically with all the logistical processes and procedures involved with both exporting and importing in the selected African countries (World Bank, 2018). This is an aggregate data which was obtained by combining variables relating to the three sets of procedures namely *documentary compliance*, *border compliance* and *domestic transport*.

Secondly, four (4) independent variables indicating tax compliance cost of exporting and importing firms across the same 46 African countries were also sourced from the World Bank's Doing Business Report (2018). The four independent variables include *the number of tax payments per year (absolute numbers)*, *total tax as a percentage of commercial profit*, *the time taken for tax registration (number of hours per year)*, and *finally post-tax filing time*. Each of the four (4) independent variable is an aggregate data (index) measuring the cost of tax compliance among the 46 African countries used in this study (World Bank, 2018).

The data on both international trade and tax compliance cost was collected using questionnaires designed by World Bank expert advisers. Broadly, the questionnaires used a simple business case which ensured data comparability across 190 countries (including the 46 African countries) in terms of business size, location and number of operations (World Bank, 2018). These questionnaires were administered to 13,000 local experts including lawyers, business consultants, accountants, freight forwarders, government officials and other professionals who routinely provide legal and regulatory advice in 190 countries. Specifically, data on international trade was collected from local freight forwarders, customs brokers, port authorities and traders (mainly limited liability companies). In order to validate these results, the World Bank team have conducted a series of country visits and several conference calls and written correspondences.

Finally, the study used country-specific data including foreign direct investment (FDI), population and Gross Domestic Product (GDP) from UNCTAD as control variables. In order to make data comparable across the various economies, there are ten (10) assumptions which guided the whole study.

- For each economy, it is assumed that the warehouses are located in the largest city of both the exporting and importing countries respectively

- There is an assumption of differentiated traded products between the exporting and importing companies
- Any shipment whether containerised or not is regarded as a unit of trade
- Ig government fees are calculated based on the value of the product, the value is estimated to be \$50,000
- Products are assumed to be new but not used ones
- The exporting and importing companies engage the services of freight forwarders, customs brokers or both and pays for all costs associated with these procedures
- The mode of transport is the most widely used and acceptable by both the exporting and importing companies
- All electronic submissions requested by governments were included in the export documentation process and were taken into consideration
- A port of border is defined as any space (seaport or land port) where a shipment can enter or leave the country
- Relevant government agencies include customs, port authorities, road police, border guards, standardization agencies, ministries or departments of agriculture or industry, national security agencies, central banks and any other government authorities.

Table I below summarises the sources and types of data that were used in this study.

Table 1: Summary of data sources and variables

Variable	Unit	Number of Respondents	Data sources
International Trade	Index	1,259	World Bank, 2018
Number of tax payments per year	Quantity	1,685	World Bank, 2018
Total tax as a percentage of commercial profit	Percentage	1,685	World Bank, 2018
Time taken for tax registration	Hours	1,685	World Bank, 2018
Post time filing time	Hours	1,685	World Bank, 2018
GDP	\$	n/a	UNCTAD, 2016*
FDI	\$	n/a	UNCTAD, 2016*
Population	Millions	n/a	

*These are the most recent data available

Constructs and Measurement

Dependent Variable

Access to the international market by African exporting and importing firms remain crucial for economic growth in the continent. Therefore, trade-related transaction costs associated with, logistics, freight, customs, administrative fees and border costs which impede access to international markets need to be understood and reduced to the barest minimum (Djankov, Freund, & Pham, 2008).

The dependent variable which is an international trade (trade across borders) was measured using two different sub-variables namely *cost* and *time* in completing exporting and importing procedures such as documentary compliance, border compliance and domestic transport (World Bank, 2018). Time was measured in hours and day is considered to be 24 hours. There are three levels of the cost involved in the measurement. The first level of cost measures the cost related to documentary compliance with regulatory agencies which is aimed at measuring the total burden of preparing, presenting and obtaining the necessary clearance certificates or stamps relating to export and import activities. The second level of the cost relates to border compliance which captures the cost associated with customs regulations, clearance, handling and meeting other regulations regarding mandatory port inspections. The third level of the cost relates to the cost associated with domestic transport including transporting and shipment from the warehouse in the largest business city of the exporting and importing country to the most widely used seaport or land border through the most widely used route. All distance to frontier scores were measured on a scale from 0 to 100 where 0 indicates the worst performance for the economy and 100 the frontier. Further details of the dependent variable, sub-variables and the items measured can be found in Appendix I.

Independent Variables

Governments all over the world need some sustainable level of taxation to be able to meet public investments such as infrastructure, health, education and other social amenities (Boden *et al.*, 2010). However, governments need to choose both the tax base and the level of tax rates carefully so that tax compliance does not inhibit firm growth. Recent studies indicate that companies consider tax rates as among the top five constraints to business growth (Djankov, Freund, & . Pham, 2010). The study engaged four (4) independent variables each measuring an aspect of tax compliance cost in Africa. These includes *the number of tax payments per year (absolute numbers)*, *total tax as percentage of commercial profit*, *time taken for tax registration and compliance (number of hours per year)*, and finally *post-tax filing time* among the 46 African countries engaged in this study (Marcuss, *et al.*, 2013) (Bank, 2018).

Firstly, the number of tax payments made by both exporters and importers per annum was recorded as a cost to the trading company. The recording included the frequency of payment, the frequency of filing, and the number of agencies involved. This includes all tax withheld such as VAT and employee taxes. Secondly, the time required (in hours) for tax registrations which include the time required by tax officials to issue tax registration number is also measured as a cost to the importing and exporting company in each country involved in this study. This variable also included the time required to prepare, file and pay corporate tax, value added or sales tax and labour taxes. Thirdly, the total tax contribution as a percentage of commercial profit per annum was also used as an independent variable measuring the cost of tax compliance in Africa. This reflects the total amount of tax paid in a singular year by the firm excluding withheld taxes such as personal income tax and VAT. Finally, post-tax filing time which includes time to comply with VAT refunds, time to obtain VAT refund, and the time to comply with corporate income tax audit. Further details of the four independent variables and the items measured can be found in Appendix II.

Control Variables

This study was controlled using three (3) country-specific variables namely GDP, population and FDI for the 46 African countries. These variables were included in this study because these factors are considered to be able to influence the level of trade activity at the country level in Africa (Djankov, Freund, & Pham, 2008). It is therefore important to understand the nature of the influence of these variables on international trade in Africa.

Statistical analysis and results

Table II below presents the descriptive statistics (i.e. means and standard deviations of the dependent and independent variables, minimum and maximum values, skewness, and Kurtosis) of the dependent, independent and control variables. The regression results are also presented in Table III. The Regression model analysed *the number of tax payments per year, tax compliance time, tax contribution rate (%) and post-tax filing index* as the four costs that are associated with tax compliance and how they impact on international trade (IT) in Africa. Two (2) main regression models were executed. The first model which is the restricted model consist of the control variables (GDP, FDI and Population) and the dependent variable (IT). The second model which represents the full regression model consists of all the control variables, the independent variables and the dependent variable. The purpose of executing the two models

is to determine the influence of the control variables separately as well as to assess the overall fitness of the full model.

Firstly, from the full regression model (Model 2), the number of tax payments per year ($p = 0.031$, $\beta = -.299$) is statistically significant at 5% level. Thus, the hypothesis regarding the positive impact of the number of tax payments per year on international trade in Africa is accepted. A unit increase in the number of tax payments per year therefore reduces international trade in Africa by 29.9%. Secondly, tax compliance time ($p = 0.218$, $\beta = 0.169$) is statistically insignificant. The hypothesis regarding the negative relationship between tax compliance time and international trade in Africa is therefore rejected. Thirdly, the tax contribution rate as a percentage of the commercial profit of the trading firm ($p = 0.003$, $\beta = -.502$) is statistically significant at 5% level. Thus, the hypothesis regarding the negative relationship between the tax rate paid by importing and exporting firms is accepted. Accordingly, a unit increase in the tax rate of importing and exporting firms in Africa reduces international trade in Africa by 50.2%. Finally, *post-tax filing index* ($p = 0.546$, $\beta = 0.071$) is statistically insignificant. Therefore, the hypothesis regarding the negative impact of *post-tax filing index* on international trade in Africa is rejected.

The results for the control variables are as follows: population ($p = 0.492$, $\beta = 0.044$), GDP ($p = 0.481$, $\beta = -.058$) and FDI ($p = 0.004$, $\beta = 0.173$). The results indicate that whilst FDI is statistically significant at the 5% level, GDP and population are statistically significant and therefore do not have any influence on international trade in Africa. The level of FDI into Africa seems to have an influence on the growth of international trade in Africa. Thus, an increase in a unit of FDI into Africa could influence the level of international trade by 17.3%. The R^2 measures the overall fitness of the regression model. From the full regression model, the R^2 value is 0.497, and its adjusted value is 0.404, thereby indicating that the full model explains 40.4% of the variance in international trade.

Another means of ensuring the overall fitness of the model is to inspect the ANOVA F -values. Therefore the ANOVA F - values of the full regression model were inspected. The F -value is 2.840 and it is significant at the 1% level. Tables II and III below presents the descriptive statistics, correlations and results of the regression analysis respectively.

Table II: Descriptive statistics and correlations

		Std.	Min	Max	Skewness	Kurtosis	1	2	3	4	5	6	7	8	
	Mean	Deviation													
(1)	International Trade	2.373	0.241	1.731	3.124	0.004	1.766	1.000							
(2)	Tax payments per year	1.506	0.233	0.780	1.799	-1.593	2.623	-0.344	1.000						
(3)	Tax compliance Time	2.396	0.233	1.880	2.948	0.063	0.068	0.341	-0.352	1.000					
(4)	Tax contribution rate (%)	1.636	0.187	1.133	2.335	0.465	3.604	-0.389	-0.215	-0.076	1.000				
(5)	Post tax filing Index	1.659	0.287	0.710	1.997	-1.124	1.164	-0.244	-0.249	-0.248	-.388	1.000			
(6)	c1_population	4.003	0.710	1.977	5.280	-.719	0.346	0.305	-0.089*	0.187	0.010**	-0.207	1.000		
(7)	c2_GDP	4.051	0.688	2.535	5.610	0.247	-.253	0.245	-0.293	0.191	-0.055**	0.042**	0.764	1.000	
(8)	c3_FDI	2.573	0.716	0.903	5.610	-.212	0.123	0.364	-0.248	0.116	-0.148	-0.030**	0.583	0.735	1.000

Valid N (list-wise):46

Note: * $p < 0.1$, ** $p < 0.05$, * $p < 0.01$**

Table III: Regression analysis of the impact of tax compliance cost on International trade

International Trade												
	Model 1						Model 2					
Variable	Unstandardized Coefficients (β)	Std. Error	Standardized Coefficients (Beta)	t	Sig.(p)	VIF	Unstandardized Coefficients (β)	Std. Error	Standardized Coefficients (Beta)	t	Sig.(p)	VIF
Tax payments per year							-0.299**	0.134	0.312	2.240	0.031	1.461
Tax compliance Time							0.169	0.135	0.167	1.251	0.218	1.346
Tax contribution rate (%)							-0.502**	0.159	0.411	3.165	0.003	1.271
Post-tax filing Index							0.071	0.117	0.086	0.610	0.546	1.493
c1_population	0.085	0.067	0.263	1.264	0.213	2.228	0.044	0.063	0.136	0.693	0.492	2.905
c2_GDP	-0.082	0.081	-0.247	-1.014	0.316	3.066	-0.058	0.082	-0.172	-0.713	0.481	4.422
c3_FDI	0.126*	0.066	0.388	1.920	0.062	2.106	0.173**	0.057	0.533	3.050	0.004	2.305
<i>R</i>	0.407						0.705					
<i>R</i> ²	0.165						0.497					
Adjusted <i>R</i> ²	0.107						0.404					
ANOVA <i>F</i>	2.840						5.355					
<i>F</i> Change	2.840						5.355					
Sig. <i>F</i> Change	0.000						0.000					
N	46						46					

Note: * $p < 0.1$, ** $p < 0.05$, * $p < 0.01$**

Based on the above analysis using the various independent, control variables and the dependent variable, international trade in Africa can be predicted by the equation below:

$$IT = \alpha + \beta_1 fdi + \beta_2 gdp + \beta_3 pop + \beta_4 tpy + \beta_5 tct + \beta_6 tcr + \beta_7 ptfi + \varepsilon \text{ -----(1)}$$

Where: α =constant term, β_1 to β_6 = Regression coefficients, **fdi** = Foreign direct investment, **gdp** = Gross domestic product, **pop** = Population, **tpy** = Tax payments per year, **tct** = Tax compliance time, **tcr** = Tax contribution rate (%), **ptfi**= Post-tax filing Index and ε = Error term.

Discussion of Empirical Results

This study presents a unique understanding of the impact of tax compliance cost on the growth of international trade in Africa. As discussed earlier, taxation in Africa is important in raising the needed revenue to support national projects and to provide social amenities needed by the citizenry. However, the tax base and rate could have dire consequences for businesses particularly those engaged in international trade (Djankov, Freund, & Pham, 2010). The results of this study are discussed below.

The total tax payments per year could present a heavy tax burden on trading firms in Africa

Firstly, the result of this study indicates that the number of tax payments per year in Africa could be an inhibiting factor to the growth of international trade. The results of this study indicate that trading firms in Africa are burdened with multiple taxes and have a negative impact on the growth of international trade. Several years ago, Adams Smith proposed that simplicity should be one of the main pillars of any tax system (Alley & Bentley, 2005). In this sense, he meant that a tax system where the same tax base is subject to multiple taxations, tax compliance becomes burdensome and inconvenient for businesses. Multiple taxations increase the cost of doing business (Bush & Maltby, 2004). This is crucial particularly for businesses in Africa which are already facing resource scarcity of various kinds (Atiase, Mahmood, Wang, & Botchie, 2018). The number of tax payments made also comes with it time compliance since each tax payment needs to go through, preparation, validation, submission and other tax consultations. Multiple taxations could also bring a peculiar burden to tax authorities since resources in terms of personnel and logistics are needed to keep such processes in check (Wynter & Oats, 2018). For instance, in most OECD high-income countries, the average tax payments per year is 11, however, it is 37 in Sub-Saharan Africa with a similar trading activity (Djankov, Freund, & Pham, 2010). This undoubtedly puts a financial and time burden on trading firms and this could also erode investor confidence from doing business in Africa. One

of the major procedures for making tax payments less burdensome is to allow for the filing of numerous taxes which are on the same tax base at the same time. More so, multiples taxations on the same tax base can also be merged to reduce the tax compliance cost on trading firms. Electronic submissions are currently encouraged across many jurisdictions and this is likely to reduce the time and cost associated with tax compliance. However, the question lies in the fact whether Africa has the kind of technology needed which would ensure an efficient electronic administration without any ambiguity. Currently, countries such as Kenya, Rwanda and Zambia have successfully introduced the electronic filing systems and it is expected that other African countries should follow suit.

A High tax rate can endanger international trade in Africa

The amount and cost of tax businesses pay matter a lot for their future growth and investment. Where businesses are made to pay high taxes, they are more inclined to remain in the informal sector where taxes are less burdensome (Farrar, 2011). This automatically will deny governments of the needed tax revenue to meet its budget. It is estimated that a 10% point increase in a tax rate could reduce the ratio of investment to GDP by 2% and this reduces business entry rate. More importantly, a 1% point increase in a corporate tax would reduce profits by 1.3% on the average (Djankov, Freund, & . Pham, 2008).

Usually, corporate taxes are paid as a percentage of commercial profit. The rule of thumb is that the tax rate should not overburden the trading firm taking into consideration other costs that are supposed to be met in the operation of the business. The results of this study indicate that the tax rate charged on trading firms in Africa remains high compared to other continents and this is likely to discourage trading activities and investor confidence in the continent. The tax rate indicates a comprehensive measure of all the taxes paid by the business as against the commercial profit. Current observations show that in most cases the tax rate which businesses pay across the continent is high and most businesses particularly micro and small businesses struggled to cope (Oberholzer, 2005). It has been therefore been recommended that tax authorities should adopt self-assessment in the sense that corporate institutions determine their own liability for tax payments under the law. Self-assessment reduces the level of ambiguity which is usually associated with tax assessments and it also reduces the administrative task of tax authorities. Self – assessments also reduce the discretionary powers of tax officers and bring fairness into tax administration processes. However, Rubinde (2017) argues that for self-assessment to be effective, it needs to be properly monitored and controlled to prevent abuse. Following the footsteps of Eastern Europe and Central Asian countries, most North African

countries such as Morocco, Tunisia and Algeria have revised their tax systems to include self-assessment and automated reporting systems as well as penalties for non-compliance. Also, keeping the tax rate at a reasonable level for businesses encourages the development of the private sector and the formalisation of businesses. This is very important particularly in the case of Africa where a large portion of the economy remains informal due to various reasons. The informal sector in Africa, therefore, needs to be brought into the formal domain in order to increase the tax revenue of African governments. Finally, businesses are interested in what they receive in turn for the corporate tax they pay. It is, therefore, necessary for African governments to be able to convert tax revenues into infrastructure which is critical for the functioning of businesses. Unfortunately, this is not the case for most parts of Africa.

Conclusion

Africa as the research context provides an interesting environment for a study of this nature. Africa is saddled with a series of economic, political and social challenges and this demands a critical attention to deal with. With these challenges, several African governments find solace in introducing tax policies which are sometimes covered by cumbersome administrative and compliance procedures which eventually discourages entrepreneurship, business growth and investor confidence. To encourage international trade in Africa, tax compliance cost should be brought to the barest minimum by adopting various approaches such as multiple filing systems, electronic submissions and self-assessments. This study has made two main contributions. Firstly, it has contributed to the tax literature by highlighting tax compliance issues involved in international trade. Secondly, the study by focusing on Africa through the adoption of the institutional theory has revealed the institutional deficiency which exists in Africa particularly in the area of tax administration, compliance and the multiple tax payment systems which discourages business growth and investment in the continent. This study has implications for policy and practice. African governments should endeavour to make tax administration very simple for businesses in order to encourage business formalisation (Otusanya, 2011). Self-assessments, risk-based inspections, trade reforms, regional cooperation and electronic submissions of tax returns should be encouraged (Boll, 2014). More importantly, African governments should be able to turn revenues into infrastructure for the purposes of business growth.

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Appendices

Appendix 1: Sub-variables measured in International Trade

Trade sub-variables	Items measured
Documentary compliance	<ol style="list-style-type: none"> 1. Obtaining, preparing and submitting documents during transport, clearance, inspections and port or border handling in the original country 2. Obtaining, preparing and submitting documents required by destination economy and any transit economies 3. Covers all documents required by law and in practice, including electronic submissions as well as non-shipment specific documents necessary to complete the trade
Border compliance	<ol style="list-style-type: none"> 1. Customs clearance and inspection by customs 2. Inspections by other agencies (if applied to more than 20% of shipment) 3. Port or border handling at most widely used port or border of economy
Domestic transport	<ol style="list-style-type: none"> 1. Loading and unloading of shipment at the warehouse, dry port or border 2. Transport by most widely used mode between warehouse and terminal or dry port 3. Transport by most widely used mode between terminal or dry port and most widely used border or port 4. Traffic delays and road police checks whiles shipment is en route

Appendix II: Independent variables and items measured

Independent variables	Items measured
Total Number of tax payments per year (quantity)	<ol style="list-style-type: none"> 1.Total Number of taxes and contributions paid including consumption taxes (VAT, sales tax or goods and service tax) 2. Method and frequency of filing and payment
The time required for tax compliance (hours)	<ol style="list-style-type: none"> 1. Collecting information and computing the tax payable 2. Completing tax returns forms, filing with proper agencies 3. Arranging payment or withholding 4. Preparing separate mandatory tax accounting books
Total tax contribution rate (% of commercial profit)	<ol style="list-style-type: none"> 1. Profit or corporate income tax 2. Social contributions and labour taxes paid by the employer 3. Property and property transfer taxes 4. The dividend, capital gains and financial transactions taxes 5. Waste collections, vehicle, road and other taxes
Post-tax filing Index	<ol style="list-style-type: none"> 1. Compliance time of a VAT refund process 2. Time to receive a VAT refund 3. Compliance time of correcting an error in the corporate income tax return including compliance with an audit process if applicable 4. Time to complete a corporate income tax

Appendix III: Model Summaries

