A G D I   Working Paper

WP/22/008

Fiscal Incentives and Tax Compliance Behaviour in Industrial Clusters: A Survey of Clusters in South-East Nigeria[1]

Ebele S. Nwokoye

Department of Economics, NnamdiAzikiwe University Awka, Nigeria

E-mail: es.nwokoye@unizik.edu.ng

Clement I. Igbanugo

Department of Economics, University of Benin, Nigeria

E-mail: izuclems@gmail.com

Chukwunonso Ekesiobi

Department of Economics, Chukwuemeka Odumegwu Ojukwu University, Nigeria

E-mail: cs.ekesiobi@coou.edu.ng

Stephen K. Dimnwobi

(Corresponding Author)

Department of Economics, NnamdiAzikiwe University Awka, Nigeria

E-mail: stephenkcdim@gmail.com

Research Department

Fiscal Incentives and Tax Compliance Behaviour in Industrial Clusters: A Survey of Clusters in South-East Nigeria

Ebele S. Nwokoye, Clement I. Igbanugo, Chukwunonso Ekesiobi & Stephen K. Dimnwobi

January 2022

Abstract

The study investigates the impact of fiscal incentives on the tax compliance behaviour of firms in industrial clusters in Nigeria. Data from 800 firms drawn from three industrial clusters in South-East Nigeria were collected using a structured questionnaire through a multi-stage sampling procedure. Descriptive statistics and the logistic regression model were applied to estimate the survey responses.The major findings of the study show that regular tax audit, firm size, simplifying the communication on tax requirement, communicating deterrent messages, educational attainment of the firm owner and political legitimacy of the current government as well as fiscal incentives (tax credit, tax reduction, capital allowance, investment incentives) significantly influence the tax compliance behaviour of firms in Nigeria's industrial clusters. Similarly, the study finds that fiscal incentives significantly enhance firm performance in Nigeria's industrial clusters. Implications and policy suggestions are presented for adoption by concerned stakeholders in the tax and industrial sectors.

Keywords: Fiscal incentive, Tax compliance, Industrial Cluster, Nigeria

1. Introduction

Increasing tax as a share of GDP is widely acknowledged as critical to the expansion process of developing nations and crucial to sustaining a functional state (Akitoby, 2018). Howbeit, some developing nations collect very little tax (Agyei, Marfo-Yiadom, Ansong & Idun, 2019), a typical example is Nigeria, Africa's most populous nation and largest economy. The total tax-to-GDP ratio for Nigeria was 5.7 percent in 2018 (OECD, 2019) which is one of the lowest tax/GDP ratios in Africa (Tunisia – 31.2%; South Africa – 28.4%; Morocco – 27.6%; Kenya – 18.2%; Ivory Coast – 17.9%; Egypt – 17.1%; Mali – 16.7%; Senegal – 16.2%; Rwanda – 16%, Ghana – 14.1% and Congo – 12.5%). This indicates that the country's full tax capacity has yet to be attained, particularly in the non-oil economy (Adeniran, Ekeruche & Onywkwena, 2021). To broaden the revenue base of the country and ensure improved tax compliance, several administrative reforms have been implemented over the last five years. These include the implementation of ICT solutions such as online portals for stamp duty assessment and payment (e-stamp), electronic processing of tax clearance certificates (e-TCC), automation of withholding tax remittances by ministries, departments, and agencies (MDAs), and the Integrated Tax Administration System (ITAS) project, the Voluntary Assets and Income Declaration Scheme (VAIDS), among others (Amaeshi, Adi & Ikiebey, 2019; Efobi, Beecroft & Belmondo, 2019). These measures notwithstanding, Nigeria's tax compliance has remained low. There are roughly 57 million economically active Nigerians, but only a small percentage of them fulfil their tax obligations (Mcculloch, Moerenhout & Yang, 2020). Statistics from the International Survey on Revenue Administration (ISORA) shows that in 2016, 761,057, 1,003,010 and 1,505,831 registered to pay Personal Income Tax (PIT), Company Income Tax (CIT), and Value Added Tax (VAT) respectively. However, only 14,823 (1.95%), 56,329 (5.62%) and 77,082 (5.12%) are active taxpayers.

Given the criticality of small business activity to tax revenue generation (Asongu & Odhiambo, 2019), and the vulnerability of the Nigerian economy to international oil price vagaries, policymakers advocate and utilise Fiscal Incentives (FIs) to support firms and not stifle them into obscurity with tax obligations. Fiscal incentives generally include tax exemptions, credits, concessions and other deductions from taxable income (Tuomi, 2011). Fiscal incentives in Nigeria encompasses tax incentives such as tax holidays, tax reduction, tax credits among others

(Fowowe, 2013) and non-tax-related incentives like Small and Medium Enterprises Credit Guarantee Scheme (SMECGS) and the National Enterprise Development Programme (NEDEP) (Onyeje, Court, & Agbaeze, 2020). These fiscal incentives are majorly implemented by the national tax agency - the Federal Inland Revenue Service (FIRS) in collaboration with all States Internal Revenue Services (SIRS).

The country's recessionary experience in 2015 occasioned by declining government revenue and debilitating fiscal fortunes heralded efforts to divert public revenue generation away from a predominant petrodollar source (Amaeshi, Adi & Ikiebey, 2019). Because of this, the country needs evidence-based assessment of FIs to provide policy direction to enhance tax policies and overall tax compliance. It is this stance that motivates this study. However, there are some contentions in the literature on the efficacy of FIs in enhancing the output and efficiency of the industrial sector. On one hand, the advocates contend that in some situations, FIs boosts investment, fosters employment and provide other socioeconomic gains (Bora, 2002). Contrarily, the opponents aver that the benefits of FIs are outweighed by the cost (Cleeve, 2008) since FIs could exacerbate issues such as governance and corruption. The remit of this research concurs with the proponents that FIs could adequately offset likely market failure challenges and can be applied seamlessly by governments to stimulate industrialization. Therefore, this paper delves into a previously understudied area of tax compliance research on MSMEs in Nigeria, and to identify both traditional and non-traditional factors that influence small business attitudes toward tax compliance in Nigeria. We pay particular attention to elements relating to the economic, institutional and socio-cultural environment. Survey responses from the three largest industrial clusters in Nigeria are utilised to answer two fundamental questions: (i) What factors significantly determine MSMEs tax compliance in Nigeria? (ii) What is the impact of tax compliance on a firm's performance?

A study on tax compliance in Nigeria and the various factors that influence firms' attitudes toward tax compliance is very relevant for various reasons. First, the Nigerian economy is currently undergoing structural transition ranging from institutional, economic and cultural changes (Azolibe, 2021; Fadiran, 2019; Nwokoye, Igbanugo & Dimnwobi, 2020). These reforms may impact tax compliance and the government's capacity to raise income for development programs. Second, while a few related studies exist for developing economies (Amponsah &

4

Adu, 2017; Inasius, 2018; Musimenta, Nkundabanyanga, Muhwezi, Akankunda & Nalukenge, 2017), their findings and policy implications cannot easily be applied in the Nigerian economy due to her peculiar economic, social, political and cultural circumstances. Moreover, these studies arrived at contradictory outcomes attributable to the omission of crucial variables that could have implications on tax compliance. Our study seeks to address the omitted variable issue by incorporating structured economic variables (tax audit, ownership structure of firm/business, firm size), fiscal incentives (tax credit, tax holidays, tax reduction, capital allowance, investment incentives), communication variables (simplifying communication, deterrent messages, tax morale messages), enforcement variables (collusive evasion, enforcement penalty, difficult to evade), perception variables (corruption perception, feeling of ethnic marginalization), governance variables (infrastructural deficiency, basic service from government), tax administration (ease of tax return filing, taxpayer segmentation) and political and social variables (political legitimacy, political affiliation, gender of firm owners). These variables will aid the investigation of the relationship between a variety of identified factors and tax compliance. It will also provide better insights on the predictors of tax compliance by firms in Nigeria. Hence, the crux of this study is to unearth practical solutions to tax non-compliance by firms in Nigeria for increased contribution to the bulk of tax revenue.

Third, as far as we know, this is the first study to investigate fiscal incentives and tax compliance behaviour in Nigerian industrial clusters, while international focus on this subject has not enjoyed considerable attention as well. This study will elicit information that will guide the development of industrial policy and fiscal legislation. This will deepen the synergy between FIs and Industrial Clusters in particular, and promote measures to better mainstream the cluster concept in the fiscal policy of the country. Fourth, unlike mainstream literature that has utilized innovation or profitability to capture a firm's performance, this study utilized firm output, profitability and survival in capturing a firm's performance. These metrics have been identified in the literature as a better proxy in capturing the performance of small businesses in developing economies (Ekesiobi & Dimnwobi, 2021).

The rest of the paper is structured thus: Section two focuses on the presentation of related literature. The third section explains the methodological approach and data while section four discusses the results. Section five provides implications for policy and concludes the study

2. Literature Review

Empirical studies on tax compliance have focused more on predictors of tax compliance, relative to studies bothering on fiscal incentives and tax compliance. Existing literature also indicates that the discernment of fairness of the tax system by the taxpayers infuses compliant behaviour. Following this line of thought, Benk, Budak and Cakmak (2012) assert that taxpayers evade tax if they consider the tax system unjust. For instance,in recent studies in Uganda, Indonesia and Bangladesh respectively, Musimenta, Nkundabanyanga, Muhwezi, Akankunda and Nalukenge (2017) and Inasius (2018) and Mannan, Farhana and Chowdhury (2020) reveal that tax fairness significantly influences tax compliance.Another important variable that determines tax compliance is trust in government (Guzel, Ozer & Ozcan, 2019). When the government is perceived as trustworthy, tax-related decisions will be supported and vice versa (Ibrahim, Musah& Abdul-Hanan, 2015). Another vital predictor of tax compliance is the tax rate. Mas'ud, Aliyu and Gambo (2014) and Rabiu and Mustafa (2020) found that a high tax rate encourages tax non-compliance. Contrarily, some studies found either no or an insignificant link between the two variables. For instance, Modugu, Eragbhe and Izedonmi (2012) conclude that the tax rate does not have a negative or positive impact on tax compliance. In a cross country study, Richardson (2006) reported an insignificant association between tax noncompliance and tax rate.

Additionally, there is evidence in the literature that socioeconomic and demographic characteristics also affect tax compliance. For instance, educational exposure is reported to influence tax compliance behaviour since an educated taxpayer is expected to be aware of existing tax laws and incentives, including the benefits of tax-related revenues to the state (Amponsah & Adu, 2017). Furthermore, educated taxpayers could earn more income in legal or formal activities (Nwokoye, Oyim, Dimnwobi & Ekesiobi, 2019) and are therefore less likely to be tax non-compliant (Frey, 2009). Empirical evidence does not establish a specific connection between educational level and tax compliance (Amponsah & Adu, 2017). For instance, Yalama and Gumus (2013) conclude that less-educated individuals are likely to evade taxes more often than individuals with higher educational attainments. This finding was corroborated by Amponsah and Adu (2017) using data from 783 micro-taxpayers in Ghana. A study by Armah-Attoh and Awal (2013) however established that primary level of education reduces tax evasion tendency even more than tertiary education attainment.

Concerning gender, females display less tax evasion behaviour than their male counterparts (Hofmann, Voracek, Bock & Kirchler, 2017). There could be two reasons for this. First, unlike men, women are perceived to be more conservative, role-conformant and morally principled. Second, women react faster to normative appeals and are more risk-averse (Asante & Baba, 2011). The empirical evidence of gender and tax compliance is however unclear. Some studies establish that women are more tax complaint and more ethical than men (Aladejebi, 2018; Amponsah & Adu, 2017), other studies contend that males are more tax complaint (McGee &Tusan, 2008; McGee & Benk, 2011) while studies such as McGee and An (2006) and McGee and Rossi (2006) shows no correlation between the two variables.

Shifting our focus to the literature on government incentives and tax compliance behaviour, it is evident that research on this strand of literature is somewhat limited. Huong and Cuong (2018) applied estimations of the fixed-effect instrumental variable to investigate the impact of government assistance on Vietnam's small and medium enterprises tax payments. They found that government financial support positively affects tax compliance as well as the firm's innovative activities and profitability. Ling, Osman, Muhammad, Yeng and Jin (2016) estimate the effect of government subsidies on goods and services tax compliance in Malaysia and conclude that they significantly stimulate tax compliance among Malaysian consumers. Rashid et al (2018) reported a positive link between government support programs (on goods and services) and tax compliance by Malaysian Batik manufacturers.

3. Methodology

3.1 Study Area and Data Collection Procedure

Data for the study is obtained by utilising a structured questionnaire developed from a systematic review of related studies. The respondents are drawn from industrial clusters in South-Eastern Nigeria namely; the Nnewi Automotive cluster and Onitsha plastic cluster in Anambra state and the Aba garment cluster in Abia state. The justifications for this choice are as follows: First, among the five notable industrial clusters in the country, three are situated in South-East Nigeria - a region with a rich history of commerce, trade and manufacturing (Ekesiobi et al 2018; Ekesiobi & Dimnwobi, 2021). Second, among the clusters in the country, the industrial clusters in the region have been flourishing in the face of infrastructure deficit and deindustrialization in

Nigeria (Ekesiobi et al., 2018). Third, the products (plastic-related, automotive, shoe and garment) from these clusters are generally common in Nigeria. Fourth, the region's densely populated nature and the location of the largest market (Onitsha main market) in West Africa conveniently connects the product of the clusters to the market (Ekesiobi & Dimnwobi, 2021).

To guarantee a proper questionnaire design, pilot questionnaires were carefully evaluated by the members of the Nigerian Tax Research Network (NTRN) and associates with the Federal Inland Revenue Service (FIRS); and subsequently administered through a pilot survey to selected cluster representatives. The derived insights aided the development of the final questionnaire utilized in the study. In the selection of the respondents, a two-step procedure was employed. First, participating firms were randomly selected in each of the clusters. Secondly, the owner or manager of selected firms was purposively selected for participation. Guided procedures (translation and interpretation) for illiterate and semi-literate respondents were also employed to minimize errors. A total of 275 questionnaires, considered large enough since data on the number of firms in the clusters were unavailable, were assigned in each cluster and consent was sought from each respondent before the exercise proper. Out of a total of 825 questionnaires distributed, 800 questionnaires were returned and made available for the study. This indicates a response rate of 97%. The detail of questionnaire returned is as follows:

Table 1. Response Rate and Distribution of Returned Questionnaire

Cluster	Micro Businesses	Small Scale Businesses	Medium Scale Businesses	Total
Nnewi Automotive cluster	89	120	59	268
Onitsha plastic cluster	103	117	45	265
Aba garment cluster	122	104	41	267
Total				800
Response Rate				97%

Source: Field Survey (2019)

3.2 Estimation Technique

Model 1: Determinants of Tax Compliance

Allinghan-Sandmo's (AS) tax compliance theory predicts that tax compliance is determined by the perceived probability of detection, the tax rate and sanction for tax evasion (Allingham & Sandmo, 1972). The AS model assumes that the tax-paying firm is a rational agent with a well-behaved utility function. The model is predicated on the uncertainty of tax outcome or the action of the tax authorities. The probability of detection depends on whether or not there will be a tax audit. The tax-paying firm is not certain of whether there will be a tax audit or not. But as a rational agent, it knows the implication of non-compliance based on audit discoveries. Suppose taxable gross income is Y_x, the tax payable is tY_x where t is the tax rate. Suppose the firm reports gross income Y_u such that $Y_u < Y_x$, then $tY_u < tY_x$. If the possibility of detection is 0 or near 0, the firm will more likely report Y_u than Y_x. Again, suppose there is a likelihood of detection but the sanction, s, for non-compliance is less than $tY_x - tY_u$, the firm may have a higher incentive to default in tax compliance. The AS model, therefore, holds that the higher the likelihood of detection, and the higher the penalty or sanction for non-compliance, the greater the likelihood that the firm will comply with tax requirements. In other words,

$$C = f(\underset{+}{A}, \underset{-}{R}, \underset{+}{S}) \qquad (1)$$

The tax compliance model defined by Equation (1) has been criticized for being narrow. Gahramanov (2009) and Farrar and Hausserman (2016) argue that there is a wide range of other variables that determine tax compliance behaviour which the AS model failed to capture. This is to say that in addition to economic factors as identified by the AS model, other non-economic factors could influence tax compliance. For example, Andreoni, Erard and Feinstein (1998) argues that many people pay the tax due to several institutional, behavioural, political, social and cultural factors. Wenzel (2004) obtained evidence that contrary to AS prediction, there are people who never evade taxes even when $s < (tY_x - tY_u)$. Incorporating other determinants of tax compliance, Equation (1) would be rewritten as:

$$C = f(Ec, Fi, Co, En, Pe, Go, Po) \qquad (2)$$

Where Ec = economic factors, Fi = fiscal incentives, Co = communication variables, En = enforcement, Pe = perception, Go = governance factors, Po = political and social factors. X refers to all factors that influence tax compliance such that $Ec, Fi, Co, En, Pe, Go, Po \in X$

To estimate Equation (2), we utilized the logistic regression procedure. The logistic regression model as utilized in Mekonnen and Mekonnen (2002) estimates the likelihood of a binary response premised on one or more predictors. To describe the logit regression model, let C represent a random variable bearing the values {0 and 1} and let $\boldsymbol{x}$ signify a group of conditioning variables. C takes on one (1) if firms comply with tax requirements or zero (0) if firms do not comply. In other words, y is a binary option (and this makes logit regression apt for such estimation). However, the coding of the two numerical values of y is not critical (the binary choice coded as '1' may not be greater than the response coded '0') since every individual binary response only characterizes an event. However, it is required that you code y as a zero-one variable where one (1) represents success (that is, firm comply with tax requirement) and zero (0) represents failure (that is, firm do not comply with tax requirement). This restriction ensures that the obtained probabilities range between 1 and 0. Thus, coding the variable in this manner means that the likely value of y is simply the possibility that y = 1:

$$E(c_i / x_i, \beta) = 1.\Pr(c_i = 1/x_i, \beta) + 0.\Pr(c_i = 0/x_i, \beta)$$

$$= \Pr(c_i = 1/x_i, \beta) \tag{3}$$

Where β is a vector of parameter estimates and x_i is a vector of explanatory variables.

Logistic or logit regression estimates the log odds of the event occurring. From the log-odds obtained, one can proceed to obtain the odds ratios (which are continuous but cannot be negative) to create a continuous criterion as a transformed version of the dependent variable such that

$$y = \begin{cases} 1 \; if & c_i^* > 0 \\ 0 \; if & c_i^* \leq 0 \end{cases} \; \text{Where } c_i^* \text{ is the predicted y} \tag{4}$$

In practice, the logistic regression rather estimates the odd-ratio specified as:

$$L *= ln(\frac{P_i}{1-P_i}) = \alpha_0 + \sum_{j=1}^{J} \beta_j \, x_j + \varepsilon \tag{5}$$

Although the logit model is estimated using the maximum likelihood procedure, the density function is described as the logit cumulative distribution function. The logit cumulative distribution function of an event occurring is stated as;

$$F(x) = Pr(C = 1 \,/\, X_1 = x_1, \ldots, X_i = x_i) = \frac{e^{(\beta_0 + \beta_1 x_1 + \ldots + \beta_i x_i)}}{1 + e^{(\beta_0 + \beta_1 x_1 + \ldots + \beta_i x_i)}} \tag{6}$$

While the probability of the non-occurrence of an event is;

$$1 - F(x) = Pr(C = 0 \,/\, X_1 = x_1, \ldots, X_i = x_i) = \frac{1}{1 + e^{(\beta_0 + \beta_1 x_1 + \ldots + \beta_i x_i)}} \tag{7}$$

The odds ratio becomes;

$$\frac{F(x)}{1 - F(x)} = e^{(\beta_0 + \beta_1 x_1 + \ldots + \beta_i x_i)} \tag{8}$$

Taking the log of both sides in equation (8) gives;

$$Log\left[\frac{F(x)}{1 - F(x)}\right] = \beta_0 + \beta_1 x_1 + \ldots, + \beta_i x_i \tag{9}$$

Where

$Log \, \frac{F(x)}{1 - F(x)}$ is the log-odd ratio which is a linear function of the explanatory variables.

The log-odds ratio shows the likelihood that a firm within the clusters will comply with tax requirements. The range of values for the log-odd ratio lies in between -∞ and +∞ while the range of the probability that a firm complies is [F(x)] is between 0 and 1.

Also, μ is assumed to be random and normally distributed such that the observed and latent variable is given as:

$$Pr(Compliance_i = \frac{1}{V_i}) = \omega(\varepsilon_1 - V_i \tau) \tag{10}$$

$$Pr\left(Compliance_i = \frac{2}{V_i}\right) = \omega(\varepsilon_2 - V_i \tau) - \omega(\varepsilon_1 - V_i \tau) \tag{11}$$

$$\Pr\left(Compliance_i = \frac{3}{V_i}\right) = 1 - \omega(\varepsilon_2 - V_i\tau) \tag{12}$$

Where $\tau = [\beta_1, \ \beta_2, \beta_3]$ are the parameter estimates of the explanatory variables, ω is a cumulative normal distribution function of μ and ε_1 and ε_2 are unknown threshold coefficients that differentiate categories.

Model 2: Impact of Fiscal Incentive on Firm Performance

Suppose we capture firms' performance using the production function which defines the technical relationship between the firms' input and the corresponding output. Shah (1995) argued that the behaviour of tax incentives could be approximated to that of the key elements of neoclassical production, including labour and capital. In other words, the relationship between fiscal incentive and firm performance could be captured using a production function. One of the implicit assumptions of the production function is that the production process in all the firms is efficient such that the representative firm which defines the frontier is equally efficient. This implies that the benefits of fiscal incentives will materialize into the expected output level. In other to account for inefficiencies, we adopt the stochastic frontier production function pioneered by Aigner, Lovell and Schmidt (1977) and Meeusen and Van den Broeck (1977). As observed by Battese and Coelli (1993), the stochastic frontier production function is commonly favoured by the traditional neoclassical production function because it shows the technical efficiency part of the neoclassical production function. Also, it supports random variation. Suppose we state the neoclassical production function as follows:

$$y_i = A_i \cdot f(x_i, \Psi) \tag{13}$$

Where y_i is the vector of firm performance indicated by firm output, firm profit and firm survival rate of firm $i = 1,...I$; x_i is a vector of K covariates, $f(x_i, \Psi)$ is the production frontier and Ψ is a vector of technology parameters to be estimated. A_i represents technical efficiency defined as the ratio of observed input to maximum feasible output. Let us assume that Ai is a stochastic variable with a normal distribution function that is usual to all firms. Then, we can write $A_i = \exp\{-u_i\}$ where $u_i \geq 0$. Suppose we add a stochastic component, $\exp\{v_i\}$ that denotes random shocks

affecting a firm's activities such that each firm faces different shocks. However, the shocks are random. From the foregoing, the production function becomes:

$$y_i = f(x_i, \Psi).\exp\{-u_i\}.\exp\{v_i\}$$
(14)

Now if we presume a log-linear Cobb-Douglas production, then (14) would become a translog stochastic production frontier of the firm:

$$\ln y_i = \Psi_0 + \sum_k \Psi_k \ln x_{ki} + v_i - u_i$$
(15)

Where $= \Psi_k$ *is 1* x *k vector of an unknown parameter to be estimated*

The systematic error component, v_i, is presumed to be identically and independently distributed *(i.i.d)* random error having a normal distribution with mean zero and variance δ_v^2, that is, $v_i \sim N(0, \sigma_v^2)$. u_i are non-negative random variables linked with the technical inefficiency of firm performances and can be denoted as:

$$u_i = \{\exp[-\eta(t-T)]\}\sum \alpha_n Z_i$$
(16)

Where Z_i is a *1* x *n* vector of non-deterministic efficiency variables such that $Z_i =$ fiscal incentive and non-fiscal incentive variables. η is an unidentified scalar parameter to be evaluated, which establishes whether inefficiencies are time-invariant or time-variant, and u_i is assumed to be *i.i.d.* and truncated at zero of the N (μ, σ_u^2) distribution. Suppose η is positive, then $-\eta(t-T) = \eta(T-t)$ is positive for $t<T$ and so, $\exp[-\eta(t-T] > 1$, which means that firms technical inefficiencies reduce over time. If η is zero, firms' technical inefficiencies stay constant; if it is negative, the firm's technical inefficiencies rise over time. Observe that in equation 3.16, v_i-UI is the composed error term. Hence, utilizing the composed error term, the total variation in firm performance from the frontier level, attributed to technical efficiency, is described by $\gamma = \dfrac{\sigma_u^2}{\alpha_v^2 + \sigma_u^v}$ such that $0<\gamma<1$

Measurement of data

As stated earlier, data used for this analysis was obtained using a survey design. In other words, the data is cross-sectional. Table 2 summarizes the data measurement. edu_level data capture the educational level of the respondents indicating the highest educational qualification obtained by the respondent. Another variable is gender. This captures the gender of the firm owner or firm manager where the firm is a duly registered liability company. compl_beha captures the compliance behaviour of the firms. A firm is said to be compliant if it has filed for tax returns in the past two years proceeding with the firm's current fiscal year at the time of the survey. tax_audit measures the event of carrying out tax audits by the tax agencies in the past 12 months preceding the firm's fiscal year at the time of the survey. firm_ownership measures the ownership structure of the firm. All the firms surveyed are either sole proprietorship/partnership or limited liability companies. Only firms that are duly registered as limited liability companies are captured. There are no public limited liability companies that are captured. The perceptions variables are measured in the 5-Likert scale indicating strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1) (see Table 1 for detail). In the same vein, for firm's output and profitability, firms that recorded an increase in output in the past 12 months preceding the survey are assigned 1 (otherwise zero) while firms that recorded positive profit in the past 12 months preceding the survey are coded 1 (otherwise 0). We measured firm survival in terms of corporate governance and innovation. Firms that have established corporate governance structures, including codified company policy are assigned 1. Also, firms that have recorded innovations in product, process or corporate governance are coded 1 (otherwise 0). Other variables are explained in Table 2.

Table 2. Summary of Descriptive Statistics

Variables	Code Symbol	Measurement of Variable and coding	Mean	Standard deviation	min	Max
educational level of firm owners	Edu_level	Secondary school and above = 1.Primary school and no formal education = 0.	0.342	0.120	0.00	1.00
gender of firm owners	Gender	Firm owners: Male = 1 female = 0	0.815	0.203	0.00	1.00
Compliance behaviour	Compl_beha	Firms that regularly comply with tax requirement = 1 and 0 if otherwise	0.351	0.103	0.00	1.00
tax audit	Tax_audit	Firms that had tax audits in the last 12 months = 1 and 0 if otherwise	0.282	0.089	0.00	1.00
political legitimacy	Pol_leg	This captures the view of the firm if the government of the day was brought on board through legitimate means. Responses indicating legitimacy = 1and 0 if otherwise	0.561	0.087	0.00	1.00
the ownership structure of firm/business	Firm_ownership	Sole proprietorships and partnerships = 0 while companies = 1	0.468	0.0118	0.00	1.00
Simplifying communication	Sim_com	A rank variable with options on a 5-Likert scale ranging from strongly disagree (1) to strongly agree (5)	3.891	0.108	1	5
deterrent messages	Det_mes	A rank variable with options on a 5-Likert scale	3.604	0.039	1	5
social norms	Soc_norm	A rank variable with options on a 5-Likert scale	2.042	0.003	1	5
tax morale messages	Tax_morale	A rank variable with options on a 5-Likert scale	1.993	0.113	1	5
firm size	Firm_size	Captures the number of employees engaged by the firm.	8.00	0.023	0	1
political affiliation	Pol_affil	Responses that indicate political affiliation with the government of the day was assigned 1, otherwise, zero was assigned.	0.330	0.099	0	1
tax rate	Tax_rate	A rank variable with options on a 5-Likert scale	4.002	1.203	1	5
collusive evasion	Collusive_eva	A rank variable with options on a 5-Likert scale	3.451	0.769	1	5
enforcement	enforcement	A rank variable with options	3.551	0.229	1	5

Variables	Code Symbol	Measurement of Variable and coding	Mean	Standard deviation	min	Max
penalty		on a 5-Likert scale				
Tax holidays	Tax_holid	Firms that benefited from tax holidays were = 1 and 0 if otherwise	0.698	0.304	0	1
SMECGS	SMECGS	Firms that benefited from SMECGS = 1and 0 if otherwise	0.107	0.478	0	1
Capital allowance	Cap_allow	Firms that benefited from Capital allowance = 1and 0 if otherwise	0.593	0.088	0	1
difficult to evade	Difficult_evade	A rank variable with options on a 5-Likert scale	2.997	0.081	1	5
NEDEP	NEDEP	Firms that benefited from NEDEP = 1and 0 if otherwise	0.107	0.009	0	1
Tax reduction	Tax_reduction	Firms that benefited from tax reduction = 1and 0 if otherwise	0.339	0.028	0	1
corruption Perception	Corrupt_perception	A rank variable with options on a 5-Likert scale	0.448	0.028	1	5
Investment incentives	Invst_incent	Firms that benefited from investment incentives = 1and 0 if otherwise	0.205	0.002	0	1
the feeling of ethnic marginalization	Ethnic_marg	A rank variable with options on a 5-Likert scale	4.228	0.395	1	5
Incidence of multiple taxes	Multiple_tax	A rank variable with options on a 5-Likert scale	4.512	0.085	1	5
infrastructural deficiency	Infras_def	A rank variable with options on a 5-Likert scale	3.897	0.882	1	5
taxpayer segmentation	Taxpayer_segment	A rank variable with options on a 5-Likert scale	2.102	0.219	1	5
Ease of access to bank loan	Access_to_loan	A rank variable with options on a 5-Likert scale	3.891	0.003	1	5
basic service from the government	Service_govt	A rank variable with options on a 5-Likert scale	4.003	0.909	1	5
Firm's output	Firm_output	Firm-output = 1 if the firm's output increased in the past 12 months preceding the survey, otherwise, it is assigned 0	6.046	0.003	1	0
Firm's profitability	Firm_profitability	Firm output = 1 if the firm's profit increased in the past 12 months preceding the survey, otherwise, it is assigned 0	5.893	0.032	1	0
Firm's survival	Firm_survival	This variable is captured using corporate governance and	5.304	0.022	1	0

Variables	Code Symbol	Measurement of Variable and coding	Mean	Standard deviation	min	Max
		innovation. If a firm has clearly defined corporate government structure or well-codified company policies, or if a firm has experienced any innovation in product, process, or government, it is assigned 1, otherwise 0				

Source: Authors computation

4. Results

The tax compliance model was estimated using the maximum likelihood technique based on the logit procedure. All estimations are obtained using Stata 16.0. The result obtained shows that (see Table 3) that economic factors, communication protocols, enforcement pattern and intensity, firm's perceptions, governance performance of the government, tax administration as well as political cum social factors could be critical in forming compliance behaviour. Specifically, the coefficient for tax audit (see column 2) is 0.282 with an odds ratio (see column 3) of 1.326 and a marginal effect of 0.069 (see column 4). This suggests that regular tax audit could increase compliance. Interpreting in terms of odd-ratio, one could say that tax audit has 32.6 more likelihood of increasing tax compliance. Put differently, the marginal effect of an additional tax audit is a 6.9% increase in tax compliance. Also, the coefficient for firm's ownership structure is 0.5 (see column 2) with an odd-ratio of 1.649 (see column 3) and a marginal effect of 0.118(see column 4). This suggests that firms registered and operated as limited liability companies have 64.9% more likelihood of exhibiting compliance behaviour. In terms of marginal effects, it shows that formalizing firms in the informal sectors may raise tax compliance by 11.8%. Contrary to expectations, the results also show that bigger firms are less likely to comply with the tax return and filing obligation. Although this finding does not corroborate Huong and Cuong (2018), it confirms the claim of tax analysts and some civil societies networks in Nigeria (BudgIT, 2017; Oxfam, 2017). Given that there is a high level of collusion between tax officials and businesses, the tendency for big firms to evade tax is higher than that of small firms. This is because the big firms can easily afford to bribe tax officials. Also, given that the tax obligation of big firms is high, the cost of evasion through collusion is usually lower than the actual tax liability. However, raising the tax rate could reduce the likelihood of tax compliance by about

15.4%. This result is in line with Mas'ud et al (2014). The findings also indicate that the communication protocols of the tax agency could be a major determinant of tax compliance behaviour. Simplifying the communication on tax requirements as well as communicating deterrent messages (messages that states the consequences of non-compliance behaviour) could raise the likelihood of tax compliance by 121% and 113% respectively.

Table 3. Determinants of Tax Compliance Behaviour

Variables (1)	Coefficient (2)	Odd-Ratio (3)	Marginal Effects (4)
Economic factors			
Tax audit	0.282***	1.326	0.069***
	(0.087)		(0.021)
Tax rate	-0.167**	0.846	-0.041**
	(0.075)		(0.019)
Ownership structure of firm/business	0.5***	1.649	0.118***
	(0.195)		(0.046)
Firm size	-0.528**	0.590	-0.123**
	(0.226)		(0.053)
Fiscal incentives			
Tax credit	0.334	1.396	0.081
	(0.266)		(0.065)
Tax holidays	-0.079***	0.924	-0.020**
	(0.020)		(0.005)
Tax reduction	0.492***	1.636	0.116***
	(0.090)		(0.021)
Capital allowance	0.020***	1.020	0.005***
	(0.001)		(0.000)
Investment incentives	0.026	1.026	0.006
	(0.020)		(0.005)
Communication			
Simplifying communication	0.793***	2.210	0.170***
	(0.178)		(0.038)
Deterrent messages	0.754***	2.125	0.164***
	(0.136)		(0.030)
Tax morale messages	0.068***	1.071	0.017***
	(0.020)		(0.005)
Enforcement			
Collusive evasion	-0.181**	0.835	-0.045**
	(0.076)		(0.019)
Enforcement penalty	0.587***	1.798	0.135***
	(0.059)		(0.013)
Difficult to evade	0.579***	1.785	0.133***
	(0.086)		(0.020)
Perception			

Variables (1)	Coefficient (2)	Odd-Ratio (3)	Marginal Effects (4)
Corruption perception	-0.343*** (0.051)	0.709	-0.083*** (0.012)
Feeling of ethnic marginalization	-0.613*** (0.14)	0.542	-0.140*** (0.032)
Governance			
Infrastructural deficiency	-0.146*** (0.023)	0.864	-0.036*** (0.006)
Basic service from government	0.646*** (0.162)	1.908	0.146*** (0.036)
Tax administration			
Ease of tax return filing	0.646*** (0.129)	1.908	0.146*** (0.029)
Tax payer segmentation	0.163 (0.165)	1.177	0.041 (0.041)
Political and social factors			
Political legitimacy	0.016*** (0.006)	1.016	0.004*** (0.001)
Social norms	-1.790 (-1.247)	0.167	-0.219 (-0.153)
Political affiliation	0.276 (0.276)	1.318	0.068 (0.068)
Educational level of firm owners	0.125*** (0.023)	1.134	0.031*** (0.006)
Gender of firm owners	0.016 (0.013)	1.016	0.004 (0.003)
Pseudo R	0.32		0.28
Observation	800		800

Source: Authors Computation

Note: *,** and *** implies statistically significant at 10%, 5% and 1% respectively. Standard errors are shown in the bracket underneath the coefficients

However, invoking tax morale appears not to exercise a meaningful effect on tax compliance. While consistent enforcement of penalties to defaulters or non-compliant firms could increase compliance, collusive behaviours of tax administrators could reduce the likelihood of tax compliance by as much as 16.5%. In the case of collusive evasion, the tax agents collude with firms to evade tax while collecting a kickback for protecting the defaulting firms.

The results obtained also show that fiscal incentives could have nontrivial implications for tax compliance behaviour. The coefficients for tax credit, tax reduction and capital allowance are 0.334, 0.492 and 0.020 respectively with an odd-ratio of 1.396, 1.636 and 1.020 and marginal

effects of 0.081, 0.006 and 0.005 respectively. All indicators of tax incentives exert a positive impact on compliance behaviour except tax holidays. The negative sign of tax holidays may reflect the fact that those that enjoy tax holiday might not have paid tax in the past twelve months. One unit increase in the amount of tax reduction enjoyed by firms leads to approximately an 11.6% improvement in compliance behaviour.

Another critical factor that drives compliance includes the perception of the firm on corruption and ethnic inclusiveness or cohesion. If corruption perception and feeling of ethnic marginalization increase by one unit, tax compliance behaviour reduces by 8.3% and 14% respectively. Our study agrees with Jahnke and Weisser (2018) who found that corruption strongly hampers tax morale in some selected Sub-Saharan economies. Other factors that could undermine tax compliance behaviour are infrastructural deficiency. In this case, firms feel that there is no justification for paying tax. In the same vein, the odd in favour of tax compliance increases by about 90.8% if the government is committed to providing basic essential services. Our result conforms to those of Cumming et al. (2009) – if the government is effectively committed to providing essential services, taxpayers would more likely assent their tax responsibilities. While educational attainment of the firm owner and political legitimacy of the current government could significantly increase the firm compliance behaviour, gender, political affiliation and social norms were not found to exert significant influence on tax compliance behaviour. Our finding that educational exposure is directly linked with tax compliance agrees with Yalama and Gumus (2013) and Amponsah and Adu (2017) while contrasting Armah-Attoh and Awal (2013). Educated taxpayers display less tax non-compliance behaviour because they have possessed more insights, familiarity with tax laws as well as being aware of the various services and benefits provided by the government through tax revenues

Table 4 is the summary of estimates of the impact of fiscal incentives on firm performance. In this study, firm performance was measured using firms' output, profitability and survival. Hausman's test for endogeneity (result not presented here) was carried out to ascertain whether the models of firms' output, profitability and survival suffer from endogeneity problems. The results obtained show that although the null hypothesis of no endogeneity could not be rejected for models of firms' output and firm's profitability (at 5%), the same conclusion could not be reached for the model of firm's survival. The null hypothesis can only be accepted for the model

of firm's survival at a 10% significance level. Thus, in addition to our baseline model, an IV-probit estimation was provided for the firm's survival model. Although estimates from both equations appear to be similar, the IV-probit appear to outperform the baseline regression for the firm's survival. The result obtained show that the coefficients of tax holidays are 0.109, 0.006 and 0.170 for firm output, profitability and survival respectively. Similarly, tax reduction, capital allowance and tax credit exert a positive effect on firms' output, profitability and survival. This finding partly concurs with Hansen, Rand and Tarp (2009) and Huong and Cuong (2018). They obtained evidence that government incentives are essential in assisting firms to attain higher profitability. The result also shows that SMECGS (Small and Medium Enterprises Credit Guarantee Scheme) and NEDEP (National Enterprise Development Programme) might not have exerted significant influence on firms' performance. This may reflect the scanty number of beneficiaries from the scheme. Notice that the incidence of multiple taxations is a disincentive to firm performance as it entered the model with coefficients of -0.312, -0.304 and -0.006 respectively. In addition, the coefficients of firm size are 0.069, 0.382 and 0.018 respectively for firm's output, firm's profitability and firm's survival equations. Similarly, the estimates obtained for ease of access to bank loans are 0.092, 0.211 and 0.007 for firm's output, firm's profitability and firm's survival equations respectively. This shows that as firm size increases, the performance and resilience of the firms. Similarly, ease of access to finance is critical to firms' performance.

Table 4. Impact of fiscal incentives on firm performance

Covariates	Firms output	Firms profitability	Firm's survival	
			Baseline regression	Iv-probit[++]
Tax incentives				
Tax holidays	0.109*	0.006*	0.184***	0.170**
	(0.062)	(0.004)	(0.061)	(0.081)
Tax reduction	0.009**	0.082**	0.138***	0.134**
	(0.004)	(0.028)	(0.028)	(0.062)
Capital allowance	0.138***	0.134***	0.123***	0.127***
	(0.043)	(0.027)	(0.043)	(0.045)
Tax credit	0.041**	0.026*	0.035***	0.029**
	(0.017)	(0.014)	(0.010)	(0.012)
Nontax incentives				
SMECGS	-0.026	-0.016	-0.014	-0.016
	(0.023)	(0.12)	(0.015)	(0.033)
NEDEP	0.042	0.170*	0.048	0.039
	(0.031)	(0.096)	(0.036)	(0.039)
Investment incentives	0.076	0.561	1.894***	1.703***
	(0.050)	(0.560)	(0.378)	(0.300)
Other covariates				
Incidence of multiple tax	-0.312***	-0.304***	-0.008*	-0.006**
	(0.091)	(0.050)	(0.004)	(0.002)
Ownership structure	0.222	0.481**	0.073	0.069
	(0.250)	(0.207)	(0.332)	(0.047)
Firm size	0.059**	0.382***	0.012*	0.018**
	(0.029)	(0.078)	(0.007)	(0.008)
Ease of access to bank loan	0.092**	0.211***	0.010***	0.007**
	(0.044)	(0.053)	(0.004)	(0.003)
Business management training	0.123	0.034***	0.522***	0.505***
	(0.086)	(0.007)	(0.186)	(0.131)
Pseudo R	0.18	0.16	0.19	0.28
Observation	800	800	800	800

Source: Authors Computation

*,** and *** implies statistically significant at 10%, 5% and 1% respectively. Standard errors are shown in the bracket underneath the log odd*
++ Selecting the instrument for the IV-probit requires that one selects a variable that correlates with the troublesome regressor but does not correlate with the outcome variable (Angrist, Imbens & Rubin, 1996; Stefanski & Buzas, 1995).One of such variables that meet that requirement is the date of the tax incentive (whether tax holiday, tax reduction or capital allowance)

5. Conclusion and Policy Implications

Based on the study findings, we conclude that regular tax audit, increasing formalization of the informal sector, simplifying the communication on tax requirement, communicating deterrent messages, educational attainment of the firm owner and political legitimacy of the current government as well as fiscal incentives could significantly increase the tax compliance behaviour

of firms in Nigerian industrial clusters. In the same vein, we found that while the feeling of ethnic marginalisation and corruption worsens tax compliances, social norms, gender and political affiliations do not drive tax compliance behaviour in Nigeria. Also, we found that fiscal incentives significantly enhance firm performance in the clusters.

Consequently, the findings of this study possess pertinent policy implications. First, the findings show that citizen's perception of high corruption undermines citizens' readiness to comply with tax returns obligations. This has serious implications for tax policy. Thus, tax management policies should focus on the transparent and efficient use of tax revenue. The persistence of high corruption perception would dampen the morale of taxpayers irrespective of the efforts of tax authorities to coax taxpayers. To achieve increased tax compliance, users of tax revenue (government at all levels) must be accountable to the citizens and regularly make tax revenue and expenditure data public. Government must also demonstrate commitment to tackle corruption in the use of public funds by demonstrating the will to prosecute corrupt public officeholders. Second, the perception of governance failure, especially in the provision of social infrastructure and other basic amenities dampens the efforts to achieve increased tax compliance. To achieve increased tax compliance, the government must, therefore, ensure that it adheres to its social contract with the taxpayers by investing in infrastructure that promotes business growth. Third, there is an overwhelming feeling of disenchantment in all the clusters studied due to perceived ethnic marginalisation. Government must therefore raise the morale of taxpayers by ensuring that concerns of ethnic marginalization are addressed. Government policies and actions must deliberately reinforce ethnic cohesion and allay the fear of marginalisation. If this feeling of ethnic injustice persists, tax compliance is bound to worsen no matter government efforts. It may even lead to other social crises that may further complicate the social and economic milieu of tax management. Fourth, tax evasion has continued to thrive in the country owing to weak institutions which reinforce collusion and poor tax audit. To mitigate this and ensure that the country does not spend its resources in prosecuting tax evaders, there is a need to further strengthen the tax administration system in a way that makes it difficult to evade tax, including colluding with tax administrators. There is a need to build a double-layered monitoring and evaluation system that supervises the operation of tax field officers to ensure that collusive tendencies are choked out. As tax and other fiscal incentives are given to induce firm compliance, there must be mechanisms that ensure that as firms grow, they do not evade tax.

Complete e-monitoring of company taxes should be entrenched to reduce incense of tax evasion and avoidance, especially, by big firms. Fifth, the findings indicate that increasing the tax rate would hamper tax compliance. This suggests that government should focus on increasing the tax net and the tax base rather than the tax rate.

Ultimately, given that fiscal incentives are critical drivers of firm performance in Nigeria, policymakers in the country must continue to roll out fiscal incentives to potentially improve firms' performance on one hand and tax compliance on the other hand. The findings which show that SMECGS (Small and Medium Enterprises Credit Guarantee Scheme) and NEDEP (National Enterprise Development Programme intervention and support programmes) have not significantly impacted on firm performance suggest that government support programmes should not end at budgetary releases but eventual implementation and judicial utilization of funds. The MSME support programmes should be appropriately monitored to ensure that the intended objectives are realized. Again, the government should focus on supporting the firms to grow. Tax non-compliance is usually higher in the informal sector. Thus, policies aimed at formalizing the informal sector is expected to engender positive outcomes on tax compliance. Lastly, although the investigated clusters belong to the most notable and biggest industrial clusters in Nigeria, our findings may not be completely applicable to all clusters in the country. Hence, future studies are encouraged to extend this research to the remaining clusters in the country and similar clusters in Africa not covered by this study for comparative purposes.

References

Adeniran, A., Ekeruche, M.A., &Onywkwena, C. (2021). The role of social influence in enforcing tax compliance: Experimental evidence from Nigeria (Working Paper 122, ICTD)

Agyei, S. K., Marfo-Yiadom, E., Ansong, A., &Idun, A.A. A. (2019). Corporate tax avoidance incentives of banks in Ghana. *Journal of African Business*, 21(4), 1-16.

Aigner, D., Lovell, C.A.K., & Schmidt, P. (1977). Formulation and estimation of stochastic frontier production function models. *Journal of Econometrics*, 6, 21-37.

Akitoby, B. (2018). Raising revenue: Five country cases illustrate how best of improve tax collection. Retrieved from https://www.imf.org/external/pubs/ft/fandd/2018/03/pdf/akitoby.pdf

Aladejebi, O. (2018). Measuring tax compliance among small and medium enterprises in Nigeria. *International Journal of Accounting and Taxation*, 6(2), 29-40

Allingham, M.G., &Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, 1, 323-338

Amaeshi, K., Adi, B., &Ikiebey, G. (2019). Small business owners and corporate tax responsibility in Nigeria: An exploratory study (African Tax Administration Paper 15, ICTD)

Amponsah, S., &Adu, K.O. (2017). Socio-demographics of tax stamp compliance in upper Denkyira East municipal and upper Denkyira West district in Ghana. *International Journal of Law and Management,* 59(6), 1315-1330.

Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature*, 36(2), 818-860

Angrist, J.D., Imbens, G. W., & Rubin, D.B. (1996). Identification of causal effects using instrumental variables. *Journal of the American Statistical Association*, 91(434), 444-455

Armah-Attoh, D., &Awal, M. (2013). Tax administration in Ghana: The perceived institutional challenges (Afrobarometer Briefing Paper No. 124)

Asante, S., & Baba, S.A. (2011). Tax compliance among self-employed in Ghana: Do demographic characteristics matter? *International Business and Management*, 3(1), 86-91.

Asongu, S.A., &Odhiambo, N.M. (2019). Challenges of doing business in Africa: A systematic review. *Journal of African Business*, 20(2), 259-268

Azolibe, C.B. (2021). Banking sector intermediation development and economic growth: Evidence from Nigeria. *Journal of African Business*. Retrieved from 10.1080/15228916.2021.19 26857

Battese, G.E., &Coelli, T.J (1993). A stochastic frontier production function incorporating a model for technical inefficiency effects (Working Papers No. 69 in Econometrics and Applied Statistics No. 69, Department of Econometrics, University of New England, Armidale)

Benk, S., Budak, T., &Cakmak, A.F. (2012). Tax professionals' perceptions of tax fairness: survey evidence in Turkey. *International Journal of Business and Social Science*, 3(2), 112-117

Bora, B. (2002). Investment distortions and the international policy architecture. Retrieved from https://core.ac.uk/download/files/35/272221.pdf

BudgIT (2017). Annual report 2016: Forgoing tradition; embracing innovation. Retrieved from http://yourbudgit.com/wp-content/uploads/2017/05/BudgIT-Annual-Report-1.pdf

Cleeve, E., (2008). How effective are fiscal incentives to attract FDI to Sub-Saharan Africa? *The Journal of Developing Areas*, 42(1), 135-153

Cumming, R.G., Martinez-Vasquez, J., McKee, M., &Torgler, B. (2009). Tax morale affects tax compliance: Evidence from surveys and an artefactual field experiment. *Journal of Economic Behavior and Organization*, 70(3), 447-457.

Efobi, U., Beecroft, I., &Belmondo, T (2019). Small business use of the integrated tax administration system in Nigeria (African Tax Administration Paper 8, ICTD)

Ekesiobi, C.S., Ude, D.K., &Nwokolo, C (2018). Industrial clusters and industrialisation in Nigeria: A micro-assessment of the Nnewi automotive component industrial cluster, Anambra state. *The Nigerian Journal of Economic and Social Studies*, 60(3), 126-156

Ekesiobi, C., &Dimnwobi, S. K. (2021). Economic assessment of the Igbo entrepreneurship model for entrepreneurial development in Nigeria: evidence from clusters in Anambra state. *International Journal of Entrepreneurial Behavior& Research*, 27(2), 416-433.

Fadiran, D. O. (2019). Do de jure institutions matter for foreign direct investment flows in Nigeria? *Journal of African Business*, 21(1) 1–19.

Farrar, J., &Hausserman, C. (2016). An exploratory investigation of extrinsic and intrinsic motivations in tax amnesty decision-making. *Journal of Tax Administration*, 2(2), 47-66

Fowowe, B. (2013). Do fiscal incentives promote investment? Empirical evidence from Nigeria. *The Journal of Developing Areas*, 47(2), 17-35

Frey, B.S. (2009). Punishment and beyond (Working paper No. 418, Center for Research in Economics, Management and the Arts).

Gahramanov, E. (2009). The theoretical analysis of income tax evasion revisited. *Economic Issues*, 14(1), 35-42

Guzel, S.A., Ozer, G., &Ozcan, M. (2019). The effect of the variables of tax justice perception and trust in government on tax compliance: The case of Turkey. *Journal of Behavioral and Experimental Economics*, 78, 80-86

Hansen, H., Rand, J., & Tarp, F. (2009). Enterprise growth and survival in Vietnam: Does government support matter? *The Journal of Development Studies*, 45(7), 1048-1069.

Hofmann, E., Voracek, M., Bock, C., &Kirchler, E. (2017). Tax compliance across sociodemographic categories: Meta-analyses of survey studies in 111 countries. *Journal of Economic Psychology*, 62, 63-71

Huong, V.V., &Cuong, L.K. (2018). Does government support promote SME tax payments? New evidence from Vietnam. *Finance Research Letters*. Retrieved from doi:10.1016/j.frl.2018.1 1.017

Ibrahim, M., Musah, A., & Abdul-Hanan, A. (2015). Beyond enforcement: what drives tax morale in Ghana? *Humanomics*, 31(4), 399-414.

Inasius, F. (2018). Factors influencing SME tax compliance: Evidence from Indonesia. *International Journal of Public Administration*. Retrieved from doi:10.1080/01900692.2018.146 4578

Jahnke, B., &Weisser, R.A. (2018). How does petty corruption affect tax morale in Sub-Saharan Africa? *European Journal of Political Economy*. Retrieved from doi:10.1016/j.ejpoleco. 2018.09.003

Ling, S. C., Osman, A., Muhammad, S., Yeng, S.K., &Jin, L.Y. (2016). Goods and services tax (GST) compliance among Malaysian consumers: the influence of price, government subsidies and income inequality. *Procedia Economics and Finance*, 35, 198-205

Mannan, K.A., Farhana, K.M., & Chowdhury, G.M.O.F. (2020). Socio-economic factors of tax compliance: An empirical study of individual taxpayers in the Dhaka zones, Bangladesh. MPRA Paper No. 108278

Mas'ud, A., Aliyu, A.A., &Gambo, E.J. (2014). Tax rate and tax compliance in Africa. *European Journal of Accounting Auditing and Finance Research*, 2(3), 22-30

Mcculloch, N., Moerenhout, T., & Yang, J (2020). Building a social contract? Understanding tax morale in Nigeria. *The Journal of Development Studies*. Retrieved from 10.1080/00220388.2020.1797688

McGee, R.W., & An, Y. (2006). *The ethics of tax evasion: A survey of Chinese business and economics students*. Paper presented at the International Academy of Business and Public Administration Disciplines. Orlando, Florida.

McGee, R.W., & Rossi, M.J. (2006). *The ethics of tax evasion: A survey of law and business students in Argentina*. Paper presented at the Sixth Annual International Business Research Conference, Warsaw University.

McGee, R., &Tusan, R. (2008). The ethics of tax evasion: a survey of Slovak opinion. In R. McGee, R (Ed.), *Taxation and public finance in transition and developing economies*. Springer: New York

McGee, R., &Benk, S. (2011). The ethics of tax evasion: A study of Turkish opinion. *Journal of Balkan and Near Eastern Studies*, 13(2), 249-262

Meeusen, W., & van den Broeck, J. (1977). Technical efficiency and dimension of the firm: Some results on the use of frontier production functions. *Empirical Economics*, 2,109-122.

Mekonnen, Y., &Mekonnen, A. (2002). Utilization of maternal health care services in Ethiopia. Retrieved from https://dhsprogram.com/pubs/pdf/fa38/01-mekonnen.pdf

Modugu, P. K., Eragbhe, E., &Izedonmi, F. (2012). Government accountability and voluntary tax compliance in Nigeria. *Research Journal of Finance and Accounting,* 3(5), 69-76.

Musimenta, D., Nkundabanyanga, S. K., Muhwezi, M., Akankunda, B., &Nalukenge, I. (2017). Tax compliance of small and medium enterprises: a developing country perspective. *Journal of Financial Regulation and Compliance*, 25(2), 149-175

Nwokoye, E.S., Oyim, A., Dimnwobi, S.K., & Ekesiobi, C.S. (2019). Socioeconomic determinan ts of information and communication technology adoption among rice farmers in Ebonyi state, Nigeria. *Nigerian Journal of Economic and Social Studies*, 61(3), 1-20

Nwokoye, E. S., Igbanugo, C. I., &Dimnwobi, S.K. (2020). International migrant remittances and labour force participation in Nigeria. *African Development Review*, 32(2), 125-137.

Onyeje, S.A., Court, T. O., &Agbaeze, E. K. (2020). National enterprise policy dimensions and sustainability of micro, small and medium enterprises (MSMEs). *Journal of African Business*. Retrieved from https://doi.org/10.1080/15228916.2020.1838838

Organisation for Economic Co-operation and Development (OECD) (2019). Revenue Statistics in Africa 2019 - Nigeria. Retrieved from http://www.oecd.org/tax/taxpolicy/revenue-statistics-africa-nigeria.pdf

Oxfam (2017). Inequality in Nigeria: Exploring the drivers. Retrieved from https://www-cdn.oxfam.org/s3fs-public/file_attachments/cr-inequality-in-nigeria-170517-en.pdf

Rabiu, S., & Mustafa, D. (2020). Empirical investigation of tax compliance determinants in Katsina state, Nigeria. *International Journal of Advanced Academic Research (Social and Management Sciences),* 6(10), 247-268

Rashid, N., Kamal, N.F.S., Hamid, N.A., Ghazali, N., Yusop, R., Zaid, A.S., ...&Afthanorhan, A. (2018). The effect of government support programs and compliance costs on goods and services tax compliance among Malaysian Batik manufacturers. *International Journal of Academic Research in Business and Social Sciences*, 8(12), 682-695.

Richardson, G. (2006). Determinants of tax evasion: A cross-country investigation. *Journal of International Accounting, Auditing and Taxation,* 15(2), 150-169

Shah, A (1995). Overview. In A. Shah (Ed.), *Fiscal incentives for investment and innovation* (pp. 1-30). New York: Oxford University Press

Stefanski, L.A., &Buzas, J.S. (1995). Instrumental variables estimation in binary regression measurement error models. *Journal of the American Statistical Association*, 90(430), 541-550.

Tuomi, K. (2011). The role of the investment climate and tax incentives in the foreign direct investment decision: Evidence from South Africa. *Journal of African Business*, 12(1), 133-147.

Wenzel, M. (2004). An analysis of norm processes in tax compliance. *Journal of Economic Psychology*, 25(2), 213-228.

Yalama, O.G., &Gumus, E. (2013). Determinants of tax evasion behavior: Empirical evidence from survey data. *International Business and Management*, 6(2), 15-23