

SMEs Tax Compliance Behaviour in Emerging Economies: Do Tax Compliance Costs Matter? Evidence from Ghana

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Abstract

Purpose- Emerging nations are characterised by low-income levels. In spite of this, some of these nations, like Ghana, continue to experience gaps in their revenue targets. A key cause of this gap is the unethical behaviour of tax non-compliance by small and medium-sized enterprises (SMEs). SMEs represent about 99% of businesses in Ghana and are vital for the growth of the country. Some studies conducted in emerging nations have shown that the cost incurred by businesses to comply with tax regulations influences their tax compliance behaviour. However, very little is known of such a relationship in Ghana. This study investigated the connection between tax compliance costs and SMEs' tax compliance behaviour. Design/methodology/approach- Data was collected through a survey of SMEs. Tax compliance behaviour was measured by hypothetical case scenarios obtained from the literature. The tax compliance cost (TCC) was measured as the internal, external and incidental expenses paid by SMEs. A multiple regression analysis was utilised to examine the relationship between TCC and tax compliance behaviour. Findings- The study found that SMEs that incurred large compliance costs were less inclined to act in a non-compliant manner. The TCC was significantly inversely related to the tax compliance behaviour of SMEs. Originality/value- Although a few studies have been conducted in emerging economies, very little is known in the case of Ghana. The study thus adds to the literature on the tax compliance behaviour of SMEs in emerging economies. The study will be a benchmark against which future studies conducted in Ghana can be compared.

Keywords: Tax compliance, Tax compliance cost, Emerging economies, Ghana, SME

Introduction

It is crucial for governments in emerging economies to increase tax revenue mobilization to free up budgetary resources for financing public investments and services (Bame-Aldred *et al.*, 2013; Hoskisson *et al.*, 2000). Consequently, enhancing domestic resource mobilization has been set as a specific goal by the UN member nations, who have also agreed that tax income must be increased to support the Sustainable Development Goals (SDGs) by 2030 (Akitoby *et al.*, 2020). However, like other emerging economies, Ghana has experienced shortfalls in tax revenue (Bachas *et al.*, 2021) over the years. Appendix 1 presents the shortfalls (gaps) in revenue between 2014 and 2021. It indicates the gap between the government's budgeted revenue and its actual revenue. The shortfall in tax revenue, for example, increased from GH¢ 559 million in 2014 (as the base year) to GH¢3,400 million and GH¢16,510 million in 2016 and 2021, respectively. Ghana's tax-to-GDP ratio showed a drop from 14.1% (2018) to 13.5% (2019). The decline of 0.6% in Ghana's revenue compared rather unfavourably with a 0.3% average increase for 30 African nations (OECD/AUC/ATAF, 2021) over the same period.

The tax gaps in Ghana have a number of justifications. The main cause, according to Mascagni *et al.* (2014), is tax non-compliance. Tax non-compliance can be classified into two broad categories: tax evasion and tax avoidance. Tax evasion is considered unethical (Alm & Torgler, 2011; Awang & Amran, 2014) as it involves illegal acts of reducing tax liabilities. On the other hand, the morality of tax avoidance, which is a legal way of minimizing tax liabilities, is a topic of debate and there is no clear consensus on it (Awang & Amran, 2014).

It is widely known that SMEs (defined in this study as small firms with less than 30 employees, while medium-sized and big enterprises have more than 30, and 100 employees respectively) play a major role in productivity across the world, and particularly in emerging markets (OECD, 2019; Inkizhinov *et al.*, 2021). For instance, according to the World Bank (2019), SMEs are responsible for 90% of all firms worldwide and are estimated to be responsible for seven out of 10 jobs in emerging markets. In Ghana, they represent 99.6% of all firms and produce around 70% of Ghana's GDP (GSS IBES, 2016). SMEs in Ghana are essential for fostering growth, generating jobs, and reducing poverty. Thus, tax non-compliance by SMEs reduces revenue for governments which potentially impairs the development of the taxing jurisdiction.

Tax evasion by SMEs is a canker in emerging economies (Newman *et al.*, 2021). The situation of SMEs is heightened by the Covid-19 pandemic, due to the untold hardships it presents for business. These hardships include the loss of revenue, the rising cost of shipping, and ultimately, loss of earnings (Aduhene & Osei-Assibey, 2021; Aidoo *et al.*, 2021). These hardships, make running SMEs very difficult with negative consequences on tax compliance (Liñán & Jaén, 2020). For this reason, governments, especially those in emerging economies, are intensifying tax compliance strategies (Marquis & Raynard, 2015) among SMEs.

In 2015, the Government of Ghana implemented a policy to support SMEs through the inauguration of a full-fledged taxation system based on self-assessment (SAS). As in other emerging economies, the implementation of SAS in Ghana gave taxpayers control over calculating their income tax (Okello, 2014). According to Okello (2014), the transition to SAS is directed by the objective to increase revenue performance through improved tax compliance. As a result, taxpayers are given the choice of acquiring the skills to manage their tax affairs in accordance with the law or engaging tax experts to do so (Lavic, 2022). Both methods include additional expenses, which are reflected in the tax compliance costs (TCC). Taxpayers must pay these expenses in order to comply with the country's appropriate tax rules (Smulders *et al.*, 2017; Sapiei, 2012). To comply with their tax requirements, SMEs must keep accurate records, engage in tax planning, hire experts to complete and file returns and acquire the necessary information. The time expenses associated with filing returns, dealing with tax audits, and resolving tax audit disagreements with the Ghana Revenue Authority are typically substantial portions of the expenditures faced by SMEs.

Expenses incurred by SMEs are divided into three categories by Sandford *et al.* (1989), Ariff and Pope (2002), and Smulders *et al.* (2017) as internal, external, and psychic costs. Other categories of TCC are covered in the literature, including initiation, temporary and ongoing expenses, avoidable and unavoidable costs, and economic and non-economic costs (Musa, 2018; Chunchatrachai, 2013). However, the current study adopts the general classification (Ariff & Pope, 2002) of internal, external, and psychic costs to define TCC.

TCCs are particularly important to taxpayers because they show the worth of the resources used to meet their tax responsibilities (Tran-Nam *et al.*, 2000). High TCC can inhibit economic growth by reducing small businesses' profitability (Schoonjans *et al.*, 2011). SMEs may be overburdened by these TCCs and, as a result, some may be compelled to close down their enterprises or might decide not to cooperate fully. Moreover, an increased cost to SMEs may lead to the ethical problem of low

tax compliance behaviour (Sapiei, 2012), which may exacerbate the government's declining tax revenue.

According to Bruce-Twum and Schutte (2021), SMEs in Ghana averagely spend five thousand Ghana Cedis (USD 1,020) yearly on TCC. However, very little is known about the impact of these costs on the tax compliance behaviour of SMEs in Ghana. Therefore, the study's goal is to investigate the connection between TCC and SMEs' tax compliance behaviour. In other words, the paper seeks answers to the question of whether TCC influences the tax compliance behaviour of SMEs. If the two concepts are positively related, then an increase in TCC will result in an increase in non-compliance behaviour. Conversely, a negative relationship will suggest that an increase in TCC will result in SMEs reducing their non-compliant behaviour. Alternatively, the negative relationship could mean that SMEs who are tax-compliant incur high TCC.

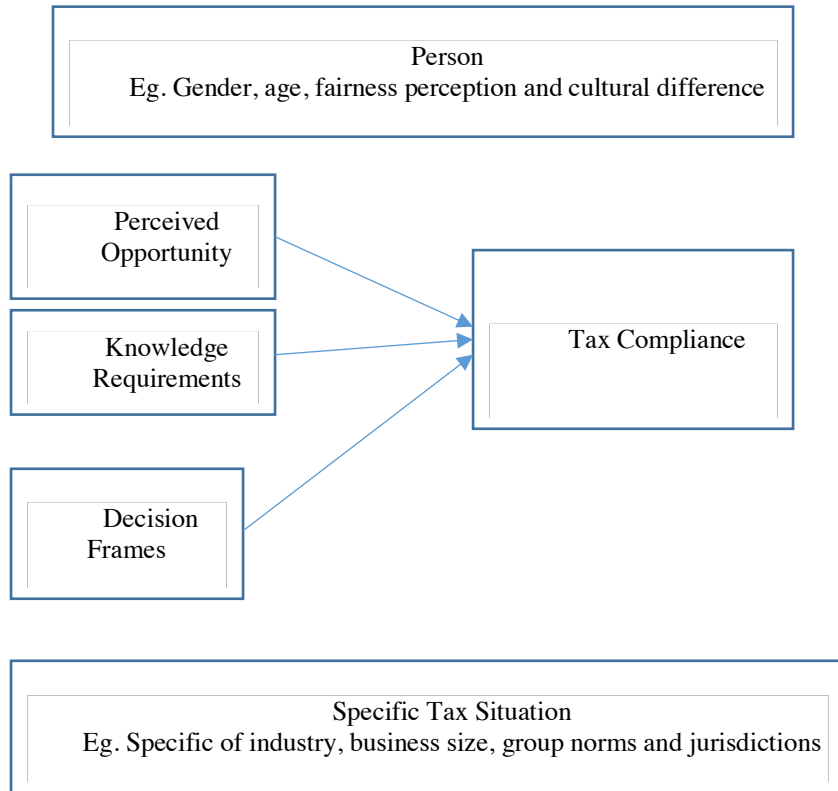
The remainder of this article is organized as follows. A review of the literature and the formulation of hypotheses are presented in the following section. The third section discusses the data and techniques. Conclusions are provided in the final section after the presentation of empirical results in the preceding section.

Literature Review

Various theories and empirical supports have been adduced by scholars to explain the tax compliance behaviour of individuals. These include economic model theories (Lin & Yang, 2001; Merima *et al.*, 2014); social influence theories (Bobek *et al.*, 2013; Cummings *et al.*, 2008); political legitimacy theory (Taylor, 2006; Kirchler *et al.*, 2008, Ruiu & Lisi, 2011), and theory of planned behaviour (Ajzen, 1991). Fischer *et al.* (1992) also postulated that four key factors (demographic, non-compliance opportunity, attitudes and perceptions, and tax structure) significantly influence taxpayers' compliance as they affect non-compliance prospects, behaviours, and perceptions. Chau and Leung (2009) also added culture as a great environmental factor that influences a taxpayer's compliance. The literature shows that understanding tax compliance behaviour is a complicated issue and various disciplines such as economics, psychology, and sociology have contributed to the understanding of taxpayer behaviour (McKerchar *et al.*, 2008).

However, Kamleitner *et al.* (2012) used a psychological lens to assess the variables influencing small business owners' compliance behaviour and proposed three key variables affecting their tax behaviour. These variables are depicted in figure 1.

Figure 1. Factors influencing small business owners' tax compliance



Source: Kamleitner *et al.* (2012)

The framework of factors by Kamleitner *et al.* (2012) acknowledges that situational variables as well as personal traits (such as risk-seeking and gender) can affect how much opportunity is seen to exist (for instance, the nature of businesses' applicable group standards and social links). Small business operators' tax compliance behaviour will be influenced both directly and indirectly by the nature of the business, the jurisdiction, and the culture. An opportunity is a key element of tax compliance for small enterprises, according to the framework. In addition, Kamleitner *et al.* (2012) recognize that the broader environment, which affects how these characteristics (perceived opportunity, knowledge requirement, and decision frames) emerge, has an impact on the particular tax circumstances of any individual business. Other factors such as complex filing procedures and lack of proper enlightenment were also identified by the study of Atawodi and Ojeka (2012) as factors that cause SMEs' non-compliance.

In addition to the theories mentioned above, some studies (Mahangila, 2017; Musa, 2018) have found that the tax compliance

behaviour of SMEs is likely to be affected by TCC. SMEs faced with high TCC decide either intentionally or unintentionally to be compliant. In contrast, when faced with low TCC, SMEs are likely to be compliant. However, there haven't been many studies that looked at the impact of TCC on tax compliance behaviour in emerging economies (Mahangila, 2017; Musa, 2018; Sapiei, 2012). Yesegat (2009) sought to determine the connection between TCC and non-compliance behaviour. Data for the study were gathered through interviews and an experiment conducted with students. Yesegat (2009) concluded that TCC negatively affected intentional compliance behaviour.

The study by Sapiei (2012) provides evidence to suggest that TCC and compliance behaviour are related from the perspective of large business taxpayers in Malaysia. Although it was not statistically significant at conventional levels, the TCC burden does appear to affect the likelihood of non-compliance behaviour. There was no proof that TCC has an influence on company tax non-compliance behaviour. This outcome was similar to Abdul-Jabbar's (2009) Malaysian study on TCC as a predictor of compliance.

Additionally, Mahangila (2017) researched the impact of TCC on behaviour in terms of tax compliance in Tanzania. The investigation was conducted in 2013 and employed an experimental methodology. According to the study's findings, when TCC are high, people may be more likely to avoid taxes. The TCC concentration should be high enough to show any effects. Small variations in TCC do not appear to significantly reduce tax compliance.

Musa (2018) investigated the connection between TCC and SMEs' tax compliance practices in Nigeria. The results indicated that TCC had a significant and detrimental influence on tax evasion. That is, the high TCC that SMEs must pay to comply with tax regulations results in a decrease in tax compliance.

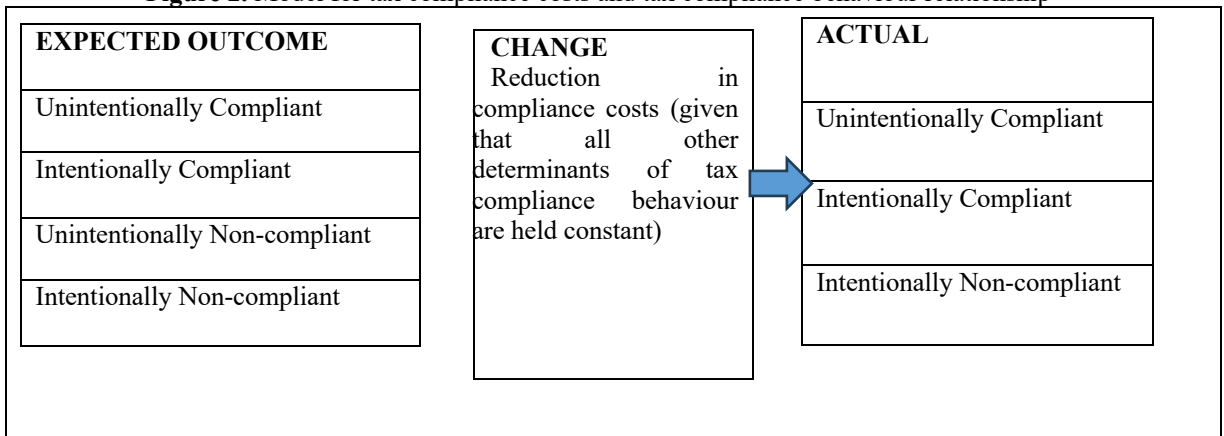
Furthermore, Okpeyo *et al.* (2019) discovered that compliance expenses and other factors such as taxpayer morale, audit and tax rates had an impact on the compliance behaviour of SMEs in Ghana. However, Okpeyo *et al.* (2019) did not consider the actual cost of compliance and how the TCC and compliance behaviour relate to one another. The current study uses a different method and analysis approach to establish the relationship between the TCC and the tax compliance behaviour of SMEs. TCC was likewise discovered to be a key factor in SME tax compliance in a Kenyan study by Chebusit *et al.* (2014).

Based on a cross-country study, Nur-tegin (2008) investigated how TCC affected business behaviour. The study made use of a sample of businesses from 23 emerging economies that were collected as part of the World Bank's Business Environment and Enterprise Performance Survey

(BEEPS II) in 2002. The study's findings demonstrated that the TCC has a favourable and considerable impact on tax evasion. Additionally, the findings indicate that smaller businesses are likely to avoid taxes more frequently than did larger businesses. The study's approach to calculating the TCC, however, was distinct from that of the studies previously identified. It was based on a single assertion that detailed the number of hours senior officials devoted to handling compliance-related issues.

According to the research reviewed, TCC might have an influence on how SMEs handle tax compliance. The model for this study which is based on the relationship between TCC and how tax compliance is handled by SMEs is depicted in Figure 2.

Figure 2. Model for tax compliance costs and tax compliance behaviour relationship



Source: McKerchar (2002, p.31)

The model with a source from McKerchar (2002) assumes that the only factor that determines how SMEs handle tax compliance, is the compliance cost incurred. According to McKerchar (2002), it is possible to forecast the link between compliance decisions and TCC. The lowering of TCC would not affect taxpayers who are anticipated to be compliant, whether intentionally or unintentionally. In contrast with the reduction in TCC, taxpayers who are anticipated to be unintentionally non-compliant will respond favourably. Consequently, there will be no unintentional non-compliant taxpayers as a result of a deletion of TCC, and a decrease in compliance expenses will raise the level of compliance. Those who were predicted to be intentionally noncompliant would not change, but if their noncompliance was due to the TCC, a favourable outcome was projected. The following hypothesis is put forth for the present research in light of the aforementioned literature.

H1: The connection between TCC and SMEs' tax compliance behaviour is positive in Ghana.

Methods and Data

The study adopted the quantitative approach with a preference for the use of a survey. A sample size of two hundred SMEs was determined after taking Yamane's formula into account (Israel, 1992). The sample was randomly chosen to participate in a self-administered survey of five regions of Ghana, namely Central, Greater Accra, Ashanti, Western and Eastern. The regions were selected due to their having 74.5% of all SMEs in Ghana (GSS IBES, 2016). The respondents were mainly entrepreneurs. Some of the entrepreneurs who could not read were assisted by the researcher reading the questions to them and recording their responses.

This study measured TCC according to the techniques used in the literature (Pope, 1993; Sandford, 1995; Sapiei, 2012; Slemrod & Venkatesh, 2002). The TCC measured was based on the summation of internal costs, incidental costs and external costs incurred by SMEs for the 2018 financial year.

The model for estimating the TCC is specified as:

$$\text{Tax Compliance Cost} = \beta_0 + \beta_1\text{Sector} + \beta_2\text{Size} + \beta_3\text{Ownership} + \beta_4\text{Premises} + \beta_5\text{Length} + \beta_6\text{Technology} + \text{Error term} \quad (1)$$

Where $\beta_0, \beta_1, \dots,$ and β_6 are coefficients

The measures for tax compliance behaviour, were based on similar measures used in the literature (Chan *et al.*, 2000; Kamleitner *et al.*, 2012; Sapiei, 2012). Tax compliance behaviour was accessed based on participants' responses to hypothetical tax compliance scenarios. The scenarios mainly dealt with understating income and overstating expenses. The respondents were then questioned about what they would do in similar circumstances. The participants' responses were used to gauge general behaviours, the perceived fairness of income tax, and societal norms of tax compliance.

A regression analysis was conducted, and Appendix 2 explains the dependent variables used in the regression models. Based on the scenarios used to assess compliance behaviour, three models were created. A univariate hypothetical case study on under-reporting income is included in the first model (DV1). The second model includes a univariate hypothetical case study on over-claiming expenses (DV2). A univariate variable called DV3 is created by averaging the results of DV1 and DV2. Higher scores denote non-compliance behaviour for all three dependent variables (D1-DV3).

Enterprise sector, enterprise ownership, tenancy status, enterprise size, enterprise age, technology costs, harassment, TCC and the dimensions of tax culture (complexity, tax rate fairness, tax deterrent sanctions, fairness

of the tax laws, and psychological costs) are among the independent factors incorporated into the regression models.

As the enterprise sector is nominal, three dummy variables were made: D1, representing manufacturing enterprises, D2, representing retail enterprises, and D3, representing other enterprises (which include real estate and construction, banking, and agriculture), with services enterprises serving as the reference category. Two dummy variables (D4, representing partnerships and D5, representing private limited liability companies) were also established due to the nominal nature of business ownership, with sole proprietorships serving as the reference group. As the size of enterprises is ordinal, two dummy variables—D6 representing medium-sized enterprises with a turnover of GH¢50 000–GH¢100 000 and D7 representing large-sized enterprises with a turnover of >GH¢100 000—were generated, with small enterprises with a turnover of GH¢50 000 serving as the reference category.

One dummy variable was created and given the name "X1", with the reference group "owned premises", due to the notional nature of tenancy status. Given that enterprise age was continuous data collected in the survey, it was modelled as a variable "X2". Since continuous data were collected for the study and logarithmically transformed into common logs (Log10) for regression purposes, technology expenses were modelled as a variable "X3". A univariate ordinal variable, labelled "X4", was used to measure harassment in connection with the difficulties of "working with tax authority". TCC was denoted as "X5". Variables X6–X10 were used to signify the tax culture dimensions of complexity, fairness of tax rates and law, sanctions, and psychological costs. The specifics are displayed in Appendix 3.

Based on the above discussion, the model intended is as follows:

$$Y_{1-3} = \beta_0 + \beta_1(D1) + \beta_2(D2) + \beta_3(D3) + \beta_4(D4) + \beta_5(D5) + \beta_6(D6) + \beta_7(D7) + \beta_8(X1) + \beta_9(X2) + \beta_{10}(X3) + \beta_{11}(X4) + \beta_{12}(X5) + \beta_{13}(X6) + \beta_{14}(X7) + \beta_{15}(X8) + \beta_{16}(X9) + \beta_{17}(X10) + e \quad (2)$$

where:

Y = Non-compliance behaviour (with Y_1 =Under-reporting income; Y_2 =Over-claiming expenses and Y_3 =Overall non-compliance behaviour)

β_{1-17} = Coefficients $D1$ = Manufacturing sector

$D2$ = Retail sector; $D3$ = Other sectors; $D4$ = Partnerships; $D5$ = Private limited liability company;

$D6$ = Medium-sized company; $D7$ = Large-sized company; $X1$ = Tenancy status (Renting)

$X2$ = Firm age/business length; $X3$ = Technology cost; $X4$ = Harassment

$X5$ = Total compliance costs; $X6$ = Tax complexity; $X7$ = Tax rate fairness

$X8$ = Tax deterrent sanctions; $X9$ = Tax law fairness; $X10$ = Psychological tax costs

Normality test: Compliance behaviour

The standardised residuals of the dependent variables, which are crucial for OLS regression's effectiveness, must be ensured to be normally distributed. Skewness, kurtosis, and Kolmogorov-Smirnov tests were used to perform a normality test (Hair *et al.*, 2013). The results of the normality test of the standardised residuals of the three dependent variables (DV1-DV3) skewness and kurtosis were around zero, demonstrating that the conditions of normality were met. Additionally, all three models passed the Kolmogorov-Smirnov normality test, with a significance level of 1% ($p > 0.01$). These results show that the three models satisfy the prerequisite for OLS regression because they all presuppose multivariate normality.

Results

A total of one hundred and thirty-two questionnaires were submitted, sixteen of which were rejected, leaving one hundred and sixteen viable responses to be used, giving a response rate of 58%. A summary of respondents' background data is presented in Table 1.

Table 1. Background information of SMEs

Variable	Frequency	Per cent
Enterprises sector		
Manufacturing	19	16.4
Service	54	46.6
Construction	4	3.4
Plantation and agriculture	3	2.6
Finance and banking	5	4.3
Trading (retail)	31	26.7
Ownership structure		
Sole proprietorship	71	61.2
Partnership	27	23.3
Private limited company	18	15.5
Tenancy status		
Rented	57	49.1
Owned	59	50.9
Enterprises Size/turnover (GH¢)		
Less than 49 999	42	36.2
50 000 -100 000	41	35.3
100 001-200 000	10	8.6
200 001-500 000	14	12.1
500 001-1 000 000	9	7.8
Tax liability (GH¢)		

Nil (no tax liability)	4	3.4
Less than 10 000	57	49.1
Between 10 000 and 50 000	43	37.1
Between 50 001 and 100 000	6	5.2
More than 100 000	6	5.2
Enterprises age		
Less than 10 years	63	54.3
10-20 years	41	35.4
More than 20 years	12	10.3
Total	116	100.0

Source: Field Data (2020)

Table 1 indicates that nearly half of the studied businesses (46.6%) were service organizations, followed by almost 26.7% of retailers, 16.4% of manufacturers, and 10.3% of businesses in other industries like real estate & construction, plantations & agriculture, and banking. This result is consistent with Kayanula and Quartey's (2000) findings that in Ghana, service and retail enterprises made up the majority of SMEs.

Table 1 shows that 15.5% of the businesses were private limited liability corporations, 23.3% were partnerships, and 61% of the businesses were sole proprietorships. The majority of businesses (50.9%) owned their premises, while the other businesses (49.1%) worked from rented spaces. Additionally, more than half of the businesses (54.2%) had been in business for less than ten years, 35.3% for between 10 and 20 years, and 10.3% for more than 20 years.

Additionally, in 2018, around 36.2% of businesses had an annual turnover of less than GH¢50 000, about 35.3% had a turnover of between GH¢50 000 and GH¢100 000, and the remaining businesses (28.5%) had an annual turnover of GH¢100 000 or more. For the year under consideration, more than half of the companies (52.5%) had tax liabilities under GH¢10,000, while the rest (47.5%) had tax liabilities beyond GH¢10,000.

Correlation analysis

A correlation analysis was performed to ascertain the strength of the connection between TCC and SME tax compliance behaviours. Table 2 lists the findings of the relationships.

Table 2. Non-compliance behaviour and compliance costs–Correlation Analysis

Non-compliance behaviour	Compliance Cost
Under-reporting income	-0.098
Over-claiming expenses	-0.223*
Overall non-compliance	-0.191*

Note: *p<0.05

Source: Field Data (2020)

A significant negative connection between over-claiming expenses and TCC is shown in Table 2 ($p < 0.05$). Additionally, a statistically significant negative association between overall non-compliance behaviour and compliance expense was found ($p < 0.05$). It follows that high non-compliance respondents were less likely to incur high compliance expenses. Comparatively speaking, respondents who paid large TCC were less inclined to act in a non-compliant manner.

Regression analysis: Determinants of non-compliance behaviour

The diagnostic statistics computed following the application of OLS regression for non-compliance behaviour is shown in Table 3.

Table 3. Diagnostics statistics: non-compliance behaviour

Constructs	Multicollinearity Test			
	DV1 VIF	DV2 VIF	DV3 VIF	
Manufacturing enterprises (D1)	1.696	1.696	1.696	
Retail enterprises (D2)	1.313	1.313	1.313	
Other sectors (D3)	1.387	1.387	1.387	
Partnerships (D4)	1.429	1.429	1.429	
Private company (D5)	1.584	1.584	1.584	
Medium-sized enterprises (D6)	2.172	2.172	2.172	
Large-size enterprises (D7)	2.227	2.227	2.227	
Tenancy (X1)	1.197	1.197	1.197	
Enterprises age (X2)	1.844	1.844	1.844	
Technology cost (X3)	1.454	1.454	1.454	
Harassment (X4)	1.325	1.325	1.325	
Total compliance cost (X5)	1.649	1.649	1.649	
Tax complexity (X6)	1.164	1.164	1.164	
Tax rate fairness (X7)	1.725	1.725	1.725	
Tax deterrent sanctions (X8)	1.223	1.223	1.223	
Tax law fairness (X9)	1.274	1.274	1.274	
Psychological tax costs (X10)	1.42	1.42	1.42	
Heteroscedasticity	Chi-Square (1)	0.540	3.820	2.850
	p	0.460	0.051	0.090
Ramsey reset test	F (3,82)	0.020	0.070	0.960
	p	0.990	0.975	0.417

Note: $VIF < 5$ is acceptable (Hair *et al.*, 2013) DV1=Under-Reporting Income, DV2=Over-Claiming Expenses, DV3=Overall Non-Compliance.

Source: Field Data (2020)

Table 3 depicts the results for three tests conducted, namely Multicollinearity, Heteroscedasticity, and Ramsey reset test, and each is discussed next.

Multicollinearity: Non-compliance behaviour

Using the variance inflation factor (VIF), multicollinearity data were generated. According to the conventional rule of thumb, more inquiry is necessary if the VIF is greater than 5. On the other hand, if VIF is greater than 10, it indicates high multicollinearity and calls for corrections (Sheather, 2009). There were no VIFs higher than 5, which is recommended to demonstrate the lack of multicollinearity issues (Hair *et al.*, 2016). Therefore, there are no collinearity issues with the three regression models for non-compliance.

Heteroscedasticity: Non-compliance behaviour

The Breusch-Pagan/Cook-Weisberg Chi-square tests revealed that none of the three models was statistically significant ($p > 0.01$). As a result, it is suggested that the homoscedasticity null hypothesis cannot be refuted and that the three models' heteroscedasticity was not a problem. Therefore, the data was suitable for OLS.

Ramsey reset test: Non-compliance behaviour

None of the three models' Ramsey Reset tests was statistically significant ($p > 0.01$). The non-significant test results show that the regression models do not exhibit nonlinearity or incorrect specification. The three models are therefore appropriate for OLS.

***OLS Regression results: Non-compliance behaviour
 Under-reporting income (DV1)***

The OLS regression results for under-reporting income (DV1) are given in Table 4.

Table 4. Regression results for under-reporting income

DV1 ^a	β^b	S.E	Beta ^c	t	p
(Constant)	2.75	1.32		2.08	0.04
Manufacturing enterprises	0.38	0.44	0.10	0.85	0.40
Retail enterprises (D2)	-0.01	0.33	0.00	-0.04	0.97
Other sectors (D3)	-0.04	0.51	-0.01	-0.07	0.94
Partnerships (D4)	0.20	0.37	0.06	0.54	0.59
Private company (D5)	-1.21	0.44	-0.32	-2.79	0.00**
Medium-sized enterprises	0.37	0.40	0.13	0.94	0.35
Large-sized enterprises (D7)	0.93	0.42	0.30	2.23	0.03*
Tenancy (X1)	0.08	0.28	0.03	0.30	0.77
Enterprises age (X2)	-0.02	0.02	-0.15	-1.19	0.24
Technology cost (X3)	-0.07	0.08	-0.10	-0.86	0.39
Harassment (X4)	0.09	0.07	0.14	1.30	0.20
TCC (X5)	-0.09	0.32	-0.03	-0.28	0.78

Tax complexity (X6)	-0.03	0.14	-0.02	-0.20	0.84
Tax rate fairness (X7)	0.17	0.11	0.18	1.51	0.13
Tax deterrent sanctions (X8)	-0.31	0.12	-0.27	-2.69	0.00**
Tax law fairness (X9)	0.20	0.15	0.14	1.37	0.18
Psychological tax costs (X10)	0.09	0.11	0.09	0.83	0.41
S.E of estimate	1.303				
R-square	0.293			F-statistic	2.07
Adj. R-square	0.151			Prob. (F-stats.)	0.02*

Note: **p<0.01; *p<0.05;

DV1^a=Dependent Variable=Under-reporting income

β^b=Unstandardised Coefficients, Beta^c=Standardised Coefficients, S.E=Standard Error

Source: Field Data (2020)

Table 4 demonstrates the statistical significance of the predictors' overall link with under-reporting income (F=2.07, p=0.02<0.05). Additionally, the predictor variables collectively explained 15% of the variance in income under-reporting. Particularly, compared to sole proprietorships, private limited liability businesses were substantially less likely to under-report their incomes (Beta=-0.32, t=-2.79, p=0.007<0.01). However, compared to small-sized enterprises, large-sized organizations were considerably more likely to under-report income (Beta=0.30, t=2.23, p=0.03 <0.05).

Regarding tax culture, there is a strong inverse connection between under-reporting income and the perception of tax deterrent penalties (Beta=-0.27, t=-2.69, p=0.009< 0.01). This suggests that respondents were less inclined to under-report their income if they strongly believed that tax-deterrent consequences existed. In other words, the perceived severity of the penalties for not complying with tax laws will affect how likely respondents are to be compliant. The model results for under-reporting income (Y₁) are as follows:

$$Y_1 = 2.75 + 0.38(D1) - 0.01(D2) - 0.04(D3) + 0.20(D4) - 1.21(D5) + 0.37(D6) + 0.93(D7) + 0.08(X1) - 0.02(X2) - 0.07(X3) + 0.09(X4) - 0.09(X5) - 0.03(X6) + 0.17(X7) - 0.31(X8) + 0.20(X9) + 0.09(X10) + e. \quad (3)$$

Over-claiming expenses (DV2)

The OLS regression results for over-claiming expenses (DV2) are given in Table 5.

Table 5. Regression results for over-claiming expenses

DV2 ^a	β ^b	S.E	Beta ^c	t	p
(Constant)	5.46	1.16		4.69	0.00
Manufacturing enterprises	0.13	0.39	0.04	0.33	0.75
Retail enterprises (D2)	0.10	0.30	0.04	0.35	0.73
Other sectors (D3)	-0.35	0.45	-0.08	-0.77	0.45

Partnerships (D4)	0.22	0.33	0.07	0.68	0.50
Private company (D5)	-0.23	0.38	-0.07	-0.59	0.56
Medium-sized enterprises	0.36	0.35	0.14	1.02	0.31
Large-sized enterprises (D7)	0.65	0.37	0.24	1.77	0.08+
Tenancy (X1)	0.29	0.25	0.11	1.15	0.25
Enterprise age (X2)	0.03	0.02	0.24	1.96	0.05*
Technology cost (X3)	0.07	0.07	0.11	0.96	0.339
Harassment (X4)	-0.03	0.06	-0.05	-0.52	0.607
TCC (X5)	-0.95	0.28	-0.39	-3.36	0.00***
Tax complexity (X6)	0.21	0.12	0.17	1.70	0.09+
Tax rate fairness (X7)	0.18	0.10	0.22	1.82	0.07+
Deterrent sanctions (X8)	-0.30	0.10	-0.30	-3.00	0.00**
Tax law fairness (X9)	0.00	0.13	0.00	-0.03	0.98
Psychological costs (X10)	-0.08	0.10	-0.09	-0.79	0.43
S.E of estimate	1.15				
R-square	0.302			F-statistic	2.16
Adj. R-square	0.162			Prob. (F-stats.)	0.011*

Note: ***p<0.001; **p<0.01; *p<0.05; +p<0.10
DV2^a=Dependent Variable=Over-Claiming Expenses
Source: Field Data (2020)

The overall connection between the predictors and excessive expense claims was statistically significant (F=2.16, p=0.011<0.05). Additionally, the predictor variables collectively contributed around 16% of the overall variance explained in over-claiming expenses. In particular, large-sized enterprises were considerably more likely than small-sized enterprises to engage in the behaviour of over-claiming expenses (Beta=0.24, t=1.77, p=0.08<0.10). Additionally, older enterprises were considerably more likely than newer businesses to engage in the practice of over-claiming expenses (Beta=0.24, t=1.96, p=0.05).

Furthermore, there was a significant negative connection between the perception of tax deterrent sanctions and over-claiming expenses (Beta=-0.30, t=-3.00, p=0.009 <0.01). This implies that respondents who greatly perceived tax deterrent sanctions were less likely to exhibit the behaviour of over-claiming expenses. In other words, the greater the perceived tax deterrent sanctions, the more likely the respondents will be compliant.

In terms of TCC, Table 5 indicates that enterprises with high TCC were much less likely than those with low TCC to engage in the practice of over-claiming expenses (Beta=-0.39, t=-3.36, p=0.001<0.001). The model results for over-claiming expenses (Y₂) are as follow:

$$Y_2 = 5.46 + 0.13(D1) + 0.10(D2) - 0.35(D3) + 0.22(D4) - 0.23(D5) + 0.36(D6) + 0.65(D7) + 0.29(X1) + 0.03(X2) + 0.07(X3) - 0.03(X4) - 0.95(X5)$$

$$+0.21(X6) + 0.18(X7) - 0.30(X8) + 0.00(X9) - 0.08(X10) + e \quad (4)$$

Overall non-compliance behaviour (DV3)

The OLS regression results for overall non-compliance behaviour (DV3) are given in Table 6.

Table 6. Overall non-compliance behaviour

DV3 ^a	β^b	S.E	Beta ^c	t	p
Constant	4.11	1.00		4.12	0.00
Manufacturing enterprises (D1)	0.25	0.33	0.09	0.75	0.45
Retail enterprises (D2)	0.04	0.25	0.02	0.18	0.86
Other sectors (D3)	-0.19	0.39	-0.05	-0.50	0.62
Partnerships (D4)	0.21	0.28	0.08	0.76	0.45
Private company (D5)	-0.72	0.33	-0.24	-2.19	0.03*
Medium-sized enterprises (D6)	0.37	0.30	0.16	1.22	0.23
Large-sized enterprises (D7)	0.79	0.32	0.33	2.51	0.02*
Tenancy (X1)	0.18	0.21	0.08	0.87	0.39
Enterprise age (X2)	0.01	0.01	0.04	0.36	0.72
Technology cost (X3)	0.00	0.06	0.00	-0.01	0.993
Harassment (X4)	0.03	0.05	0.06	0.56	0.578
TCC (X5)	-0.52	0.24	-0.25	-2.15	0.03*
Tax complexity (X6)	0.09	0.10	0.08	0.86	0.391
Tax rate fairness (X7)	0.17	0.09	0.24	2.06	0.04*
Tax deterrent sanctions (X8)	-0.31	0.09	-0.35	-3.53	0.00***
Tax law fairness (X9)	0.10	0.11	0.09	0.89	0.376
Psychological tax costs (X10)	0.01	0.08	0.01	0.09	0.93
S.E of estimate	0.984				
R-square	0.332			F-statistic	2.49
Adj. R-square	0.198			Prob. (F-stats.)	0.00**

Note: ***p<0.001; **p<0.01; *p<0.05.
Source: Field Data (2020)

Overall, there was a statistically significant relationship between the predictors and non-compliance behaviour (F=2.46, p=0.003–0.01). Additionally, the predictor variables together account for around 20% of the overall variance in non-compliance behaviour that can be explained. Particularly, private limited liability corporations considerably outperformed sole proprietorships in terms of compliance (Beta=-0.24, t=-2.19, p=0.03<0.05). However, compared to small-sized organizations, larger organizations were substantially more inclined to be non-compliant (Beta=0.33, t=2.51, p=0.02< 0.05).

The results for TCC indicate that organizations with high TCC were considerably more likely to display compliance behaviour than companies with low TCC (Beta=-0.25, t=-2.15, p=0.03< 0.05). Tax rate fairness and

non-compliance behaviour exhibit a significant positive relationship (Beta=0.24, t=2.06, p=0.04 <0.05); accordingly, respondents who believed the tax rate structure was more equitable were more inclined to act in a non-compliant manner.

In summary, private limited liability enterprises, TCC, perception of fairness of tax rate, and tax deterrent sanctions, were significant determinants of SMEs' non-compliance behaviour. The model result for the overall non-compliance behaviour (Y_3) is as follow:

$$Y_3 = 4.11 + 0.25(D1) + 0.04(D2) - 0.19(D3) + 0.21(D4) - 0.72(D5) + 0.37(D6) + 0.79(D7) + 0.18(X1) + 0.01(X2) + 0.00(X3) + 0.03(X4) - 0.52(X5) + 0.09(X6) + 0.17(X7) - 0.31(X8) + 0.10(X9) + 0.01(X10) + e \quad (5)$$

Relationship between TCC and tax compliance behaviour

The results show that TCC and non-compliance behaviour was found to be significantly inversely related in the study (Beta=-0.25, t=-2.15, p=0.03 < 0.05). This suggests that organizations with high TCC were a lot more inclined to behave in a compliant manner than organizations with low TCC. In other words, businesses with higher TCC scores are typically more compliant than those with lower scores.

This finding is intriguing given that the study's hypotheses predicted a positive connection between TCC and tax compliance behaviour. This is likely a result of the fact that businesses with higher levels of TCC typically have higher compliance rates with tax laws. The findings also suggest that while businesses tend to be more compliant, their compliance costs may be higher. As a result, rather than being causal, the relationship between the level of TCC and compliance behaviour was one of correlation. This implies that SMEs can enhance their compliance level if the TCC is decreased. Finally, in terms of compliance costs, enterprises with higher TCC were significantly less likely to exhibit the behaviour of over-claiming expenses (p<0.001) and engage in overall non-compliance behaviour (p<0.05) when compared with enterprises with lesser levels of TCC.

Hypotheses results

The study posited that TCC has a positive connection with tax compliance behaviour. The study found a significant inverse association (Beta=-0.25, t=-2.15, p=0.03<0.05) between the level of TCC and non-compliance behaviour. This suggests that enterprises with high compliance costs were much less likely than businesses with low compliance costs to engage in non-compliance behaviour. In other words, businesses with higher TCC scores are typically more compliant than those with lower scores. Therefore, the hypothesis was rejected in the present context.

Conclusion

SMEs represent the largest number of businesses in emerging markets, including those in Ghana. Thus, when SMEs are highly tax compliant, tax revenues earned by the Government will be high. The high tax revenue earned by the state will enable the Government to discharge its developmental obligations to the citizens. However, SMEs incur costs to abide by the tax regulations. Although the review indicated that few studies have been conducted in the area of TCC and SMEs tax compliance behaviour in emerging economies, the theories and empirical studies have shown that TCC has a relationship with the compliance behaviour of SMEs. The empirical review further shows that when these costs are high, SMEs may reduce their compliance level, which will reduce the tax revenues of the Government. Therefore, the present study's goal was to investigate the connection between TCC and SMEs' tax compliance behaviour. Using data from a survey of SMEs, the study discovered a significant negative connection between TCC and tax compliance behaviour. The result means that enterprises with high TCC were much less likely than businesses with low TCC to engage in non-compliance behaviour. The result further indicates that TCC does not discourage tax compliance behaviour. The result was contrary to the hypothesis of the study, which was expecting the TCC to have a positive relation with tax compliance behaviour. A mixed result is obtained when the results of the study are compared to previous studies conducted in other emerging nations. For instance, the results contradict Malaysian studies (Abdul-Jabbar, 2009; Sapiei, 2012) that revealed weak connections. It, however, agrees with studies conducted in other countries like Nigeria (Musa, 2018) and Ethiopia (Yesegat, 2009).

The study's 116 usable responses limited a convenient generalisation of the findings. However, these responses were representative of Ghana's SME population and sufficient for regression analysis. Any future research should look at a considerably larger sample size. This limitation was nevertheless mitigated by the utilisation of a diverse range of business sectors and the selection of respondents from five of the ten regions in Ghana.

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Appendix 1. Ghana Revenue Deviations (2014-2021)

	2014		2015		2016		2017		2018		2019		2020		2021	
	GH¢'m	% of GDP	GH¢'m	% of GDP	GH¢'m	% of GDP	GH¢'m	% of GDP	GH¢'m	% of GDP	GH¢'m	% of GDP	GH¢'m	% of GDP	GH¢'m	% of GDP
Tax revenue	(559)	(1)	971	1	(3400)	(2)	(1763)	(1)	(1830)	(1)	(3258)	(1)	2116	1	(16510)	(4)
Tax on income and property	(673)	(1)	(704)	1	(2252)	(1)	(449)	0	309	0	(512)	0	(40)	0	(9397)	(2)
Tax on domestics goods & services	(44)	0	536	0	(115)	0	(145)	0	(1700)	0	(1040)	0	(1890)	1	(6340)	(2)
International trade taxes	(158)	0	1139	1	(1263)	0	(1129)	(1)	(318)	0	(1220)	0	800	0	(1780)	0
Non tax revenue	(402)	0	(293)	0	(1936)	1	(596)	0	(1292)	(1)	(145)	0	(68)	0	(2953)	1
Grants	(577)	(1)	687	1	(449)	0	(303)	0	(21)	0	(277)	0	5	0	(271)	0

Source: Researcher compilations GOG Budget Statements 2014-2022

Appendix 2. Dependent variables

Non-compliance behaviour	Measurement
Under-reporting income (DV1)	The respondents' degree of agreement with under-reporting income was evaluated using a Likert scale with six points.
Over-claiming expenses (DV2)	The respondents' degree of agreement with over-claiming expenses was evaluated using a Likert scale with six points.
Overall non-compliance (DV3)	Average scores of DV1 and DV2

Source: Sapiei (2012)

Appendix 3. Independent variables

Predictors	Measurement
Enterprises sector (Sector) (D1, D2 and D3)	The sectors were reduced to four (manufacturing, services, retail and others) because of the low number of responses received for some sectors. The “other sectors” include all the remaining sectors: property and construction, finance and banking, and plantation and agriculture. Three dummy variables (D1, D2 and D3) were created with service as the reference sector for regression.
Ownership structure (D4 and D5)	The three levels of enterprise ownership include sole proprietorship, partnership and private limited liability company. Two dummy variables (D4 and D5) were created with sole proprietorship as the reference level for regression purposes.
Enterprises size (Size) (D6 and D7)	The five levels of turnover were reclassified into three levels because of the low quantity of responses received for the last two categories, which were merged with the third category. The first category was classified as small-sized enterprises (that is, a turnover <GH¢50 000). The second category was classified as medium-sized enterprises (a turnover between GH¢50 000 and GH¢100 000). The third category was classified as large-sized enterprises (that is, a turnover > GH¢100 000). Two dummy variables (D6 and D7) were created for regression purposes, with small-sized enterprises used as the reference category.
Tenancy status (X1)	The two-tenancy status was “owned” and “renting”. For regression purposes, one dummy variable was created with “Owned” premises as the reference level. The tenancy (renting) variable is denoted as X1.
Enterprises age (Year) (X2)	The number of years companies have been in business was identified from the actual survey responses. A higher score indicates companies have been in operation longer. The enterprise age variable is denoted as X2.
Technology cost (X3)	The cost of hardware and software incurred by the enterprises in 2018 was solicited. Technology cost estimates were converted to common logs (log10) for regression purposes. The technology variable is denoted as X3.
Harassment (X4)	Harassment was measured using difficulty in “dealing with tax authority”. An ordinal scale (1=most important, 7=least important) was used to gather data on harassment. For ease of interpretation, the scale was reversed-coded. The harassment variable was denoted as X4 for regression purposes.
Total compliance cost (X5)	The three key components that made up TCC estimates were internal, incidental, and external costs. Estimates of overall compliance costs were transformed to standard logs (log10) for regression analysis. Higher scores represented higher compliance costs.
Tax complexity (X6)	Tax complexity was the first dimension of attitudinal aspects (tax culture).
Tax rate fairness (X7)	Tax rate fairness was the second dimension of attitudinal aspects (tax culture). A higher score indicated greater perceived fairness in the tax rate structure.
Tax deterrent sanctions (X8)	Tax deterrent sanction was the third dimension of attitudinal aspects (tax culture). A higher score indicated greater perceived tax deterrent sanctions.
Tax law fairness (X9)	Tax law fairness was the fourth dimension of attitudinal aspects (tax culture). A higher score indicated greater perceived fairness in the tax system.
Tax psychological costs (X10)	Tax complexity was the fifth dimension of attitudinal aspects (tax culture). A higher score indicates higher perceived tax psychological costs.

Source: Sapiei (2012)