# TAX KNOWLEDGE AND TAX COMPLIANCE OF SMALL AND MEDIUM ENTERPRISES IN GHANA

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## ABSTRACT

*The importance of taxes in every economy cannot be underestimated. This study recognises that efforts are being made to use tax knowledge to improve the taxes generated to promote national development. The need to promote tax paying behaviour in sub-Saharan Africa is needed to ensure the development of countries within the region. Tax knowledge has been acknowledged as one of the factors that promote tax compliance. This study is aimed at examining the effect of dimensions of tax knowledge on tax compliance in the Ghanaian context using small and medium enterprises. Tax knowledge is about knowledge of tax responsibilities and rights, knowledge about employment income, knowledge about business income, and awareness of sanctions. The survey includes 130 managers of small business enterprises (SMEs) in Ghana, who had been part of a tax education campaign by the Ghana Revenue Authority in the Nkawkaw Municipality. The data was analysed using a structural equation modelling approach. The results of the study suggest that knowledge of tax rights and responsibilities, knowledge of employment income, and awareness of sanctions were found to have a positive and significant relationship with tax compliance. Knowledge of business income was not statistically related to tax compliance. The findings of the study suggest that knowledge of tax rights and responsibilities, and awareness of sanctions are the strongest determinants of tax compliance in the SME sector. Despite the insignificant relationship between knowledge of business income and tax compliance, this study considers this factor as important in ensuring SME conduct self-assessment. Self-assessment must be pursued to encourage SMEs to pay their taxes. This study recommends the use of tax education to enhance tax knowledge in an attempt to improve compliance among SMEs in the developing country context. The study also contributes to the literature on the use of tax knowledge to enhance tax compliance using SMEs in Ghana.*

Keywords: Tax Knowledge, Tax Education, Tax compliance, Small Business Enterprises, Ghana

## INTRODUCTION

In every modern economy, the payment of taxes is an important source of revenue for the provision of social goods and payment of essential services (Young et al., 2016). In terms of Gross Domestic Product (GDP), the taxes collected from individuals, and businesses contribute immensely to a country's GDP. This is true not for only developing countries but developed countries as well. In the case of Ghana, tax revenue contributes to a greater portion of government revenue (Ibrahim et al., 2015). In a developing country context, a decline in economic activities leads to a situation where taxes become a valuable source of government revenue. This implies that the survival of many economies depends hugely on taxes. The contribution of the tax revenue to the GDP of Ghana in 2014 amounted to 14 percent (ISSER, 2014). In an attempt to keep this important revenue stream viable, there is a need to ensure taxpayers comply with the tax laws of the country.

Taking into consideration the tremendous role played by taxes in every economy (Young et al., 2016), governments in different economies have put in place mechanisms to ensure the compliance of tax laws. These tax laws are directed at ensuring compliance in an attempt to achieve revenue targets for development. These tax laws may lead to the willingness of taxpayers to pay their taxes. This calls for stakeholders responsible for tax compliance to promote the willingness, not just through the use of tax laws to improve tax compliance. Tax compliance may be attributed to a number of factors. These factors must be identified to ensure they are improved upon. This is because tax compliance has always been a problem for countries (Torgler, 2002). In the view of Torgler (2002), this phenomenon is as problematic as taxes themselves. Andreoni et al. (1998) also expressed a similar opinion on tax non-compliance by looking at how nations all over the world are trying to resolve this issue. This has led to tax experts and researchers trying to understand why there exists a high rate of tax non-compliance.

It is expected that the continued existence of this phenomenon means there will always be research to understand why taxpayers do not comply with tax laws (Torgler, 2002). In a developing country context, the attention of tax authorities is to increase the tax net, to include everyone eligible to pay tax to do so. Also, the attention is also on increasing the level of compliance of those already engaging in some form of tax-paying behaviour. The debate on tax compliance does not just relate to large scale business and multinational firms. There is also a focus on small business owners and individuals. It is worth noting that the business in the informal sector, especially small and medium enterprises have been cited as having high rates of non-compliance to tax laws. Kamleitner et al. (2012) provide a reason for this by stating that, SME owners and managers may be seen as non- compliant to tax laws due to their lack of knowledge about tax laws in their respective countries. The lack of knowledge puts SMEs in a likely position not to pay their taxes as compared to large scale businesses. These SMEs and individuals, therefore, assume non-compliance to tax laws is not unlawful and that they may not have the responsibility to comply (Kisipillai et al., 2003).

From the ongoing discussions, it is obvious that the knowledge of business owners on tax issues in a country may be a major determinant of tax compliance. This has led to streams of studies on tax knowledge. Palil and Mustapha (2011), agree that the level of education received by the tax-payer is important in improving their level of knowledge about issues relating to tax. There seems to be inadequate research attention on the tax behavior of SMEs. In the view of Kamleitner et al. (2012) the importance of paying taxes by small businesses to government is expected to lead to interest by researchers to study the tax-paying behavior of SME owners. Research in Ghana at the micro-level on the effect of tax knowledge on tax compliance appears to be limited. However, the extant literature in Ghana has overly been concentrated on tax compliance (eg. Asante & Baba, 2011; Abdul-Razak et al., 2013). The recognition that SMEs play a vital role in contributing to tax revenue demands that researchers pay attention to how these businesses comply with the tax laws.

The study provides some information on the tax system relating to SMEs. The study also provides a theoretical perspective on tax compliance. This study considering the importance of SMEs to a country's tax revenue focusses on examining the level of tax knowledge and tax compliance among small business managers. The study also seeks to examine the relationship between tax education and tax compliance of SME business managers in Ghana.

## LITERATURE

### SME Tax Issues

There a number of taxes that apply to SMEs all over the world. Taxes refer to compulsory, unrequited payments to the government (OECD, 1996). The OECD classifies taxes into a) taxes on income, profits and capital gains b) social security contributions c) taxes on payroll and workforce d) taxes on property e) taxes on production, sale, delivery of goods and services. In the US, the tax for Small business enterprises includes income tax, employment tax, excise tax, property tax, sales and use tax, estimated tax, and self-employment tax (usa.gov). In Malaysia, PWC (2020) states that personal income tax, employment income, corporate income tax, withholding tax, sales tax, and service tax are some taxes paid to the government. The GRA (2020) states that a tax is charged on a person's income from employment, business, and investment, which is applicable to persons such as employee, self-employed, persons in partnership, shareholders and directors, and trustees and beneficiaries of a trust.

### *Personal Income Tax (employee income and business owner income)*

In Malaysia, personal income tax is charged on a qualified person (15% of income), who is a knowledge worker residing in Malaysia and engaged in employment (PWC, 2020). This tax rate is progressive income tax rate similar to that of Ghana. In the UK for instance (GOV.UK, 2020) reports that there is a basic rate (20%), the higher rate (40%), and an additional rate (45%). In the Ghanaian context, this tax is charged on a person's total income (income from employment, business, and investment). This applies to sole proprietors or a person in partnership and earns income. In Ghana, *Pay As you Earn (PAYE)* is deducted from employees' income, which is paid by the employer on behalf of the employee. The tax is paid on all income earned by the employee, which can be in the form of benefit in cash or in kind. The employer, in this case, must file a return on behalf of the employee on or before the fifteenth day of the month following the month the deduction was done.

The employers of SMEs must also pay personal income tax. This is referred to as business income, which is paid through installments for individuals having businesses. This tax is paid on gains or profits from carrying out a business, vacation, trade, or profession (Inland Revenue Board of Malaysia, 2020). The ability of business owners to conduct self-assessment of income is important in ensuring the effective payment of this tax.

### *Income Tax Stamp*

This tax is designed for individuals operating in the informal sector such as dressmakers/tailors, hairdressers/beauticians/barbers, susu collectors, chop bar owners, cooked food sellers, butchers, container/kiosk/table-top operators, garage owners, artisans (masons, carpenters, welders, mechanics, vulcanisers, electricians, sprayers), hawkers, and itinerant traders. This tax is paid on a quarterly basis and should be paid four times a year. The tax stamps are grouped based on the size, nature, and volume of the business.

### *Corporate Income Tax*

This is usually referred to as income tax (e.g. usa.gov). These charged on a company's total income sources at the end of the companies accounting year. Companies pay taxes on business and investment income known as gains and profit. This income excludes the expenses made while obtaining the income. This could apply to SMEs that have been registered as companies and have large capital and income base. SMEs operating in the formal sector are likely to pay this tax. However, sole-proprietors and partnerships do not usually pay this type of tax. For resident companies, a tax rate of 24% in Malaysia (PWC, 2020) and 19% is charged in the UK (GOV.UK). Corporate tax rates in Ghana, in general, is 25% but differs based on the industry a business is found in.

### *Withholding Tax (WHIT)*

It is a tax which is deducted at source by a withholding agent (a person required to deduct tax) when making payment to another person and accounted for later. A payment made by a registered business to another person for goods and services bought attracts a withholding tax, which is kept by the business making the payments. However, a business must be registered to do this. The withholding tax rates in Ghana for 2020 are set between 3% and 15% depending on whether persons are resident or non-resident. For instance, withholding tax rates for the supply of goods works exceeding GH₵ 2,000 ranges from 3% to 7.5%. In Malaysia, PWC (2020) reports that a withholding tax is a method used by the government to collect tax from non-residents who have derived income.

**Theoretical Issues**

There are a number of theories used to explain tax compliance. In the view of Atawodi and Ojeka (2012), tax compliance theories are mainly classified into economic-based theories and psychology-based theories. The economic-based theories are usually related to deterrence and lay emphasis on incentives. These are the Utility Theory and the Economic Deterrence Model of Tax Compliance. These theories explain the motive for paying taxes. The Utility Theory of tax compliance proposed by Allingham and Sandmo (1972) assumes that taxpayers are considered as utility maximisers who may have the ideas of tax penalties. The theory explains the two choices available to taxpayers: 1) declaring the actual income, 2) declaring less than the actual income. The decision by a taxpayer to choose the latter approach will be determined by the ability of tax authorities to investigate them. The knowledge of tax-payers regarding the ability of tax authorities to detect non-compliance is key. Devos (2013), asserts that taxpayers are risk-averse and may try to avoid penalties. Casey and Scholz (1991) assert that deterrence models predict tax compliance behaviour based on the subjective probability and utility of outcomes associated with alternative actions.

In relation to tax knowledge, there is the possibility of presenting audited income statements to tax authorities when business owners have knowledge about tax issues. An economic motivation to prepare audited accounts and to be given the appropriate tax to pay is to avoid penalties. Business owners are therefore compelled to comply with tax laws due to penalties. The Economic Deterrence Model of Tax compliance involves actions taken by individuals to reduce the rate of threatening behavior. In the view of Atawodi and Ojeka (2012), tax-payers are referred to as amoral utility-maximisers, whose actions are influenced by profit motives and the probability of detection. The practicality is that business owners will assess the various alternatives available to them in terms of whether they can invade tax without being detected and the resulting repercussions.

The use of the Social Exchange Theory to explain tax compliance emphasizes interactions among actors in society. In this case, individuals and the state has a relationship in terms of obligations regarding the generation and management of taxes. Mangoting et al. (2015) assert that tax compliance is a form of a social contract between an individual and a state. Social Exchange may be classified as a psychology-based theory, which assumes that tax-payers are influenced to comply with tax obligations due to psychological factors (Atowodi & Ojeka, 2012). The attitude of individuals is as a result of social norms of which tax paying is part (Onu & Oats, 2016). It is assumed that tax paying is dependent on continuous public education and engagement to raise awareness and morale of taxpayers. It must be seen as reciprocation between the expectations of the individuals and the state. Feld and Frey (2007) assert that the incentives to pay taxes may come from the willingness to pay taxes to the government in order to enjoy public goods and services.

*Tax Knowledge*

Tax knowledge refers to the level of awareness and understanding of the tax system of a country. Tan and Chin-Fatt (2000) examine the level of tax knowledge on issues relating to fringe benefits, income tax, deductions, and tax obligations. Eriksen and Fallen (1996) state that the level of knowledge is important in determining the way people comprehend the reality underlying taxation and the attitudes towards taxation. Educating taxpayers about the social and financial impacts of a taxation system can improve their willingness to comply with the tax policies of countries (Loo & Ho, 2005). Therefore the attitude of the taxpayer towards taxation in relation to the taxpayer's level of tax knowledge provides the support that educating the young student, young entrepreneur or business owners will ensure that they become good tax citizens.

Palil and Mustapha (2011) assert that tax knowledge reflects the level of tax education, which is estimated by the familiarity with the tax rights and responsibilities, knowledge of employable income, knowledge of personal relief, awareness of tax offences, penalties, and fines. Apart from these knowledge issues on tax, knowledge about tax rebates, child relief, and dividends and interests are important issues that show how educated an individual is about taxes (Palil & Mustapha, 2011). Mukhlis et al. (2015) conceptualized tax education as the effect of knowledge in tax rights and obligations, tax functions and penalties, tax type and tariff, tax mechanisms and payments, and tax measurements (assessment). This study focuses on the following dimensions of tax knowledge: knowledge of tax rights and responsibilities, knowledge of business income, knowledge of employment income and awareness of sanctions (fines and penalties).

*Tax Compliance*

James and Alley (2002) define tax compliance as "the willingness of individuals and other taxable entities to act in accordance within the spirit as well as the letter of tax law and administration without the application of enforcement activity". Awang and Amran (2014) presume that tax compliance includes consenting to tax rates, and any other regulations. They found that tax non-compliance like tax evasion and avoidance is exploitative as it influences the imbalance of wealth among the general population. Tax compliance explains making, creating, submitting accounts, and making payments to the tax regulatory experts on time and in the required manner. It is how much a tax-payer goes along or neglects to agree to the assessment standards of a country. Tax compliance is the eagerness of taxpayers to meet their assessment commitments as per the pertinent guidelines without the requirement for audits. It is worth noting that tax compliance is where the tax-payer meets all taxation liabilities. In effect, the tax-payer is said to obey, satisfy, and pay tax commitments as per the arrangements made by tax authorities. It is suggested that organizations ought not to take part in resistance behaviour like tax avoidance (Awang & Amran, 2014). In sum, it is related to satisfying all tax commitments as determined by the law openly and totally.

**The Effect of Tax Knowledge on Tax Compliance**

Studies have shown that many factors affect taxpayer's compliance and this includes tax knowledge (Saad, 2014; Pallil et al., 2013; Palil & Mustapha, 2011, Tan, & Chin-Fatt, 2000). A study by Maseko (2014) found among SMEs that tax knowledge had no correlation with tax registration and a negative correlation with filing compliance. This study calls for more tax education efforts among tax authorities. The findings of Mukhlis et al. (2015) found that tax knowledge has a significant and positive effect on tax compliance. Researchers like Palil et al. (2013) presumed that tax awareness among citizens is exceptionally

critical to guarantee compliance. Under the self-assessment system, Saad (2014) observes that studies in Malaysia have found tax knowledge as the most important predictor of tax compliance.

Palil and Mustapha (2011) found that knowledge of tax rights and responsibilities has a significant relationship with tax compliance. However, Tehulu (2016) found that knowledge of tax rights and responsibilities is not an important variable in explaining tax compliance attitude. On the effect of knowledge on the assessment of employment income, Palil and Mustapha (2011) found that knowledge of employment income has a significant relationship with tax compliance. This implies that SME owner's ability to determine their personal income will ensure they comply with income tax payments. Another important factor promoting tax compliance is knowledge of business income. This relates to the self-assessment of revenue generated by an SME and how much the business is required to pay. Palil (2010) asserts that the self-assessment system (SAS) has become a key administrative approach for personal and corporate tax-payers. Sarker (2003) states that self-assessment is a strategy used in developing countries to promote voluntary tax compliance. The ability to determine business income to aid in the preparation of tax returns was identified by business tax-payers as an important issue determining tax compliance (Belay & Viswanadham, 2013). Finally, awareness of sanctions and penalties are deemed as crucial in ensuring business owners pay their taxes. Palil and Mustapha (2011) found that awareness of tax sanctions is significantly related to the level of tax compliance. However, Tehulu (2016) found that knowledge of offences and penalties is not an important determinant of tax compliance. The discussions lead to the conclusion that the level of tax knowledge is significant to the achievement of positive tax behaviour. A review of empirical studies leads to the following hypotheses:

*H1: Knowledge of tax rights and responsibilities has a positive and significant relationship with SME tax compliance.*
*H2: Knowledge of business income has a positive and significant relationship with SME tax compliance.*
*H3: Knowledge of employment income has a positive and significant relationship with SME tax compliance.*
*H4: Awareness of sanctions has a positive and significant relationship with SME tax compliance.*

The research model (fig. 1) explains that knowledge of tax rights and responsibilities, knowledge of business income, knowledge of employment income, and awareness of sanctions affect tax compliance of SME owners.

**Fig 1. Research Model**
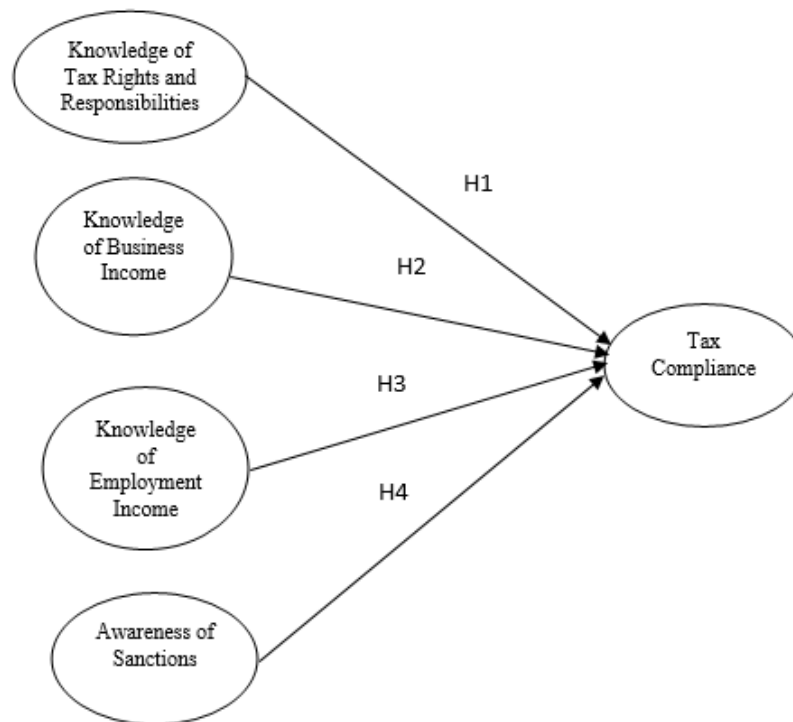


**METHODOLOGY**

The study conducted a survey using SME managers in Ghana. The respondents were part of a tax education workshop organised by the Ghana Revenue Authority for business owners within the Nkawkaw STO area. The total number of registered participants was One Hundred and Thirty-Nine (139). The topics treated include the highlights of the New Income Tax ACT, 2015 (ACT 896), implementation of the Value Added Tax ACT, 2013 (ACT 870), business registration and re-registration and issues on withholding Tax, Records Keeping, Tax Stamp, VIT, Rent, and Rights and Obligations of Taxpayer. Out of these 139 business managers, 130 completed the study questionnaire. The researcher sought permission from the GRA and requested data on SMEs who have been part of the tax education programme in the Municipality. The GRA office provided access to these taxpayers and also assisted in distributing questionnaires to them.

The survey was conducted from February 17th to March 20th, 2018 since taxes are paid from 15th April at the beginning of the second quarter of the year. This is to ensure that respondents are asked to express their opinions about tax compliance after a few months they have filed their taxes. This approach is to ensure the data will not be biased due to any exaggeration and critical feelings about the tax systems as proposed by Palil and Mustapha (2011).

The items to measure tax knowledge was developed using studies of Palil and Mustapha (2011) and Mukhis et al. (2015). This involves tax knowledge on issues relating to tax responsibilities and rights, employment income, business income, and knowledge about fines and penalties. Using these studies, the researchers developed scales and subjected them to validity and reliability test. The tax knowledge variables on personal relief, child relief, rebates, and dividends and interests in the study of Palil and Mustapha (2011) were not included considering the unfamiliar nature of tax payment by SME in Ghana. The items measuring tax compliance was developed from Kirchler and Wahl (2010) and Mukhis et al. (2015). The study subjected the scale to validity and reliability test. The data collected was analysed using the Statistical Package for Social Scientists (SPSS) and partial least squares – structural equation modelling.

**STUDY RESULTS**

The study survey conducted includes 66 male and 64 female business owners. The Majority of the businesses used in the study have operated for 7 to 9 years. Most respondents are between the age bracket of 34-38, and above 39. The respondents are mostly engaged in trading and provision of services.

**Table 1: Demographic Profile**

| Demographic Profile | Frequency | Percent |
|---|---|---|
| *Gender of Respondent* | | |
| Male | 66 | 50.8 |
| Female | 64 | 49.2 |
| *Age of Business* | | |
| 1-3 | 9 | 6.9 |
| 4-6 | 33 | 25.4 |
| 7-9 | 71 | 54.6 |
| 10-12 | 6 | 4.6 |
| 13-15 | 7 | 5.4 |
| 15 years and above | 4 | 3.1 |
| *Age of Respondent* | | |
| 18-23 | 4 | 3.1 |
| 24-28 | 8 | 6.2 |
| 29-33 | 14 | 10.8 |
| 34-38 | 48 | 36.9 |
| 39 and above | 56 | 43.1 |
| *Type of Business* | | |
| Trading | 38 | 29.2 |
| Craftsmanship | 21 | 16.1 |
| Services | 60 | 46.1 |
| Manufacturing | 11 | 8.6 |
| *Educational Level* | | |
| No formal education | 6 | 4.6 |
| Primary | 8 | 6.2 |
| Junior High School | 81 | 62.3 |
| Secondary/College | 14 | 10.8 |
| Tertiary | 21 | 16.2 |

The study conducted a descriptive analysis of the independent variables of tax education and tax compliance as a dependent variable. The descriptive analysis is interpreted using mean scores. The mean scores are generated base on the perception scale on a five-point Likert scale. From the descriptive means, respondent's responses to questions show there is a high level of tax knowledge. The research item with the lowest mean under the tax knowledge variable is "I am able to conduct self-assessment due to tax education". The research item with the highest mean is "tax education has made me aware that I could be prosecuted for non-compliance". The highest mean under the knowledge of tax responsibilities and rights was 3.923, which signifies that respondents do not strongly agree they are knowledgeable about tax responsibilities and rights but agree they have high knowledge of such issues.

On the knowledge of employable income, the means scores were the lowest among all the other items used on the survey. On average, knowledge of employable income which represents the knowledge of personal taxable income recorded its highest mean score of 3.731. However, the means imply that respondents agree to have some level of knowledge on their personal income.

## Table 2: Descriptive Statistics of Variables

| Indicator | Tax Knowledge Items | N | Mean | Std |
|---|---|---|---|---|
| | *Knowledge of Tax Rights and Responsibilities* | | | |
| RR1 | I am educated on the various rights and responsibilities regarding tax issues | 130 | 3.869 | .910 |
| RR2 | Tax education has made me aware of my responsibilities to pay my taxes | 130 | 3.874 | .657 |
| RR3 | The tax education i have received has made me know that tax rates are fair and justified | 130 | 3.631 | 1.094 |
| RR4 | Tax education has made me aware of the benefits and privileges of paying taxes | 130 | 3.923 | .993 |
| | *Knowledge of Employment Income* | | | |
| EI1 | My education on taxes has enabled me to estimate my personal income | 130 | 3.731 | .963 |
| EI2 | Tax education has helped me conduct self-assessment of My personal income | 128 | 3.539 | 1.034 |
| | *Knowledge of Business Income* | | | |
| BI1 | Tax education has enabled me to estimate my business revenue and profit | 130 | 3.869 | .901 |
| BI2 | I have been educated on how to keep my accounting books | 130 | 3.854 | .818 |
| BI3 | I have been educated to seek for assistance in keeping financial records | 130 | 3.969 | .871 |
| BI4 | Tax education has made me aware of the need to prepare accounts and present them tax officers | 130 | 3.839 | .886 |
| BI5 | I have been able to conduct self-assessment due to tax education | 130 | 3.500 | .950 |
| | *Awareness of Sanctions* | | | |
| SPF1 | The education I received on tax has made me aware of the sanctions of non-compliance | 130 | 3.939 | .904 |
| SPF2 | Tax education has made me aware my business could be closed down for non-compliance | 130 | 4.078 | .838 |
| SPF3 | Tax education has made me aware that I would be made to pay fines for non-compliance | 130 | 4.055 | .759 |
| SPF4 | Tax education has made me aware that I could be prosecuted for non-compliance | 130 | 4.431 | 4.459 |
| | *Tax Compliance* | | | |
| TC1 | I have been able to pay my taxes voluntarily | 130 | 3.959 | .806 |
| TC2 | I pay my taxes without thinking of how to reduce them | 130 | 3.977 | .902 |
| TC3 | I have always filed my returns to the appropriate tax authorities without audits | 130 | 3.992 | .952 |
| TC4 | I have always paid all my taxes (obedience to tax payment) | 130 | 3.915 | .981 |
| TC5 | I know am doing the right thing by paying my taxes | 130 | 4.077 | .985 |

The knowledge of business revenue and income was also analysed. This is important in assessing the knowledge of respondents regarding the income of their businesses, on which tax is paid. This relates to tax knowledge on self-assessment by business owners on their projections of expenditure and income. The study found that there is a high level of agreement on items measuring knowledge on the income of their businesses by respondents. However, the lowest mean in the entire study was recorded under this variable "I have been able to conduct self-assessment due to tax education".

Respondent's knowledge of tax offences and penalties was also considered. This variable recorded the highest means among the tax knowledge variables. Respondents agreed they are knowledgeable about the awareness of sanctions. The highest mean recorded under this variable and for the entire study was "tax education has made me aware that I could be prosecuted for non-compliance". This demonstrates the awareness of the legal consequences for failing to comply with the tax laws of the country.
The perception of respondents on their level of tax compliance was also analysed. The results suggest that there is a high level of tax compliance among respondents. Respondents highly agreed (mean=4.077) with the question "I know I am doing the right thing by paying my taxes", which demonstrates their willingness to pay their taxes voluntarily.

### Measurement Model

The relationship between tax knowledge dimensions and tax compliance was tested using partial least squares (PLS) approach, specifically Smart PLS developed by Ringle et al. (2005). The analysis was performed using smart PLS. To develop the measurement model, a reliably (indicator reliability and interned consistency reliability) and validity (convergent validity and discriminant validity) tests were performed. The details are found in Table 3. To test for internal consistency reliability, the study used the composite reliability values as proposed by Hair et al. (2012). This is preferred over the Cronbach's Alpha in PLS-SEM. The composite reliability of the variables used in this study is higher than 0.7 as proposed by Bagozzi and Yi (1988). This means that the study variables demonstrate a higher level of consistent reliability. For indicator reliability, apart from *BI3 and BI5* under the knowledge of business income variable, all indicators measuring the variables were formed to be higher than 0.4. Indicator BI3 and BI5 were deleted. The remaining indicator values are higher than the minimum acceptable level of 0.4 as recommended by Hulland (1999).

To check for convergent validity, the Average Variance Extracted (AVE) was used. Bagozzi and Yi (1988) recommend that AVE must be 0.5 or higher. The study results indicate that all the variables have an AVE higher than 0.5. This means that a convergent validity is confirmed in this study. The Fornell-Lacker test (see Table 4) was performed to examine the discriminant validity of the variables. To do this, the Square root of the AVE of a variable is used to compare with the correlations with other variables. Discriminant validity is achieved when the Square root of the AVE is higher than the correlational values with other variables (Wong, 2013). The Square root of the AVE which is manually calculated were found to be higher than that of all the correlations (see table 4). For instance, the square root of AVE of knowledge of business income (0.792) is higher than the correlation between it and the other variables. This is the case for all other variables in the model. The correlation between the variables was found to be positive. This implies that all the variables used have a positive relationship with each other.

### Table 3: Reliability and Validity

| Variables | Indicators | Loadings | Composite Reliability | AVE |
|---|---|---|---|---|
| Knowledge Business Income | BI1 | 0.756 | | |
| | BI2 | 0.818 | 0.860 | 0.627 |
| | BI4 | 0.881 | | |
| Knowledge of Employment Income | EI1 | 0.843 | 0.789 | 0.652 |
| | EI2 | 0.770 | | |
| Knowledge of Tax Rights and Responsibilities | RR1 | 0.756 | | |
| | RR2 | 0.802 | | |
| | RR3 | 0.788 | 0.862 | 0.609 |
| | RR4 | 0.775 | | |
| Awareness of Sanctions | SPF1 | 0.790 | | |
| | SPF2 | 0.707 | 0.854 | 0.594 |
| | SPF3 | 0.756 | | |
| | SPF4 | 0.825 | | |
| Tax Compliance | TC1 | 0.765 | | |
| | TC2 | 0.818 | 0.905 | 0.657 |
| | TC3 | 0.864 | | |
| | TC4 | 0.738 | | |
| | TC5 | 0.859 | | |

### Table 4: Correlation and Fornell-Lacker Criterion Analysis

| | Knowledge of Bus Income | Knw of Emp Income | Knw of Rights and Res | Awareness of Sanctions | Tax Compliance |
|---|---|---|---|---|---|
| Knowledge of Business Income | **0.792** | | | | |
| Knowledge of Employment Income | 0.5218 | **0.807** | | | |
| Knowledge of Rights and Responsibilities | 0.6332 | 0.7276 | **0.780** | | |
| Awareness of Sanctions | 0.6554 | 0.4963 | 0.6797 | **0.771** | |
| Tax Compliance | 0.4438 | 0.4714 | 0.5607 | 0.5406 | **0.810** |

**Structural Model**

The structural model to test for the relationship between tax knowledge dimensions and tax compliance was performed. The study hypothesised that four tax knowledge dimensions (knowledge of tax rights and responsibilities, knowledge of employment income, knowledge of business income, and awareness of sanctions) have a positive significant relationship with tax compliance (H1 to H4).

The analysis performed showed that the coefficient of determination $R^2$ is 0.371 for tax compliance. This means that the four dimensions of tax knowledge (knowledge of tax right and responsibility knowledge of employment income, knowledge of business income, and awareness of sanctions explained 37.1% of the variance in tax compliance. Using a significant level of 5%, and t- statistics larger than 1.96, the found that three of the tax knowledge dimensions namely knowledge of tax rights,

knowledge of employment income, and responsibilities and awareness of sanctions are statistically significant with tax compliance. The findings show that awareness of sanctions is the strongest predictor of tax compliance. This is followed by knowledge of tax rights and responsibilities. The study reveals that knowledge of business income did not have a significant relationship with tax compliance.

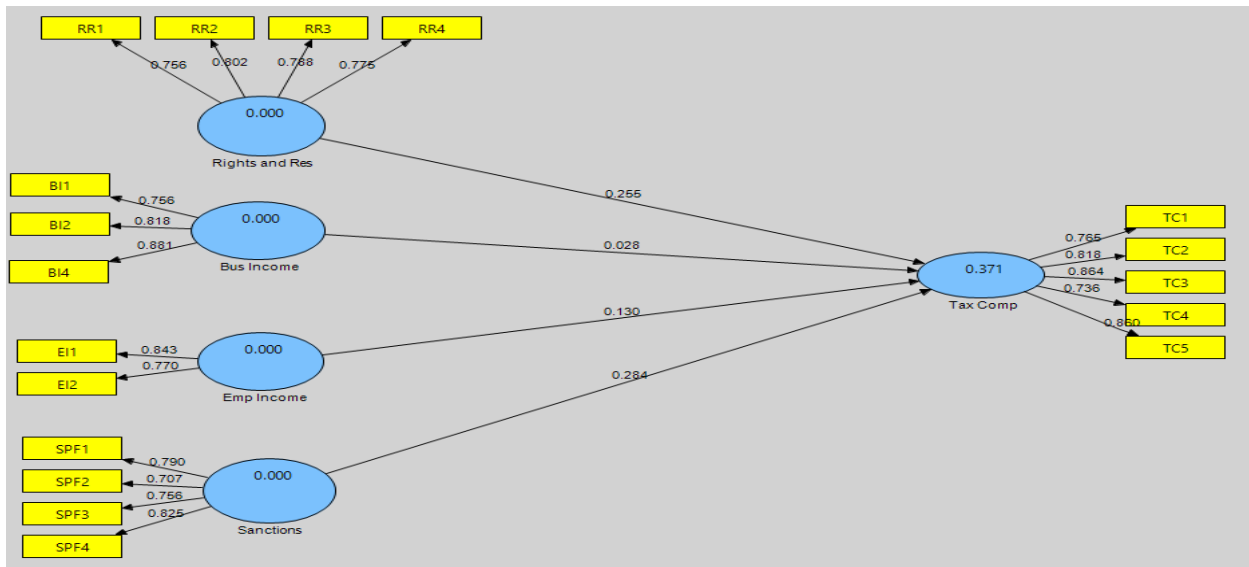**Figure 2: Structural Model and Path Coefficient**



**Table 5: T-Statistics of Path Coefficients**

| Hypothesis | Relationship | *B-estimate* | t-test | Decision |
|---|---|---|---|---|
| *H1* | Knowledge of Rights and Responsibility → Tax Compliance | 0.255 | 3.847 | Supported |
| *H2* | Knowledge of Employment Income → Tax Compliance | 0.130 | 2.456 | Supported |
| *H3* | Knowledge of Business Income → Tax Compliance | 0.028 | 0.436 | **Not Supported** |
| *H4* | Awareness of Sanctions → Tax compliance | 0.284 | 5.113 | Supported |

**DISCUSSIONS OF FINDINGS**

The aim of the study was to examine the effect of tax knowledge and tax compliance among SMEs in Ghana. The study included small business managers who have been educated by the Ghana Revenue Authority. Tax knowledge was examined to determine how SME managers understand the tax system. Tax compliance measure sought to examine compliance with their tax obligations. The study proposes that dimensions of tax knowledge influence the level of tax compliance. On the level of tax knowledge, the study also found that the knowledge of various tax issues included in the study was high. The responses on the knowledge of employable income and business income were moderately high. On average, total tax knowledge is high among respondents as they agreed to the research question items that were asked them. The study also sought to determine the level of tax compliance among business owners and managers. The level of tax compliance was found to be very high among respondents. The mean scores were very high signifying the agreement to questions on tax compliance by respondents. The respondents believed that they have the intention to continue paying their taxes.

For the relationship between dimensions of tax knowledge and tax compliance, the study found that knowledge of tax rights and responsibilities, knowledge of employment income, and awareness of sanctions were statistically significant with tax compliance. This implies that these are the three most important determinants of tax compliance. Knowledge of business income was not found to have a significant relationship with tax compliance. The study found that there is a weak relationship between tax knowledge and tax compliance, but found that there a significant relationship between tax knowledge and tax compliance. This result supports findings of studies that revealed that tax knowledge has a significant and positive relationship with tax compliance (Mukhlis et al. 2015). This result is however different from the findings of Palil and Mustapha (2011), which revealed that knowledge of rights and responsibilities had a negative relationship with tax compliance. However, Palil and Mustapha (2011) found that knowledge of tax rights and responsibilities have a significant relationship with tax compliance, which supports the result of this study. The study found that awareness of sanctions (offences, fines, and penalties) has a significant relationship with tax compliance as found in the study of Palil and Mustapha (2011). The results that knowledge of employment income is a predictor of tax compliance supports the finding of Palil and Mustapha (2011). However, knowledge of business income was not found to be a predictor of tax compliance.

**Implications**

The study results lead to a number of implications. Based on the findings suggesting an effect of tax knowledge on tax compliance, there is the need to adopt a tax education strategy that embraces a multiplicity of knowledge. The various tax education initiatives must focus on many aspects of the tax system. A focus must be given to education on general tax rights and responsibilities. Also, SME owners must be made aware of the sanctions that can be applied for tax non-compliance. These dimensions of tax knowledge will enhance tax compliance among SME business owners. It is proposed that tax authorities must intensify campaign on improving business owner's knowledge of their business income. Also, the education on taxes must be done using all available mediums including personal visits to business premises, formal tax educational seminars, the use of mass media, and involvement of other government and private organisations. The duty of tax education cannot be the sole responsibility of the GRA and therefore the institution must partner with other relevant organisations. This is because the study found level of tax knowledge among SME owners is high but there is the need to improve it. The tax authorities must intensify the tax education efforts as this is very helpful in educating tax-payers. The current tax strategy must have education as one of its core pillars as this is a predictor of tax compliance.

**Future studies**

This study could be replicated in other jurisdictions across the country. The impact of tax education must be assessed after tax education to measure its impact on tax compliance. Adopting such a research strategy will help assess the effect of tax knowledge on tax compliance. Other tax knowledge issues such as personal relief, child relief, rebates, and dividends and interests could be studied by researchers. Future studies could conduct a comparative analysis of the level of tax compliance before and after tax education. Future studies could consider other factors affecting tax compliance such as business owner behaviour and attitudes, the profitability of business, culture, religion, the enforcement of laws, and the nature of the tax regime. Tax knowledge and tax compliance studies could be replicated in other developing countries, especially in sub-Saharan Africa.

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