# Ordinal Logit Modelling of Socio-Economic Determinants of Tax Evasion Among SMEs in Ghana: Evidence from Sunyani Municipality

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# ABSTRACT

Taxes consist of direct or indirect taxes and may be paid in money or as its labour equivalent. Taxes are mostly difficult to take from the informal sector since individuals must honour them through self-payment. Due to this, some individuals and cooperate bodies fails to pay voluntarily thereby evading tax. Thus, this paper sought to assess the key determinants of tax evasion and its effect on the Ghanaian economy based on evidence from Sunyani Municipality. The study therefore employed primary source of data collection. Cluster sampling technique was first utilized to group the respondents and subsequently applied systematic random sampling to select the final sample of 250 respondents. The results indicated that nine key determinants of tax evasion were identified. These include waste and corruption by government, complex tax system, high tax burden, compromised tax agents, inadequate tax education, non-consideration of taxpayers' view, lesser punishment for tax evaders, owners' unawareness to pay tax and the notion of only the rich pays tax. However, seven of these tax evasion determinants were significantly affecting or influencing the Ghanaian economy whereas the remaining two determinants of tax evasion were found not to contribute significantly, in terms of effect, on the economy. Also, the finding shows that tax evasion does not really depend on the type of business engaged in by SME owners.

**Keywords:** Determinant, Ordinal Logit Model, Smes, Socio-Economic, Tax Evasion.

#### I. INTRODUCTION

Tax is from a Latin word Taxare, which means "to assess". Defined as a contribution to state income which is compulsory levied by the government or authority on workers income and business profits or added to the cost of some goods and services. Taxes are levied in almost every country of the world. It is through these taxes the state is able to finance most of its expenditure. Taxes consist of direct or indirect taxes and may be paid in money or as its labour equivalent. Taxes are mostly difficult to take from the informal sector since individuals must honor them through self-payment. Due to this, some individuals and cooperate bodies fails to pay voluntarily thereby evading tax Julia (2019).

Julia (2019) defines tax evasion as an illegal activity in which a person or entity deliberately avoids paying a true tax liability. Such people who are found evading taxes are punished according to the laws of the country of a defaulting entity or individual. Most of this evasion is found in Africa due to lack of proper structures in place to get data on individuals or entities. Tax evasion is part of an overall definition of tax fraud, which is illegal intentional nonSubmitted: August 15, 2022

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payment of taxes. Fraud can be defined as "an act of deceiving or misrepresenting," and that is what individuals and entities evading taxes do. As a result of this evasion, states fail to mobilize targeted revenues for the benefit of development. Laws that are meant to punish defaulting individuals or entities are mostly not enforced enough to serve as a deterrent to others. Some of the Arab nations do not take personal income tax. Countries such as Saudi Arabia, Bahamas, Baharain, Qatar, Kuwait, and some few others.

According to Institute of Fiscal Studies (2016), taxes were first introduced in Ancient Egypt around 3000-2800 BC. The purpose for the introduction of tax in the then ancient Egypt was to fund grain warehouses, building projects including the pyramid and any other they deem necessary. The tax grain was stored and used at a time of hardships to feed public workers and poor citizens. Ancient Egypt had no money so their taxes were levied on harvest and properties. In other parts of the world in the United Kingdom, tax was introduced in the year 1799 by the then Prime Minister William Pitt the younger, as a temporally means to cover the cost of the Napoleonic wars. Pitt tax was from 1799-1802 when it was abolished by Henry Addington during the peace of Amiens. It was later reintroduced by Addington in 1803 when hostilities recommenced but was later abolished in 1816 a year after the battle of waterloo. Franklin (2002) Looked at the Tax system in UK and indicated that there was change of tax system over time. The current tax system in UK stands at 20%, 40% and 45% depending on the brackets on one's earnings. Total UK government forecast for the period 2016-2017 was £716.5 billion a representation of 36.9% of UK GDP. Which an approximate amount of £13,500 for an adult in the UK. This stated revenue was not generated only from Taxes.

Unlike the UK and ancient Egypt which started their tax system much earlier, the United State income tax was instituted in the year 1909 and was agreed on in February 1913. However, history went back as far further than one could imagine. Back in the Civil War, Congress passed the Revenue Act of 1861 which included a tax on personal incomes to use to defray some expenses incurred by the state. There was a repeal of the tax law ten years later but was not long. In 1894 a flat rate income tax was put in place. This flat rate later was considered as unconstitutional by the Supreme Court of U.S. The 16th amendment, ratified in 1913, eliminated this opposition by allowing the Federal Government to tax individuals' income without regard to the total population of each State (Terrell 2012). In the United States, a day is set aside as Tax Day marking the significance of the day. It is a colloquial term for the day in which individual income tax returns are due to be submitted to the federal government. Since 1955, for those living in the United States, Tax Day has typically fallen on April 15 (Wekipedia 2019).

The absence of proper systems in African countries has become a major limitation to the mobilization of tax domestically. Revenue targets which mostly tie to taxation have always fallen short in sub-Saharan Africa (SSA) making development a challenge. Sub-Saharan Africa tax receipts represented 14 percent of GDP in 2005, just marginally higher than in 1980's 13 percent of GDP. The low levels of SSA income generation are often due to the economic structure. It has a rather narrow tax base, especially for income taxes, a large share of GDP's difficult-to-tax informal activities, and tax administration weaknesses. SSA states face fiscal appeal (Keen 2009). The Kenya budget is largely finance by taxes they generate. Tax output in Kenya has improved dramatically in nominal terms by an average of around 24 per cent of the size of the economy over the last decade. That helped the government to finance 60 percent of the budget. Due to its importance, tax policy debates and decision-making becomes a critical issue to the public, to businesses and the economy at large owing to the varied impact that it will have on the entire economy (Mutua, 2012).

The Kenya population with an estimation of 49.7 million people and a GDP of 74.94 billion dollars in 2017, currently has a tax system that represents a two-tier government system comprising the national governments and 47 county governments following the 2010 passage of the new Constitution. The Constitution provides that the national government may maintain the power to levy taxes on all direct taxes, including income taxes and indirect taxes, namely; value added tax, excise duty and customs or import duty. At the other hand, the rights of the county governments to levy taxes would be limited to property taxes, entertainment taxes and other practicable taxes in this jurisdiction (Mutua, 2012).

Currently, Ghana has an estimated population of 31.07 million (GSS, 2021). It has a GDP of 72.26 billion dollars (IMF, 2019). In 1850 taxation was implemented at the colonial Gold Coast with the adoption of an Executive Council which had the power to enact laws subject to the approval of the Governor. In 1943 with the adoption of the Income Tax Ordinance the first colony wide income tax was imposed. The legislation was later integrated into the 1963 national investment bank act and repealed and replaced by 1985 amendments. It was introduced in Ghana to tax incomes of individuals and entities who earn income.

Unfortunately, in Ghana, the collection is challenged with a lot of setbacks resulting to tax evasion, avoidance, noncompliance with laws, etc. In 1952, the Income Tax (Amendment) ordinance was passed to rectify the shortcomings in the previous one. A consolidated edition was published in 1961 by Act 68. Personal income tax, cooperate tax and pay as you earn. These are some of the assessed taxes. Personal income tax applies to self-employed individuals who are expected in four equal installments to pay income tax at graduated rates. The current rates of federal income tax are valid as of January 2016. Cooperation tax is the tax charged by businesses at a rate of 25 percent on their income in the year (Ntiamoah, 2019).

A study by (Ntiamoah, 2019) Whether tax enforcement intentions of tax-registered self-employed persons are still driven by economic variables rather than by non-economic variables that are now at the core of tax compliance research was to be determined. A quantitative study design based on a survey of randomly selected 453 self-employed people from 15 Small Taxpayers Offices across the Greater Accra area was used. Examining the effect of tax identification number on revenue generation in south-west, Nigeria was a study by (Akinleye, 2019). The study population covered all the states in the Southwest zone of Nigeria, out of which three states namely Ekiti, Osun and the Ondo States were selected. Over a period of 10 years divided into Pre-TIN (2008-2012) and post-TIN, comprehensive secondary data were collected from the State Board of Internal Revenue of the sampled states from 2008-2017. The paper concluded that TIN's revenue generation has increased in Southwest, Nigeria. The study suggested carrying out periodic tests of the entire TIN-related network to identify and prevent abuse and other fraudulent activities. It was also proposed that government regulatory agencies notify taxpayers of the value of Tax Identification Number. An article on the effect of tax incentives on the growth of small and medium-sized enterprises (SMEs) in Rwanda was carried out. The population comprises 49,000 SMEs working in Nyarugenge district from the farming, manufacturing, services, and tourism sectors. A sample of 136 SMEs was estimated using sample size formula from Silovin and Yemen (2018). The study results showed that 75.7 percent of respondents agreed they know the tax rules, 78.7 percent agreed they know the tax benefits available to SMEs (Twesige, 2019).

An article written by (Noked, 2018) was Tax Evasion and Incomplete Tax Transparency. The article addresses the key incentives for tax avoidance in the age of automatic information exchange (AEOI) and examines different steps that can resolve these problems by increasing tax transparency. Nevertheless, while limited tax transparency is problematic, maximum tax transparency cannot be ideal. Tax evasion and inequalities was written to estimate the size and distribution of tax evasion in rich countries. The paper combined random audits. The research found out that tax evasion rises sharply with wealth, phenomenon random audits fail to capture. In Scandinavia, on average about 3 percent of personal taxes are evaded, but this figure rises to nearly 30 percent in the top 0.01 percent of the income distribution. Considering tax evasion increases dramatically the rise in inequality seen in tax data since the 1970s, demonstrating the need to step beyond tax data to capture revenue and income at the top, even in countries where tax enforcement is generally high (Alstadsæter, 2017). Some steps were identified and published by (Lynne, 2019) on ways to avoid the facilitation of tax evasion. Those include supplying information and daily instruction to company employees to be mindful of the tax avoidance consequences. The second danger is company with complicated tax planning systems, difficulties in identifying beneficial shareholders, customers with unsubstantiated assets or capital sources, and even offshore companies in jurisdictions with high levels of secrecy.

A comparative study of Ireland and South Africa was written by (Killian, 2004). The article explored the different approaches to tackling the problem, including the fines for non-compliance, improving search and discovery revenue forces, using amnesty to bring errant taxpayers into the net, including high-profile criminal prosecutions and other "name and shame" tactics, and appealing to taxpayers' ethics. The study concluded that, similarities in approach outweighs differences. Some amount studies have been undertaken on taxation and issues of tax evasions across the globe and the sub-region including Ghana. The issue of socio-economic factors which turn to influence tax evasion has not received serious scientific scrutiny in Ghana so far, therefore the need to ascertain those determinants as far as the Ghanaian economy is concerned.

#### II. MATERIALS AND METHODS

#### A. Research Design

The researcher adopted a case study as the specific type of research design for the study where a quantitative approach and a structured instrument was used to establish the determinants of tax evasion within the context of the Ghanaian economy. The argument for better construct validity since case studies can use more and more diverse indicators for representing a theoretical concept and for securing the internal validity of causal inferences and/or theoretical interpretations for these cases. This was based on the theoretical perspective which focused on the Cognitive Theory. The use of the Cognitive Theory here is to explain the key activities of the informal sector businesses' which constitute tax evasion as well as how it affects the economy. According to (Fritscher, 2009) the cognitive theory stipulates that, people perceive and interpret stimuli in their environment rather than reacting passively to those stimuli. Also, it is a learning theory of psychology that attempts to explain human behavior by understanding the thought

processes. "The assumption is that humans are logical beings making choices that make the most sense to them".

#### B. Scope and Area of the Study

The scope of the study was Ghana, and the study area was Sunayni municipality. The population of Sunyani Municipal, according to (Ghana Statistical Service, 2021), 147,982 representing 3.8% of the region's population. The economy of the municipality used to be predominantly agrarian. However, the upsurge of commercial, industrial, and service activities depicts potential diversification of the local economy. Currently the informal sector employs about 38% of the population in the Municipality (Ghana Statistical Service, 2021). The municipality has one major market day which is Wednesday (Nana Bosoma Market) and during this day a lot of people come from different part of the region to conduct their businesses.

#### C. Source of Data

For purpose of this study, primary data collection was employed. By using primary data, a survey of the study area was conducted to collect and collate information on the socioeconomic indicators of tax evasion in the context of the Ghanaian economy. A primary source of data involved firsthand information from the field or the study population using structured questionnaires.

#### D. Population, Sampling and Sample Size

For the purposes of this study, the researcher employed cluster sampling, as per the type and the location of the business at the Sunyani central market, and subsequently applied systematic random technique in sampling the respondents. Thus, the decision was informed by the nature and purpose of the study as well as making sure that respondents have equal chance of being selected. A total of 250 respondents were selected from over 700 business owners, in and around the Sunyani main market.

#### E. Instrument for Data Collection

Largely, a five-point Likert-scale type of close-ended questionnaire, and in some few instances, an open-ended questionnaire were the main instruments being used for data collection. Section A of the questionnaire entailed the demographic details of the respondent. Sections B and C of the questionnaire contained questions and statements which addressed the determinants of tax evasion within the context of the Ghanaian economy. The items on the questionnaire had options from which respondents were supposed to pick an answer that is best suited to the extent to which they agree with the statements (5 = strongly agree, 4= agree, 3= not sure, 2 = disagree, and 1 = strongly disagree).

## F. Reliability and Validity of Data

To ensure that the data collection instruments were actually measuring intended metrics (i.e. validity) and that there was consistency in the outcome relative to the instrument over a period, the reliability test was conducted using Cronbach's alpha threshold of 0.60.

#### G. Model Specification

The primary variable of interest was tax evasion among SMEs in Ghana using evidence from Sunyani municipality. It was ordinal in nature with five outcomes namely, strongly disagree, disagree, not sure (i.e. neutral), agree, and strongly agree. The appropriate choice of model for the analysis was, therefore, an ordinal logistic regression model (Maddala, 1983; McKelvery & Zavoina, 2010). The model generally is an extension of the binary-outcome model (binary logit or probit model) as noted in Greene (1990). Also, the model was noted as a natural extension of the binary-outcome model and therefore was defined as shown in (1) (Greene, 1990; Williams & Quiroz, 2019).

$$P(Y_i > j) = \frac{exp(X_i\beta - k_j)}{1 + [exp(X_i\beta - k_j)]},$$
(1)

For j = 1, 2, ..., M - 1,

Which implies

$$P(Y_i = 1) = 1 - \frac{exp(X_i\beta - k_1)}{1 + [exp(X_i\beta - k_1)]}$$
(2)

$$P(Y_i = j) = \frac{exp(X_i\beta - k_{j-1})}{1 + [exp(X_i\beta - k_{j-1})]} - \frac{exp(X_i\beta - k_j)}{1 + [exp(X_i\beta - k_j)]},$$
 (3)

For 
$$j = 2, ..., M - 1$$

$$P(Y_i = M) = \frac{exp(X_i\beta - k_{M-1})}{1 + [exp(X_i\beta - k_{M-1})]}$$
(4)

From (4),  $Y_i$  is a single choice in the ordered choices (strongly disagree, disagree, not sure (i.e., neutral), agree, and strongly agree),  $\beta_k$  are estimators of the ordinal logit and it is assumed that the random disturbance term follows a certain symmetric distribution with zero mean and 1 standard deviation such as the standard logistic distribution. The matrix X defines the determinants measured on everyone.

It is worth noting that there is no intercept term. Since the response outcome (tax evasion) is categorical, the approach is to fit the ordinal logit model, each one comparing a given determinant to strongly agree which is the referenced category.

The choice of this referenced category is verified by the fact that SME owners naturally strongly agree on tax evasion as of great concern in the Ghanaian society regardless of the Government efforts to collect tax. Thus, the model gives the general form for the probability that the observed (y = tax evasion) falls into category (j = strongly disagree, disagree, not sure (i.e., neutral), agree, and strongly agree), and the  $\beta$ 's are to be estimated with an ordinal logit model.

#### H. Hypotheses

 $H_{0A}$ : Determinants of tax evasion has no significant effect on the Ghanaian economy.

 $H_{1A}$ : Determinants of tax evasion has a significant effect on the Ghanaian economy.

 $H_{0B}$ : Tax evasion does not depend on the type of SME business operated.

 $H_{IB}$ : Tax evasion depend on the type of SME business operated.

#### III. RESULTS

The study found that there were more female SMEs owners

representing 162 (64.8%) of the total sample than their male counterparts which represents 88 (35.2%). Also, most of the SME owners were within the age group 50–59 years which represents 108 (43.2%) followed by those who were 60 years, and above which recorded 61 (24.4%). The least age group was 20–29 years which represents only 11 (4.4%), see appendix. Again, majority, representing about 120 (48%) of the SME owners were married. The next highest marital status was owners within the single bracket which represents about 58 (23.2%). A few of the respondents were widows recording about 15 (6.0%).

Moreover, about 120 (49.6%) of the respondents had their education up to the Senior High level. The next highest was those with no formal education resenting about 54 (21.6%) of the respondents. The least was respondents with tertiary education which represents about 20 (8.0%).

Also, about 172 (68.8%) of SME owners had just one stall, with about 60 (24.0%) of them operating two stalls. The least number of stalls operated by an SME owner was five which represents just 1 (0.4%). Again, most of the SME owners employs only one employee which represents about 129 (51.6%). The next highest number of employees per SME owner was two which represents about 46 (18.4%). The lowest number of people who could be employed by an SME owner was five employees which recorded about 16 (6.4%). Meanwhile, majority of the SME owners confirmed haven registered with Ghana Revenue Authority (GRA) which represents about 157 (62.8%) whereas 93 (37.2%) of the owners said they have not registered with GRA.

It was also observed that SMEs who engage in both the service-oriented business and distribution and retail business almost recorded the same responses of 38.6% and 38.4% respectively. Those engaged in manufacturing recorded about 19.6%. The least type of business was others which represent about 7.2%. Meanwhile, SMEs with the highest average daily sales was GHS 501.00 and above representing about 25.6%. The next highest average daily sales of SMEs were from GHS 201.00 to GHS 300.00 which recorded about 24.4%. The least average daily sales were SMEs who made less than GHS 100 which represents 10%.

It can be seen from Table I that, the reliability and validity of the instrument used in gathering data for this paper was assessed using the Cronbach's alpha, which theoretical threshold is 0.60 or 60%, and correlation test respectively. Based on the Table I, the Cronbach's alpha of 0.798 (79.8%) was more than the threshold of 0.60 (60%). Therefore, it showed that there was high amount of internal consistency for the measurement used in the questionnaires administered to the respondents of this study. Hence, the questions utilized for the study were stable and consistent with the objectives of the study. Also, the correlation test/coefficient ( $\gamma$ =0.811) was used to assess the validity of the questionnaire.

From Table II, it can be observed that the p-value (0.062) is greater than the significance level (0.05). This means that we fail to reject the null hypothesis that the fitted model is consistent with the observed data. Thus, it can be concluded that the fitted is good, especially for the data utilized in this study at 95% confidence level, which implies a good model.

The R-square (Nagelkerke = 95.2%), as seen in Table III, indicates that the independent variables (i.e. the key determinants) explains most of the proportions of variation in

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the dependent variable (tax evasion). There is however about 4.8% of the variability, which is unaccounted for, which may be due to research related errors.

TABLE II: THE GOODNESS-OF-FIT TEST				
Parameter	Chi-square	df	Pr(> z )	
Pearson	404.634	249	0.062	
Deviance	322.092	249	0.698	

TABLE I: RELIABILITY AND VALIDITY TEST			TABLE III: PSEUDO R-SOUARE		
Cronbach's alpha	Cronbach's alpha based on standardized items	Ν	Cox and Snell	Nagelkerke	McFadden
0.798	0.801	31	0.885	0.952	0.010

TABLE IV: ORDINAL LOGIT MODEL						
Variables	Estimate	Std. Error	Pr(> z )	95% Confidence	95% Confidence Interval	
				Lower Bound	Lower Bound	
[Evasion = 1]	-36.768	3.120	0.006	-46.692	16.155	
[Evasion = 2]	-7.556	0.745	0.000	-9.017	-6.096	
[Evasion = 3]	-4.391	0.648	0.000	-5.661	-3.120	
[Evasion = 4]	-0.218	0.420	0.004	-1.041	0.606	
[Waste=1]	26.938	5.122	0.005	-16.991	1.866	
[Waste=2]	0.746	1.131	0.010	-1.471	2.963	
[Waste=3]	-0.022	0.596	0.030	-1.191	1.146	
[Waste=4]	0.069	0.482	0.007	-0.876	1.013	
[Unaware=1]	-14.895	1.406	0.074	-10.024	1.235	
[Unaware=2]	-2.942	0.951	0.092	-4.806	-1.078	
[Unaware=3]	-1.467	0.648	0.089	-2.736	-0.197	
[Unaware=4]	-1.818	0.484	0.075	-2.768	-0.869	
[Rich=1]	1.467	1.990	0.461	-2.433	5.368	
[Rich=2]	0.444	0.980	0.650	-1.477	2.365	
[Rich=3]	-0.198	0.685	0.773	-1.540	1.144	
[Rich=4]	-0.105	0.495	0.833	-1.074	0.865	
[Complex=1]	-10.166	1.404	0.008	-6.291	1.958	
[Complex=2]	0.135	1.436	0.025	-2.680	2.949	
[Complex=3]	1.371	0.773	0.006	-0.145	2.886	
[Complex=4]	1.215	0.553	0.028	0.131	2.299	
[High tax=1]	-22.250	7.122	0.007	-17.179	1.678	
[High tax =2]	0.328	1.333	0.006	-2.284	2.940	
[High tax=3]	0.967	0.633	0.026	-0.272	2.207	
[High tax =4]	1.423	0.541	0.009	0.363	2.483	
[Agent=1]	-1.400	2.151	0.015	-5.617	2.816	
[Agent=2]	1.302	1.042	0.021	-0.739	3.343	
[Agent=3]	0.416	0.686	0.044	-0.928	1.761	
[Agent=4]	0.291	0.449	0.018	-0.590	1.171	
[Tax educ=1]	-5.124	1.699	0.003	-8.453	-1.795	
[Tax educ=2]	-2.139	0.977	0.029	-4.054	-0.225	
[Tax educ=3]	-3.484	0.750	0.000	-4.954	-2.013	
[Tax educ=4]	-1.331	0.506	0.009	-2.323	-0.339	
[Views=1]	-17.999	3.257	0.001	-12.757	1.758	
[Views=2]	-4.528	1.243	0.000	-6.964	-2.092	
[Views=3]	-0.466	0.633	0.044	-1.707	0.774	
[Views=4]	0.491	0.515	0.041	519	1.501	
[Punishment=1]	1.406	1.40	0.001	-1.740	4.520	
[Punishment=2]	-5.203	1.325	0.000	-7.799	-2.607	
[Punishment=3]	-3.862	0.812	0.000	-5.453	-2.271	
[Punishment=4]	-3.183	0.620	0.000	-4.398	-1.969	

From Table IV, seven out of the nine key determinants dimensions of tax evasion were statistically significant in influencing or affecting the Ghanaian economy. These key determinants include waste and corruption by government, complex tax system, high tax burden, compromised tax agents, inadequate tax education, non-consideration of taxpayers' view and lesser punishment for tax evaders. Meanwhile, SME owners who agree to waste and corruption by government are more likely to assign higher ratings on tax evasion on the economy than their counterparts who disagree.

Also, respondents who agree on the complex tax system are more likely to assign higher ratings for tax evasion on the economy than SME owners' who think otherwise. Again, owners who agree on the dimension of high tax burden are more likely to assign high ratings for tax evasion impact on the economy than those who disagree. Moreover, SME owners who agree on the determinant of compromised tax agents are more likely to assign higher ratings for tax evasion impact on the economy than their counterparts who just disagree.

However, key tax evasion determinants such as owner's unawareness to pay tax and the notion of only the rich pays tax were each not statistically significant. This means that each of these key tax evasion determinants does not significantly influence or affect the Ghanaian economy.

From Table IV, it is noted that the p-value (0.458) is more than the margin of error (0.05). This indicates that there is no sufficient evidence to reject the null hypothesis.

TABLE VI: TAX EVASION DEPENDS ON TYPE OF SME BUSINESS

Chi-square	df	Pr(> z )
11.850	12	0.458

Therefore, the researcher fails to reject the null hypothesis and says that tax evasion is independent of type of business operated by SME owners.

This means that irrespective of the type of business engaged in by SME owner, he/she could still evade tax.

The study also noticed that about 38% of SME owners agreed that, a reduced tax rate in the current tax system can be used as a means of curbing tax evasion in the Sunyani municipality and Ghana as a whole. Also, about 29.6% of SME owners strongly agreed that, a reduced tax rate is key in curbing tax evasion. The least response option of SME owners was not sure which represents about 16%.

#### IV. DISCUSSIONS

The findings of this research indicated that, there were more female SMEs owners representing 162 (64.8%) of the total sample than their male counterparts of 88 (35.2%). Also, most of the SME owners were within the age group 50–59 years which represents 108 (43.2%). Again, it was found that majority (48%) of the SME owners were married. Moreover, about 49.6% of the respondents had their education up to the Senior High level. Also, it was seen that about 68.8% of SME owners had just one stall, with about 24.0% of them operating two stalls. Again, most (51.6%) of the SME owners employs only one employee. Meanwhile, majority (62.8%) of the SME owners confirmed haven registered with the requisite tax agencies whereas 37.2%) of the owners said they have not registered.

It indicates from the findings that nine key determinants of tax evasion were identified. These include waste and corruption by government, complex tax system, high tax burden, compromised tax agents, inadequate tax education, non-consideration of taxpayers' view, lesser punishment for tax evaders, owner's unawareness to pay tax and the notion of only the rich pays tax.

However, seven of these tax evasion determinants including waste and corruption by government, complex tax system, high tax burden, compromised tax agents, inadequate tax education, non-consideration of tax payers' view, lesser punishment for tax evaders were significantly affecting or influencing the Ghanaian economy whereas the remaining two determinants of tax evasion; owners unawareness to pay tax and the notion of only the rich pays tax were found not to contribute significantly, in terms of effect, on the economy. Moreover, irrespective of the type of business operated by SME owner, he or she could till engage in tax evasion. Thus, tax evasion does not depend on the type of SME business. Also, the way forward to curb tax evasion in the current tax administration as confirmed by SME owners in decreasing order are developmental oriented spending by the government, reduced tax rate, an increase in tax education, enforcement of penalties on those who evade tax and computerized tax administration structure.

The results of (Ameyaw 2016) showed that taxation and fiscal administrative, economic, demographic, and educational level are the main factors hindering tax

compliance. The findings of their research agree and fall in line with this paper that, educational level of taxpayers is a contributing determinant to tax evasion. Their research however used some other different variables as compared to what has been used in this article. It, therefore, recommended the need for agencies responsible for taxation to do more of education to sensitized taxpayers. An Investigation into Tax Evasion in Ghana conducted by (Amoah, 2014). Their results indicated that, large portion of the money collected is wasted by government and other state officials and turns to justify the evasion of tax since the money collected gets into the pockets of some individuals. The finding of their research is in line with this research that, waste of taxes by politicians is a contributory factor to tax evasion. Other agreeing determinants from (Amoah et al., 2014) and this research is the issue of high tax burden. Over 48.7% disagree that tax evasion is right if tax rates are too high which is in line with this paper that, high tax burden is a significant contributing determinant to tax evasion.

Results of inferential statistics by (Deb 2017) show the influence of selective demographics on tax perception and tax evasion, with other factors such as provisions for penalty and prosecution and rates of tax also influencing the taxpayers' decisions. While acknowledging a few shortcomings. Two of the determinants in their study also show the influence of high tax burden and lesser punishment to tax evaders which is in agreement with this study. Their research recommended that, laws regulating taxation should be harder enough to deter people from evading taxes.

# V. CONCLUSION

In conclusion, it indicates from the findings that nine key determinants of tax evasion were identified. These include waste and corruption by government, complex tax system, high tax burden, compromised tax agents, inadequate tax education, non-consideration of taxpayers' view, lesser punishment for tax evaders, owners' unawareness to pay tax and the notion of only the rich pays tax.

However, seven of these tax evasion determinants were significantly affecting or influencing the Ghanaian economy whereas the remaining two determinants of tax evasion were found not to contribute significantly, in terms of effect, on the economy. Also, the finding shows that tax evasion does not depend on the type of business engaged in by SME owners.

Finally, it was noted that the way forward to curb tax evasion in the current tax administration, as confirmed by SME owners, in decreasing order, include developmentally oriented spending by the government, reduced tax rate, increase in tax education, enforcement of penalties on those who evade tax and instituting computerized tax administration structure to eliminate human involvement.

# CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

#### References

- Akinleye, G. T., Olaoye, F. O., & Ogunmakin, A. A. (2019). Effect of tax identification number on revenue generation in Southwest Nigeria. *Journal of Accounting and Taxation*, 11(9), 170-177.
- Alstadsæter, A., Johannesen, N., & Zucman, G. (2017). Tax Evasion and Inequality. NBER Working Paper No. 23772., NBER Program(s):Law and Economics, Public Economics, Political Economy, Issued in September 2017.
- Ameyaw, D., & Dzaka, D. (2016). Determinants of Tax Evasion: Empirical Evidence from Ghana. Morden Economy, 7, 1653-1664.
- Amoah, R., Yeboah, S. A., & Amaning, N. (2014). An Investigation into Tax Evasion in Ghana. *International Journal of Empirical Finance*, 2(3), 2014, 115-122.
- Deb, R., & Chakraborty, S. (2017). Tax perception and tax evasion, Journal of SAGE. https://doi.org/10.1177/2277975217701363.
- Franklin, B. (2002). Taxes in the Ancient World. Almanac, 48(28).
- Fritscher, B., & Pigneur, P. (2009). Supporting business model modelling: A compromise between creativity and constraints International Workshop on Task Models and Diagrams Springer, Berlin, Heidelberg.
- Ghana Statistical Service, (2021). Population and housing census report.
- Greene Jr., E. D. (1990). The logic of university students' misunderstanding of natural selection. *Journal of Research in Science Teaching*, 27(9), 875-885. https://doi.org/10.1002/tea.3660270907
- Institute for fiscal studies. Autumn Statement 2016: IFS analysis 24th November, 2016.
- International monetary fund, 2019 report.
- Julian, K. (2019). Definition of Tax Evasion. Investopedia. Aug 7, 2019.
- Keen, M., & Mansour, M. (2009). Revenue Mobilization in Sub-Saharan Africa: Challenges from Globalization. IMF working paper, WP/09/157.
- Killian, S. & Kolitz, M. (2004) 'Revenue approaches to Income Tax Evasion: a comparative study of Ireland and South Africa'. *Journal of* Accounting, Ethics and Public Policy, 4(4), 235-257.
- Maddala, G.S. (1983). Maddala G.S.Limited Dependent and Qualitative Variables in Econometrics. *Cambridge University Press, New York*. 401-410.
- McKelvey, R.D. & Zavoina, W. (2010). A statistical model for the analysis of ordinal level dependent variables. *Journal of Mathematical Sociology*, 4(1), 103-120. https://doi.org/10.1080/0022250X.1975.9989847.
- Mutua, J. M. (2012). A citizen's handbook on taxation in Kenya. Published by Institute of Economic Affairs With the support of International Budget Partnership.
- Noked, N. (2018). Tax Evasion and Incomplete Tax Transparency. *Laws* 2018, 7(3), 31; https://doi.org/10.3390/laws7030031.
- Ntiamoah, J. A., Sarpong Jnr, D., & Winful, E. C. (2019). Do economic variables still influence tax compliance intentions of self-employed persons in developing economies? Evidence from Ghana. *Journal of Accounting and Taxation*, 11(9), 155-169.
- Terrell, E. (2012). History of the US Income Tax. Business Reference Services, Reproduction number: LC-USZ62-84088.
- Twesige, D., & Gasheja, F. (2019). Effect of tax incentives on the growth of small and medium-sized enterprises (SMEs) in Rwanda: A case study of SMEs in Nyarugenge district. *Journal of Accounting and Taxation*, 11(5), 89-98.
- Williams, R. A., & Quiroz, C. (2019). Ordinal Regression Models. In P. Atkinson, S. Delamont, A. Cernat, J.W. Sakshaug, & R.A. Williams (Eds.), SAGE Research Methods Foundations. doi: 10.4135/9781526421036885901.

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