MODELLING THE CAUSES OF TAX DEFAULT AMONG SMALL AND MEDIUM SCALE ENTERPRISES (SMEs) IN THE TAMALE METROPOLIS OF GHANA

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Abstract

The study examined the factors that have a higher potential for tax default among Small and Medium Scale Enterprises (SMEs) such as high tax rates on SMEs with their relatively low income levels, complex tax filing procedures, lack of proper tax education, high illiteracy rate among SMEs, Poor record keeping, multiple taxation and under declaration of income. The logistic regression model was used in this study to estimate the effect of the statistically significant factors on tax default. The findings revealed that the three most significant factors accounting for tax default among SMEs are the kind of SMEs, inadequate tax education by tax authorities, and multiple taxation. It is therefore recommended that SMEs should be adequately educated on the importance of tax to the state and be encouraged to pay tax to IRS and other mandatory agencies for the development of the Nation. Government as a policy should make tax payment attractive and unavoidable by both the informal and formal sectors.

Keywords: Tax Default, Logistic Regression, SMEs

Introduction

Taxes are used to finance development projects and it is the duty of every citizen to fulfil his/her tax obligation to the state, though this is not voluntary. Funds provided through taxation have been used by states and their functional equivalents throughout history to carry out many functions, such as the enforcement of law and order, protection of property, building economic infrastructure and the operation of government itself.

Taxation is therefore, a major fiscal tool in mobilizing government revenue for efficient and effective planning and directing investment and for that matter proper running of the economy. It has important impacts on many parts of the economy including impacts on firm creation and developing of the informal sector particularly the SMEs.

In most countries, conventionally defined legal taxes and levies constitute a significant proportion of GDP and finance a major part of government expenditure. It is therefore essential that tax systems be designed to achieve the appropriate trade-offs among revenue generation, allocation, efficiency, equity, and administration and compliance costs.

The economy of Ghana is largely made up of individual and small scale enterprises. That sector makes significant contribution to the Gross Domestic product (GDP), which, if taxed, could increase government internally generated revenue. The main source of employment in Ghana is the informal sector (SMEs) which provides employment opportunities for at least 80% of the Labour force (ISSER, 2003). However, less than 27% of domestic tax revenue is generated from that sector (Adam, 2009).

If the SMEs GDP contribution could be translated into tax revenue, government revenue could make significant appreciation. With the focus of successive and present governments in the private sector (which is dominated by the SMEs) as the engine of development, it can be suggested that the sector will witness tremendous expansion and subsequently more tax revenue. The SMEs therefore have great potential for necessary domestic revenue mobilization.

Though, SMEs which by their nature and their sizes as well as the way they operate are seen as potential creators of new jobs, they are mostly operated and managed by individual entrepreneurs with limited formal education, poor data base, lack of proper record keeping, non existence of entrepreneur skills and inaccessibility of credit facilities. It is therefore very difficult to tax SMEs due to heavy administration cost which may be higher than amount collected.

To overcome the above stated problem, the government through the IRS, has been overly concentrating scarce economic resources on the formal sector with respect to the direct tax collection. The excessive focus on the formal sector and the neglect of the informal sector arguably may be accounting for the abysmal poor collection of tax revenue from the informal sector (SMEs). The SMEs have been neglected for a considerable period of time, hence the woefully inadequate income tax from that sector (Emmanuel, 2009).

The SMEs rely heavily on the state resources – social, economic and infrastructure to run and make some level of profits. Some of the activities of the SMEs cause so much damage to the environment and so it makes

economic and social sense to rope into the tax net all the participants in the informal sector. By taxing the SMEs, the participants at least contribute for the repair and restoration of the environment they damaged (Emmanuel, 2009).

To develop an environment which is conducive for the growth of SMEs and at the same time to ensure tax compliance is a challenge to all countries. Notably among the major policy challenges are compliance and revenue costs of taxation. Existing empirical evidence clearly indicates higher compliance and revenue costs for SMEs than large businesses (Adam, 2009).

Following from this assertion, it is patently clear that under-taxation of SMEs is accounting for the imbalances in the tax system (Emmanuel, 2009). This study aims at examining factors, that have a higher potential for tax default among SMEs such as high tax rates on SMEs with their relatively low income levels, complex tax filing procedures, lack of proper tax education, high illiteracy rate among SMEs, poor record keeping, multiple taxation and under declaration of income. The logistic regression model is used in this study to estimate the effect of the statistically significant factors on tax default.

The elevation of Ghana to the status of a lower middle income country and its resultant reduction in remittance of Donor Funds to Ghana Government, coupled with the recent spiralling wage bill have put the country into financial distress. These two main compelling issues have made it imperative that the country looked internally to mobilize resources through taxation. However, it is a known fact that in a dual economy like ours where majority of income earners are in the informal sector, as against the formal sector, the collection of taxes is always a challenging endeavour.

Previous Research

Adam (2009) examined the tax policy and administration for SMEs in Ghana. By using the chi-Square tests, the findings of the study revealed that the major challenge encountered by the three main tax mobilization Agencies i.e. VAT, IRS and CEPS in dealing with SMEs is non-payment of tax. The findings again revealed that the class of SMEs that are worse offenders of non-payment of tax, tax avoidance, non-submission of tax returns, and non-adherence to tax laws and regulations were those found in the small class. Finally, that the impact of effective and efficient tax administration and tax compliance on revenue mobilization was high. He recommended that SMEs should be educated on the importance of tax to the state and be encouraged to pay tax to the government for development projects and that government as a policy should make tax payment unavoidable by SMEs.

Emmanuel (2009) undertook a critical examination of Taxation of the informal sector in Ghana and came out with the reasons why the informal sector is hard-to-tax. He used Accra, Tema, Ho and adjoin communities with a sample size of 2000 informal sector operators. From the analysis of the data collected, it came to light that the factors that make the informal sector hard-to-tax in Ghana was as a result of the predominance of cash transactions, poor record keeping, high illiteracy rate, little or no barriers to entry, lack of laid down procedures, ignorance of tax laws and the peripatetic nature of the informal sector in Ghana. The recommendations of the study included, capacity building, tax information and education, simplification of filing procedures, improving tax administration and preparing a master list of informal businesses.

Patrick (2011) examined taxation and the informal sector within the Bolgatanga Municipality and stated that one major sector of developing countries that should have contributed greatly to domestic revenue mobilization through taxation is the informal sector given its employment size. But the tax inflow from the informal sector relative to its sheer size is just a drop in the national coffers. His study sought to find out why non compliance with income tax is high in the informal sector and besides, explore further the challenges in taxing the informal sector in the Bolgatanga Municipality. A sample of seventy-five (75), comprising seventy (70) tax payers and five tax officials respondents within the area, it was established that factors such as application of sanctions, regular tax education, anticipation of benefits and high tax rates, affect compliance level of the tax payers while capacity constraints, large size of the informal sector, large size of the tax district, and improper books of accounts were some of the challenges facing the tax district in the Municipality. Measures such as intensive and regular monitoring; capacity building; logistical support, regular tax education and advertisement and effective customer relations were recommended as means of raising compliance level of taxpayers as well as reducing the challenges in taxing the informal sector in the tax district.

Ergete and Bev (2012) looked at the impact of tax cuts on Economic growth with evidence from the Canadian provinces . Using panel data convening the period 1977-2006, they observed that a higher provisioncial statutory corporate income tax rate is associated with lower private investment and slower economic growth. They employed the neoclassical growth regression model to provide the theoretical underpinning for their empirical specification.   Their empirical estimates suggest that a 1 percentage point cut in the corporate tax rate is related to a 0.1-0.2 percentage point increase in the annual growth rate. They recommended that switching from a retail sales tax to a sales tax is harmonized with the federal

value-added sales tax boosts provincial investment and economic growth at the same time reducing tax evasion. Thus, in the long run, the small "temporary" increase in the per capita growth rate translates into a significant long-run output gain for the province.

Ken (2005) studied the attitudes for tertiary students on tax evasion and the penalties for tax evasion According to tax expects the tax compliance behavior normally indicates that among other factors, demographic variables play an important role in the compliance behavior of taxpayers. The study investigates the relationship that exists between demographic and other major tax compliance variables and the attitude of students towards tax evasion and the penalties for tax evasion. A survey of 470 tertiary taxation students was recently conducted. Chi-square tests were employed to investigate the effect of demographic variable on selected survey questions. The demographic variables employed were tested for statistical significance at 5 per cent level (i.e. statistically significant at p=0.05). The findings revealed that the demographic variables analyzed including, gender, age, nationality, education/qualifications, occupation, and income level in most cases hold statistically significant relationships with the incidence of tax evasion and the penalties for evasion. He recommended that these results provide useful information for revenue collecting authorities and have implications for tax policy development. In particular, the research indicates that the level of education which was predominant variable in the study plays a vital role in tax policy.

Falkinge and Walther (1989) developed an economic deterrence model to examine tax evasion from a theoretical perspective but the fiscal psychology approach has often been used in empirical research. Factors that have been examined include: complexity of the tax system; level of revenue information reporting; preparer responsibilities and penalties; probability of receiving audit coverage; progressively and actual level of tax rates; penalties for non-compliance, and individual factors (age, gender, education and income). The major works of the research shows that there is no unanimous agreement on any one of these factors indicating a positive relationship with taxpayer compliance. They suggest that a tax system that combines both penalties and rewards is more effective in maximizing compliance than a system that focuses solely on sanctions. As such, positive inducement for compliance may also have a key role to play.

Alm, Blackwall and Makee (2004) Studied the selection rule for sales Tax Audits in the US and its impact on tax compliance. The study estimates the process by which firms are selected for a sales tax audit and the determinants of subsequent firm compliance behaviour, focusing upon the Gross Receipts Tax in New Mexico. Results indicate that auditors select returns based upon a systematic, even if informal, audit rule and that firms

that exhibit greater variation in deductions, provide services, Miss filing deadlines, and have an out-of-state mailing address have a lower compliance rate.

Ordered probit models were used in Alligham and Sandans (1972) study to identify the determinants of tax evasion behaviour. They explain tax evasion behaviour based on the probability of being audited, the amount of the penalty imposed and the level of risk aversion. The relationship between tax evasion and income or marginal tax rate is ambiguous according to these models. These theoretical models have opened the door in the following decade to the first empirical studies. The empirical results tend to confirm the influence of the variables as expected in the theoretical models. It seems also to exist a positive relationship between tax rate and tax evasion, in contrast with the ambiguous predictions of the model.

Method
Sample Selection and Data Collection

Selection of respondents for this study was generally guided by stratified random sampling technique. Stratified random sampling extends the idea of simple random sampling to ensure that a heterogeneous population has its defined strata levels taken account of in the sample (Francis, 2004). It is a fact that SMEs are very heterogeneous in nature, hence the justification for stratified random sampling so as to achieve a fairly representative sample size from the frame. The SMEs were divided into the following categories: Hairdressers and Beauticians, Dressmakers and Fashion Designer, Artisans, Food Vendors, General Traders, Auto repairers, Washing Bay Operators and Vulcanizes. Hundred (100) SMEs were selected for the study. A sample of 10 persons was drawn from each category.

Data was obtained from both primary and secondary sources. The primary data source includes field survey while the secondary data was obtained from libraries, journals and articles. Primary data collection was done using questionnaire. Face-to-face interview was used throughout questionnaire administration to obtain information from SMEs as respondents in the study. The questionnaire, after it had been developed, was pre-tested before actual administration was done in the field.

After the data collection, the data was coded, edited, cleaned and entered into the computer for further analysis. For quality control, data was checked in the field to ensure that the information collected was accurately recorded. Before and during data processing, the information was cross checked again to ensure completeness and internal consistency. Where some inconsistencies existed in the data due to mistakes by the respondent, it was easily detected and the interviewee concern was contacted again for clarification in order to have the right information. This was possible and

easy because special identification codes were assigned to respondents. Also through the process of data review, cleaning, coding, entry and editing, flaws such as incomplete test instruments, unanswered items, as well as instruments with wrong responses were identified and the necessary corrections made to render such instruments useful.

Model

Logistic regression was used to emphasize important relationships from the results. Logistic regression is part of a category of statistical models called generalized linear models. This broad class of models includes ordinary regression, ANOVA and loglinear regression.

It is important to understand that the goal of an analysis using logistic regression is the same as that of any model-building technique used in statistics: To find the best fit and most parsimonious. What distinguishes a logistic regression model from linear regression model is the outcome variable. In the logistic regression model, the outcome variable is binary or dichotomous.

Logistic regressions work with **odds** rather than proportions. The odds are simply the ratio of the proportions for the two possible outcomes.

$$ODDS = \frac{\hat{p}}{1-\hat{P}} \tag{1}$$

A similar formula for the population odds is obtained by substituting π for $\dot{\rho}$ in this expression. To use categorical variables in logistic regression, we need to use a numeric code. The usual way to do this is with an **indicator variable.** For our purpose we will use an indicator of whether or not a respondent pays tax:

$$y = \begin{cases} 1, & \text{If the respondent pays tax} \\ 0, & \text{If the respondent doesn't pay tax} \end{cases} \tag{2}$$

In simple linear regression we model the mean of the response variable as a linear function of the explanatory variables. With logistic regression we transform the odds using the natural logarithm. We use the term **log odds** for this transformation. The log odd is then modeled as a linear function of the explanatory variables:

$$\log(\frac{\pi}{1-\pi}) = \beta_0 + \beta_1 X_{i1} + \cdots + \beta_\kappa X_{ik}, \quad i = 1, \dots, n \tag{3}$$

Where the βs are the regression parameters, the Xs are the explanatory variables and n is the sample size.

Method of selecting variables

There are several methods available for selecting independent variables. The forced entry method, where any variable in the variable list is entered into the model and the two stepwise methods: forward and backward.

With the stepwise methods, the Wald statistic, the likelihood ratio, or a conditional algorithm for variable removal can be used. For both stepwise methods, the score statistic is used to select variables for entry into the model. The backward elimination was used for selecting variables in this study.

Results
Descriptive Statistics
Several observations can be made from Table 1; we observe from the table that more female proprietors pay tax to IRS than male proprietors. In terms of age, more proprietors within the age bracket of 31-45 years pay tax to IRS than any other category of age group. We also observe that more proprietors with formal education pay tax to IRS than proprietors with no formal education. Also, whiles majority of General Traders and Auto repairers pay tax to IRS, few Hairdressers and Beauticians, Dressmakers and fashion designers, Artisans, Food vendors and vulcanizers pay tax to IRS.

Table 1: Descriptive Statistics

Background Features	Do you pay tax to IRS?		
	Yes	No	Total
Age of proprietor			
16-30	18 (36.7%)	31 (63.3%)	49 (100.0%)
31-45	14 (38.9%)	22 (61.1%)	36 (100.0%)
46-60	3 (23.1%)	10 (76.9%)	13 (100.0%)
61+	0 (0.0%)	2 (100.0%)	2 (100.0%)
Proprietor's highest level of education			
Basic	11 (21.2%)	41 (78.8%)	52 (100.0%)
SHS/Commercial	14 (53.8%)	12 (46.2%)	26 (100.0%)
Diploma	4 (57.1%)	3 (42.9%)	7 (100.0%)
1st and/or 2nd Degree	0 (0.0%)	1 (100.0%)	1 (100.0%)
Professional	1 (100.0%)	0 (0.0%)	1 (100.0%)
No formal education	5 (38.5%)	8 (61.5%)	13 (100.0%)
Sex of proprietor			
Male	17 (28.8%)	42 (71.2%)	59 (100.0%)
Female	18 (43.9%)	23 (56.1%)	41 (100.0%)
Kind of SME respondent is engaged in			
Hairdresser and Beauticians	8 (40.0%)	12 (60.0%)	20 (100.0%)
Dressmakers and Fashion Designers	8 (40.0%)	12 (60.0%)	20 (100.0%)
Artisans	1 (10.0%)	9 (90.0%)	10 (100.0%)
Food Vendors	3 (30.0%)	7 (70.0%)	10 (100.0%)
General Traders	6 (60.0%)	4 (40.0%)	10 (100.0%)
Auto repairs	7 (70.0%)	3 (30.0%)	10 (100.0%)
Washing Bay	2 (20.0%)	8 (80.0%)	10 (100.0%)
Vulcanizer	0 (0.0%)	10 (100.0%)	10 (100.0%)

Model Fitting

Table 2 is a description of the variables explored. The PROC LOGISTIC command in Statistical Analysis Software (SAS) was used for model fitting. The backward elimination analysis starts with a model that contains all explanatory variables. By specifying the fast option, PROC LOGISTIC eliminates insignificant variables without refitting the model repeatedly. This analysis uses a significance level of 0.05 (SLSTAY=0.05) to retain variables in the model.

Table 2: Variable Description

Y	Do you pay tax to IRS? [1=Yes, 0=No]
x1	Gender of proprietor [1=Male, 2=Female]
x2	Age of proprietor [1=16-30 years, 2=31-45 years, 3=46-60 years, 4=60+ years]
x3	Marital status of proprietor [1=Married, 2=Single, 3=Divorced, 4=Separated, 5=Widow/Widower]
x4	Proprietor's highest level of education [1=Basic, 2=SHS/Commercial, 3=Diploma, 4=1st and or 2nd Degree, 5=Professional, 6=No Formal Education]
x5	Kind of SME [1=Hairdresser and Beauticians, 2=Dressmakers and Fashion Designers, 3=Artisans, 4=Food Vendors, 5=General Traders, 6=Auto repairs, 7=Washing Bay, 8=Vulcanizer]
x6	Do you think it is necessary to pay tax at all? [1=Yes, 2=No]
x7	Do you file returns including accounts regularly with IRS? [1=Yes, 2=No]
x8	Do you declare your total income to IRS? [1=Yes, 2=No]
x9	Do you keep proper records or books for accounting purpose? [1=Yes, 2=No]
x10	Are you adequately educated on tax laws by tax authorities? [1=Yes, 2=No]
x11	Do you pay tax to other organizations besides IRS? [1=Yes, 2=No]
x12	What is normally the mode of payment for your goods or services? [1=Cash only, 2=Cheques only, 3=Both Cash ad Cheques]

Result of the fast backward elimination analysis is shown in Tables 3, 4, 5 and 6. Initially, a full model containing all twelve possible factors is fit to the data. PROC LOGISTIC then removes x1, x2, x3, x4, x6, x7, x8, x9, and x12 from the model all at once. This leaves x5, x10, x11, and the intercept as the only variables in the final model. In this analysis, only parameter estimates for the final are displayed.

Table 3: Analysis of Effect Removed by Backward Elimination

Effect Removed	Chi-Square	DF	pr > Chisq	pr > Residual Chi-square	DF	Chisq
x8	0.0009	1	0.9755	0.0009	1	0.9755
x12	0.0011	1	0.9736	0.0020	2	0.9990
x6	0.1153	1	0.7342	0.1174	3	0.9897
x9	0.3200	1	0.5716	0.4374	4	0.9793
x3	0.4041	1	0.5250	0.8415	5	0.9743
x1	0.1324	1	0.7160	0.9739	6	0.9866
x2	0.5622	1	0.4534	1.5362	7	0.9810
x4	0.8460	1	0.3577	2.3822	8	0.9670
x7	0.1166	1	0.7327	2.4988	9	0.9809

Table 4: Model fit statistics

Criterion	Intercept only	and covariates
AIC	132.489	88.305
SC	134.094	98.726
-2log L	129.489	80.305

Table 5: Testing Global Null Hypothesis: BETA= 0

Test	Chi-Square	DF	Pr > Chisq
Likelihood Ratio	49.1841	3	<.0001
Score	38.5233	3	<.0001
Wald	24.4743	3	<.0001

Table 6: Summary of Backward Elimination

Variable Lable	Step	Effect Removed	DF	Number In	Wald Chi-square	Pr>chisq
x8	1	x8	1	11	0.0009	0.9755
x12	1	x12	1	10	0.0011	0.9736
x6	1	x6	1	9	0.1153	0.7342
x9	1	x9	1	8	0.3200	0.5716
x3	1	x3	1	7	0.4041	0.5250
x1	1	x1	1	6	0.1324	0.7160
x2	1	x2	1	5	0.5622	0.4534
x4	1	x4	1	4	0.8460	0.3577
x7	1	x7	1	3	0.1166	0.7327

Table 7 presents the parameter estimates for the variables in the final model namely, kind of SME, the adequacy of tax education by tax authorities, and multiple taxation. For each variable in the model, the last level is used as the reference level for comparison. All the variables in the final model are significant since they have p-values of less than 0.05.

Table 7: Analysis of Maximum Likelihood estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr>chisq
Intercept	1	-0.8703	3.4170	6.7387	0.0094
x5=1	1	-0.2397	0.1435	2.7908	0.0448
x5=2	1	1.1121	0.4103	7.3469	0.0067
x5=3	1	-2.0033	0.9276	4.6638	0.0308
x5=4	1	1.8895	0.5315	12.6403	0.0004
x5=5	1	1.7824	0.6063	8.6411	0.0033
x5=6	1	-1.0361	0.3132	10.9391	0.0009
x5=7	1	1.0786	0.3657	8.7010	0.0032
x10=1	1	3.7725	0.7806	23. 3563	0.0001
x11=1	1	2.6753	1.6450	2.6448	0.0109

Table 8 presents the odds ratios for the variables in the final model. The odds ratio takes values between zero and infinity. The value 1 is the neutral value and means that there is no difference between the groups compared; close to zero or infinity means a large difference. An odds ratio larger than one means that group one has a larger proportion than group two. From Table 8, we observe that hairdressers and beauticians, dressmakers and fashion designers, artisans, food vendors, general traders, auto repairs, and washing bay operators all have a larger proportion of paying tax to IRS than vulcanizers. Also, SMEs whose proprietors are adequately educated on tax laws by tax authorities have larger proportions of paying tax to IRS than those who are not. Finally, SMEs that pay tax to other organizations in addition to IRS have a smaller proportion of paying tax to IRS than those that pay tax only to IRS. The odds ratios for the variables further implies that the odds of being a non-tax payer due to inadequate tax education is 43.49 which is the highest among the three variables and therefore has the greatest impact on tax default among SMEs in the Tamale Metropolis.

Table 8: Odds Ratio Estimates

Effect	Point	Point Estimates	95% Wald Confidence Limit	
x5	1 vs 8	2.787	0.594	1. 042
x5	2 vs 8	1.406	0.604	3.271
x5	3 vs 8	3.185	0.988	10.265
x5	4 vs 8	1.687	0.266	1.776
x5	5 vs 8	1.998	0.399	2.498
x5	6 vs 8	1.406	0. 604	3.271
x5	7 vs 8	3.185	0.988	10.265
x10		43.489	9.417	200.828
x11		0.517	0.578	364.881

The classification results are presented in Table 9. Each row of the Classification Table corresponds to a cut point applied to the predicted probabilities, which is given in the probability level column. The frequency

tables of observed and predicted responses are given by the next four columns. For example, with a cutpoint of 0.5, 48 events and 28 nonevents were classified correctly. On the other hand, 7 nonevents were incorrectly classified as events and 17 events were incorrectly classified as non events. For this cut point, the correct classification rate is 76/100 (=76%), which is given in the sixth column. Accuracy of the classification is summarized by the sensitivity, specificity, and false positive and negative rates, which are displayed in the last four columns.

Table 9: Classification Table

Prob. Level	Correct		Incorrect		Percentages				False	
	Event	Non-Event	Event	Non-Event	Correct	Sensitivity	Specificity		POS	NEG
0.060	65	0	35	0	65.0	100.0	0.0	35.0	.	
0.080	65	4	31	0	69.0	100.0	11.4	32.3	0.0	
0.100	65	4	31	0	69.0	100.0	11.4	32.3	0.0	
0.120	65	4	31	0	69.0	100.0	11.4	32.3	0.0	
0.140	65	4	31	0	69.0	100.0	11.4	32.3	0.0	
0.160	64	4	31	1	68.0	98.5	11.4	32.6	20.0	
0.180	64	4	31	1	68.0	98.5	11.4	32.6	20.0	
0.200	63	4	31	2	67.0	96.9	11.4	33.0	33.3	
0.400	59	21	14	6	80.0	90.8	60.0	19.2	22.2	
0.420	59	21	14	6	80.0	90.8	60.0	19.2	22.2	
0.440	53	21	14	12	74.0	81.5	60.0	20.9	36.4	
0.460	53	28	7	12	81.0	81.5	80.0	11.7	30.0	
0.480	48	28	7	17	76.0	73.8	80.0	12.7	37.8	
0.500	48	28	7	17	76.0	73.8	80.0	12.7	37.8	
0.900	39	33	2	26	72.0	60.0	94.3	4.9	44.1	
0.920	32	33	2	33	65.0	49.2	94.3	5.9	50.0	
0.940	30	34	1	35	64.0	46.2	97.1	3.2	50.7	
0.960	22	34	1	43	56.0	33.8	97.1	4.3	55.8	
0.980	3	34	1	62	37.0	4.6	97.1	25.0	64.6	
1.000	0	35	0	65	35.0	0.0	100.0	.	65.0	

The Logit Model

According to the analysis above, the logit model with the significant variables is

$\eta_i = -8.8703 - 0.2397 Hairdressers + 1.1121 Dressmakers - 2.003 Artisans + 1.8895 Foodvendors + 1.7824 General\ traders - 1.0361 Auto\ repairs + 1.0786 Washing\ bays + 3.7725 Tax\ education + 2.6753 Multiple\ tax$

Hence the logistic regression model developed in this study is:

$$P(\text{payment of tax}) = \frac{e^{\eta_i}}{1 + e^{\eta_i}}$$

And thus

$$P(\text{non} - \text{payment of tax}) = 1 - \frac{e^{\eta_i}}{1 + e^{\eta_i}}$$

Conclusion

Using the concept of Deviance together with Wald statistic, the study variables were subjected to statistical testing. Only three variables were included in the model, namely, kind of SME, the adequacy of tax education by tax authorities, and multiple taxation. The observed level of significance for regression coefficients for the three variables were less than 5% suggesting that these three variables were indeed good explanatory variables. The results also showed that the model provided a reasonable statistical fit. Analysis of odds in this study also showed that non-payment of tax due to inadequate tax education by tax authorities is more likely to cause tax default among SMEs than any other variable. The study further revealed the following findings:

That the SMEs were not conversant with the tax laws because the tax laws were not easy to understand. They therefore suggested that the tax laws should be simplified and published in local languages for easy accessibility and understanding.

It was further noted that only 46% of SMEs submits their tax returns to the IRS because the tax filing procedures are complex.

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