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Full Length Research Paper

Do economic variables still influence tax compliance intentions of self-employed persons in developing economies? Evidence from Ghana

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The purpose of this study was to establish whether tax compliance intentions of tax-registered self-employed persons are still influenced by economic variables instead of non-economic variables which are now at the centre stage in tax compliance research. A quantitative research design based on a survey of 453 self-employed persons randomly selected from 15 Small Taxpayers' Offices across the Greater Accra region was used. Data was analysed using the Statistical Package for Social Sciences (SPSS) version 24 software complemented with a correlation analysis and validated using multiple regression and one-way analysis of variance. Results indicate that if the Ghana Revenue Authority (GRA) conducts frequent audits on business records and activities, and imposes lower tax rates on self-employed persons, a moderate but positive effect on tax compliance could be achieved. The results also indicate that higher fines could have a moderate negative effect on tax compliance decisions. Lastly, the level of income of self-employed persons was found to have weak but positive effects on their tax compliance intentions. The overarching results from this study indicate that economic variables do have positive but moderate effects on tax compliance intentions of self-employed persons in developing economies. It was recommend that the tax administration authority should not place too much emphasis on higher fines and imposition of higher income tax rates to encourage voluntary compliance, but instead, should place more emphasis on auditing of records and returns, and engage and provide holistic support to enable self-employed persons to grow and expand their businesses.

Key words: Tax, compliance, self-employed persons, Ghana, underreporting.

INTRODUCTION

Every governemnt requires all taxable persons to honestly declare the full extent of their incomes for tax purposes. However, studies on tax compliance have shown that among all taxable persons, self-employed persons and individuals are the most predisposed to tax noncompliance compared with employed persons (Spicer and Lundstedt, 1976) and that this group of taxpayers do underreport their income to the tax authorities (Andreoni et al., 1998, Clotfelter, 1983b; Feinstein, 1991). Research on tax compliance has centered on economic factors

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(Allingham and Sandmo, 1972; Alm et al., 1992) and non economic factors (Smith and Stalans, 1991; Hyun, 2005). Prior tax compliance studies have also observed that this group of persons constitutes the biggest share of the taxpaying population in many countries (Joshi et al., 2013; Engstrom and Holmlund, 2009; Joulfaian and Rider, 1998). The economic implications of these findings are that governments in developing economies are unable to derive the desired tax income from this group of taxpayers for development. This problem is compounded by the recent global economic downturn as otherwise traditionally reliable annual budgetary support from develpoed economies to developing economies dwindles (Brondolo, 2009). The study applies the known economic variables of tax compliance (tax rate, probability of audit, penalties and income level) to measure and predict the level of compliance of self-employed persons in a context of a developing economy to ascertain whether their taxpaying intentions were influenced by the traditional economic tax compliance determinants as prodound by Allingham and Sandmo (1972). The study could not obtain the tax compliance intentions of self-employed persons who had not been registered with Ghana's Tax Revenue Authority. The absence of this vital information implies that the full extent of the purpose of this study has not been served. Prior tax compliance studies have failed to accurately predict tax compliance intentions of tax-registered self-employed persons operating in the economy. The study is unique in its adoption of four economic determinatns to test whether the tradional economic variables are still relevant in predicting tax compliance. Current studies on tax compliance have shifted from the traditional economic model to behavioral and psychological aspects of tax compliance and largely dominated by studies in the advanced economies. The study sought to test these economic models to determine whether self-employed persons would still respond to changes in these economic variables. Indeed, the study observed that self-employed persons' taxpaying intentions are largely influenced by the economic model. The implication of this finding is that, these taxpayers are still at the basic level of tax compliance and may not have reached the advanced form of compliance which is mostly non-economic. This implies that these taxpayers do comply to tax laws largely for economic reasons. It should however be noted that we could not conclude that these taxpayers are not influnced by non-economic determinants because it is outside the scope of this study. The study is also unique in Ghana because it is the only study that has combined the four principal economic models in a single study to predict the tax compliance level of self-employed persons. We believe that this prediction model could be extended to non tax-registered self-employed persons operating in the shadow economy if data is obtainned on them. Getting this group of taxable persons into the tax net could help reduce budget deficit in developing economies. Unlike the advanced economies, this study finds that taxpaying intentions in the developing economies are still largely influenced by economic factors.

The study answered the following research questions:

Research Question 1 ($_1R_1$): Is there a statistical relationship between income level and tax compliance intentions of self-employed persons?
Research Question 2 ($_2R_2$): Is there a statistical relationship between higher fines or penalties for evading taxes and tax compliance intentions of self-employed persons?
Research Question 3 ($_3R_3$): Is there a statistical relationship between high audit probability and tax compliance intentions of self-employed persons?
Research Question 4 ($_4R_4$): Is there a statistical relationship between high income tax and tax compliance intentions of self-employed persons?

The study is important in many respects it adds to existing literature on tax compliance studies by exploring the existing economic variables in a different cultural context. Existing tax compliance point to cultural dimensions as affecting individual compliance decisions (Alm et al., 1995; Gerxhani and Schram, 2006; Richardson, 2006) but current literature is dominated by compliance behaviour of individuals and self-employed persons in the advanced economies. Some few studies such as Nsor-ambala (2015) have been conducted in Ghana but did not employ the data collection tool employed in this study and none has also combined all the four economic variables in a single study. The findings from the study could also serve as policy guide for governments in developing economies to be more accurate in measuring and predicting tax compliance behaviour of self-employed persons. The governemnt of Ghana has also set an ambitious plan to put the country on the path of economic independence under the theme 'Ghana beyond aid'. To be able to realise this plan, improved tax compliance by self-employed persons could help improve domestic tax revenue which is a cornerstone of the Ghana Beyond Aid agenda.

REVIEW OF RELATED LITERATURE

Tax compliance behaviour has been considered by tax compliance researchers from two perspectives: econimic and non-economic factors. There are those who believe that tax compliance behaviour can be explained from pure economic perspective (Allingham and Sandmo, 1972; BĂTrÂNcea et al., 2012; Hessing et al., 1992; Moser et al., 1995; Sheffrin and Triest, 1992; Other tax compliance researchers (Alabede et al., 2011; Alm and Torgler, 2011; Cummings et al., 2009; Orviska and Hudson, 2003; Pickhardt and Prinz, 2014; Song and Yarbrough, 1978; Torgler et al., 2010; Vogel, 1974),

believe that tax compliance behaviour should be explained from behavioural, political, sociological and psychological dimensions.

Tax researchers and scholars who view tax compliance from pure economic perspectives have, in addition, made an observation that tax compliance decisions made by self-employed persons or individuals are primarily economic in nature and could be affected by the probability of being audited, detected and fined, level of income and how much to disclose, and the level of tax rates applicable to their declared income (Allingham and Sandmo, 1972; Clotfelter, 1983a; Moser et al., 1995; Sheffrin and Triest 1992; Hessing et al., 1992, Mason and Calvin, 1978; BĂTrÂNcea et al., 2012; Devos, 2014). This study was guided by the following theories:

Economics-of crime theory

According to Allingham and Sandmo (1972), the pioneers of the economics-of-crime theory or the standard economic model, every taxpayer may be faced with two options: to declare the full income to the tax authorities or to declare only a portion of such income. Being a decision under uncertainty, failure to report total revenue does not automatically attract a fine unless the tax authorities audit the taxpayer. However, with the possibility of being audited, the taxpayer is better off declaring his full income if the penalty for evasion is greater than the benefit envisaged by evading. If there is no auditing, then the taxpayer is better off with option two. The theory again considers the tax compliance individual as aiming to maximize expected utility from evading taxes and weighs the benefits of successful cheating and risk of tax fraud through detection and punishment. Where the taxpayer perceives high probability of being detected and fined through auditing, non-compliance should decrease. Under this theory, therefore, the only source of motivation for the individual to honour their tax obligation is the fear of detection and punishment. In order to change the tax compliance behaviour therefore, punitive and preventive measures such as penalties and regular audits are necessary.

Fiscal psychology model

As tax researchers and scholars became increasingly convinced that the economics-of-crime theory was inadequate to explain tax compliance behaviour, parallel research studies had begun, which sought to modify or improve upon the pure economic-of-crime theory. The fiscal psychology model is an integration of some aspects of the economic deterrence model and the social psychology model (Devos, 2014). The authors of this theory believed that tax noncompliance and evasion was not only influenced by economic factors but by a combination of both economic and social norms that shaped the behaviour of taxpayers (Alm et al., 1995).

Theory of reasoned action

Other tax compliance researchers argue that tax compliance decisions are not influenced by economic motives alone. Arguing under “the theory of reasoned behavior”, Fishbein and Ajzen (2010: 18) believe that tax compliance behaviour cannot be explained solely from economics-of-crime theory. According to them, tax compliance decisions are behavioural and that to influence these behaviours, the underlying behavioural ingredients must be dealt with. Specifically, they argue that different behaviours call for different interventions because different behaviours are based on different set of beliefs. Second, only a small number of variables namely attitude, perceived social norm, and perceived behavioural control and its underlying cognitive foundations, are sufficient to change any socially significant behaviour. Third, because beliefs represent the information people have about behaviour, providing new information can change the beliefs and this can be an effective way of changing intentions and actions. The study conceptualizes that self-employed persons possess some inherent behaviour that are repellent to voluntary tax compliance and requires changes to these salient behaviours to improve their tax compliance behaviour.

Prospect theory

Some studies on tax compliance behaviour have employed this theory to explain why non-compliance is high with individual incomes first developed by Kahneman and Tversky (2000). Applying the theory, Idson et al. (2000), found that while an employed person will consider a tax withheld at source as non-gain, the self-employed persons who have to pay the same amount of tax out of their income, will perceive it as a painful loss. The prospect theory also postulates that those in the loss domain are more risk seeking than those in the gain domain. Thus, for the self-employed persons owner, paying taxes is not only considered painful, but puts them in a decision frame that makes them risk-seekers (Figure 1).

Other researchers also found that incomes that are not subject to third party scrutiny and reporting are predisposed to noncompliance (Joulfaian and Rider, 1998; Dhami and al-Nowaihi, 2007; Jackson and Hatfield, 2005). These researchers applied the prospect theory to advance tax payments in the U.S and found that a refund from an advance tax payment constituted a gain and resulted in lower non-compliance. A recent study by Kamleitner et al. (2012) observed that self-employed persons perceive tax payment as a loss and thus an 'out

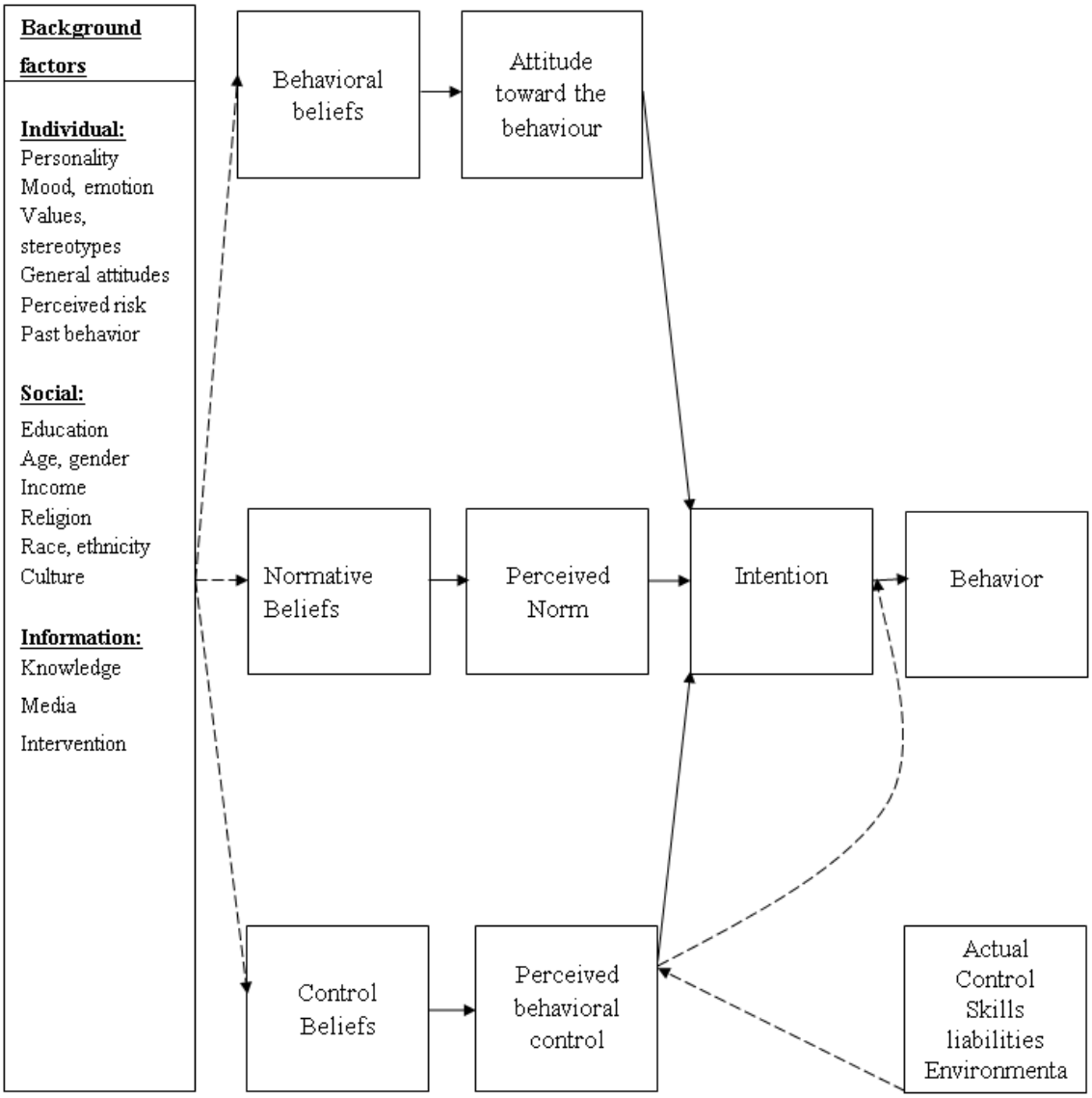

Figure 1. Schematic Presentation of the Reasoned Action Model. Adapted from "Predicting and Changing Behavior, The Reasoned Action Approach," by M. Fishbein, and I. Ajzen, 2010

of pocket cost', which in effect represents a loss frame.

METHODOLOGY

This quantitative study employed a cross sectional survey design with self-administered seven-point Likert-scale and closed-ended questionnaires to measure and predict the statistical relationships when changes in the independent variables occur. According to Babbie (2002) and Creswell (2007, 2009), the purpose of a survey research is to generalize from a sample to a population so that inferences can be made about some characteristic, attitude, or behaviour of the population. Babbie's study employed a validated survey method adopted by Elffers et al. (1987) in which empirical data obtained from the Dutch tax authorities were compared with self-reported data obtained from field work in order to use the official data as a control data. The methodology used comprised Likert-scale type questions that were based on scenarios such that participants were to respond to questions that were abstract and not directed at them.

This blend of Likert-scale questions and scenarios has been used, tested and validated by Nsor-ambala (2015) to examine the effects of ethical considerations on compliance behaviour of selected self-employed in the Greater Accra tax jurisdiction. Preliminary enquiries were made from the STO to request all the data on all the small businesses that had been registered with them for tax purposes in the Greater Accra Region. Data on location, addresses, telephone numbers and email addresses on all registered small businesses were obtained from The National Board for Small Scale Industries (NBSSI), which was used to complement the data that was obtained from the STO. The data collected from the fieldwork was analysed using Statistical Package for Social Sciences (SPSS) software and the results were then compared with the empirical data to find out if the outcome was comparable or distinct from the findings made by Elffers et al. (1987).

The steps adopted to obtain data and the processes to analyse the data obtained from this study followed strictly all the ethical

guidelines accepted in academic research and in accordance with the American Psychological Association (APA, 2002) ethical guidelines. Specifically, steps were taken to get the consent of all participants. The revenue authority was also contacted to obtain its consent to contact the taxpayers in the selected tax districts. In addition, participants were assured of the strictest confidentiality of the information they provided for the study in relation to how it was to be analysed and stored. In order to achieve these ethical and confidentiality objectives, the following steps and procedures were embarked upon to solicit information from respondents.

First, a formal contact and enquiry was made at the Small Taxpayers Office (STO) during which an official request for permission was made to the Commissioner of the Domestic Tax Division (DTD) and copied to the Deputy Commissioner in charge of the Small Taxpayer for data collection in the various STO districts in the Greater Accra Region. .

The STO Deputy Commissioner declined the initial request for permission because it was not addressed to the Commissioner of DTD as required by the internal administrative procedures. The letter requesting for taxpayers' data was later re-addressed to the appropriate officer and re-submitted to the GRA Head Office. In order to ensure that the GRA was fully aware of the objectives and purpose of the study, a copy of the questionnaire was attached to the request letter. However, when the date for the collection of the taxpayers' data was due, the researchers were informed that the STO Head Office did not have the details of the taxpayers' files and that such data could only be obtained directly from the districts citing data protection law to support the decision.

Based on the setback in obtaining the data required, the researchers requested for participation directly from selected self-employed persons based on the sample size using random sampling.

The informal approach was considered most suitable in getting the consent and participation of the participants than the formal approach. The reason could be found in a similar study by Wahl et al. (2010). In this study, it was observed that contacting taxpayers formally on their taxpaying intentions could adversely affect their participation in a survey (Wahl et al., 2010).

The revised technique was inherently limited because it could not distinguish between tax-registered self-employed persons from non-registered ones. Their taxpaying status could only be established during the interview. Two days were allocated for data collection in each of the 15 STO districts. In all, 30 days were used to administer the questionnaires and the interviews to 453 sampled taxpayers in all the 15 Small Taxpayers' Districts.

The data collection instrument used in the study was a questionnaire complemented with interviews. The interviews became necessary after the authors discovered that many of the participants could not administer the questionnaires without assistance. After the respondents had completed the questionnaires and the interviews, the responses were collected, uploaded and collated and an online form using Google forms for the data entry of the questionnaire was created. Once the data entry of the questionnaires and the interview were completed, the raw data was then exported and entered to MS Excel 2013 format. The excel file was then exported from MS Excel 2013 into SPSS version 24 software where it was coded and prepared for data analysis.

Multiple regression analysis

Multiple regression analysis was used to examine the combined relationships between the independent variables (tax rate, income level, audit probability, and fines) and the dependent variable of tax compliance.

According to Draper et al. (1966) and Field (2013), the skeletal model for the multiple linear regression is given by:

$$y = \beta_0 + \beta_1 x_1 + ... + \beta_k x_k + \varepsilon \qquad k = 1, 2, ...$$

where β_0 = intercept, $\beta_1, \beta_2, ..., \beta_k$ = regression estimates, y = dependent variable, $x_1, x_2, ..., x_k$ = the independent variables, and ε = the error term.

The data analysis tool was considered desirable because the dependent variable (Tax Compliance) and the independent variables are both quantitative in nature and many researchers have employed it in similar studies (Contos et al., 2009; Picur and Riahi-Belkaoui, 2006). Andreoni et al. (1998), observed that researchers mostly use standard econometric models to analyse tax non-compliance data, but where necessary, specialized models have been relied on to deal with unusual issues that usually arise in analysing compliance data.

Correlation analysis

Correlation analysis was also used to test the hypothesis outlined in the study. The correlation helped us to determine whether there was a significant relationship or non-significant relationship. It also helped us determine the direction of the relationship whether the relationship between the dependent variable and the independent variables were positively related or negatively related. The correlation estimate is represented by r. The value for r lies between the range of -1 and +1, respectively. The closer *r* approaches +1 the stronger the relationship and the closer *r* approaches -1 the weaker the relationship.

According to Cohen et al. (2013) and Field (2013), the classification of the structure of a correlation relationship should adhere to the following rule of thumb: $0 \le r \le 0.3$, weak relationship; $0.4 \le r \le 0.6$, moderate relationship; $0.7 \le r \le 1$, strong relationship.

Conversely, the same rule of thumb still holds: $-1 \le r \le -0.7$, weak relationship; $-0.6 \le r \le -0.4$, moderate relationship; $-0.3 \le r \le 0$, strong relationship.

The formula for the correlation coefficient is given by:

$$r = \frac{S_{xy}}{\sqrt{S_{xx} S_{yy}}} \quad , \quad -1 \le r \le 1$$

$$S_{xy} = \sum (x - \bar{x})(y - \bar{y}) = \sum xy - \frac{(\sum x)(\sum y)}{n}$$

$$S_{xx} = \sum (x - \bar{x})^2 = \sum x^2 - \frac{(\sum x)^2}{n}$$

$$S_{yy} = \sum (y - \bar{y})^2 = \sum y^2 - \frac{(\sum y)^2}{n}$$

If the significance value associated with the correlation coefficient obtained from the bivariate correlation between a particular independent variable and a dependent variable is less than 0.05, then we reject the null hypothesis at a 95% confidence level. Furthermore, if the significance value is less than 0.01, then we reject the null hypothesis at a 99% confidence level. The rejection of the null hypothesis indicates the existence of a relationship between the dependent variable and independent variables. In all other cases, we fail to reject the null hypothesis because there is no association between the dependent variable and the independent

Table 1. Analyses the variance for multiple linear regression used in the study.

Model	Df	SS	MS	F-statistic
Regression	k	SSR	$MSR = \frac{SSR}{k}$	
Residual	$n-k-1$	SSE	$MSE = \frac{SSE}{n-k-1}$	$F = \frac{MSR}{MSE}$
Total	$n-1$	SST		

variables, respectively (Field, 2013).

The formula and parameters for the Analysis of Variance is given by SST = Total Sum of Squares; SSE = Error Sum of Squares; SSR = Regression Sum of Squares; $SST = SSR + SSE$;

$SST = \sum(y-\bar{y})^2 = S_{yy}$; $SSR = \sum(\hat{y}-\bar{y})^2 = \frac{S_{xy}^2}{S_{xx}}$;

$SSE = SST - SSR = \sum(y-\hat{y})^2 = S_{yy} - \frac{S_{xy}^2}{S_{xx}}$;

df = degrees of freedom; SS = Sum of Squares; MS = Mean Square; MSR = Regression Mean Square; MSE = Error Mean Square; F = F-statistic.

Table 1 analyses the variance for multiple linear regression used in the study.

One-way analysis of variance

One-way analysis of variance was also used to determine the relationship between independent variables (income level, fines, audit probability and tax rate) and the dependent variable (Tax Compliance). The analysis helped to determine the relationship between a particular independent variable on the dependent variable by the courtesy of the F-statistic obtained between the dependent and independent variables. Large values for the F-statistic indicate large effect and small values indicate small effect on the dependent variable (Field, 2013).

Moreover, if the p-value associated with the relationship between the dependent and a particular independent variable is less than 0.05 or 0.01, we reject the null hypothesis and conclude the existence of a relationship. On the contrary, we fail to reject the null hypothesis and conclude no relationship exists between the dependent and independent variable (Field, 2013).The formula and parameters for the one-way analysis of variance is given by:

SST = Total Sum of Squares
SSTR= Sum of Squares due to Treatment
SSE = Error sum of Squares
SSTR is also known as SSB (Between Sum of Squares) and SSE can also be referred to as SSW (Within Sum of Squares)

k = number of populations
n = total number of observations
$\bar{x}$ = mean of all n observations
n_j = size of sample from population j
$\bar{x}_j$ = mean of sample from population j
s_j^2 = variance of sample from population j
T_j = sum of sample data from population j

$$SST = \sum(x-\bar{x})^2 = \sum x^2 - \frac{(\sum x)^2}{n}$$

$$SSTR = SSB = \sum n_j(\bar{x}_j - \bar{x})^2$$

$$SSTR = \sum\left(\frac{T_j^2}{n_j}\right) - \frac{\sum x^2}{n}$$

$$SSE = SSW = \sum(n_j - 1)s_j^2$$

$$SSE = SST - SSTR$$

$$MSTR = \frac{SSTR}{k-1}, \quad MSE = \frac{SSE}{n-k}$$

$$F = \frac{MSTR}{MSE}$$

MSTR = Treatment Mean Square
MSE = Error Mean Square
F = F-statistic.

Table 2 is a one-way analysis of variance also known as ANOVA used to analyse the data obtained from the study.

Alternatively, Table 3 was used to analyse one-way variance.

When calculating the effect sizes under one-way analysis of variance, according to the formula for calculating the effect size, it is given as:

$$\text{Eta-squared} = \frac{SSW}{SST}$$

According to Cohen (1992), the following rule of thumb applies when dealing with effect sizes (Tables 4 and 5).

RESULTS AND DISCUSSION

Inferential statistics

The dependent variable for the study was Tax Compliance. Q1, Q2, Q3, Q4. Q5, Q6, Q7 and Q8 were

Table 2. The one-way analysis of variance (ANOVA).

Model	Df	SS	MS	F-statistic
Treatment	$k-1$	SSTR	$MSTR = \frac{SSR}{k-1}$	
Residual	$n-k$	SSE	$MSE = \frac{SSE}{n-k}$	$F = \frac{MSTR}{MSE}$
Total	$n-1$	SST		

Table 3. The alternative one-way analysis of variance (ANOVA).

Model	Df	SS	MS	F-statistic
Between	$k-1$	SSB	$MSB = \frac{SSB}{k-1}$	
Within	$n-k$	SSW	$MSW = \frac{SSW}{n-k}$	$F = \frac{MSB}{MSW}$
Total	$n-1$	SST		

MSB = Between Sum of Squares. MSW = Within Sum of Squares.

aggregated to form the Tax Compliance Variable. The independent variables for the study were income level, fines, audit probability and tax Rate. Q1 and Q2 represent income level variable; Q3 and Q4 represent the fines variable; Q5 and Q6 represent the audit probability variable; and Q7 and Q8 represent the tax rate variable.

Hypothesis testing

Relationship between level of income and tax compliance

Research Question 1: Is there a statistical relationship between income level of self-employed persons and their tax compliance intentions?
H_{01}: There is no statistical relationship between level of income and tax compliance
H_{A1}: There is a statistical relationship between level of income and tax compliance

Table 6 presents the results for the correlation estimate between level of income and tax compliance. According to the results, there is a weak positive relationship between the level of income and tax compliance ($r = 0.295$, $p < 0.01$). Moreover, since the p-value was less than 0.01 we reject the null hypothesis and conclude that higher income level does not encourage tax non-compliance.

Relationship between higher fines and tax compliance

Research question 2: Is there a statistical relationship between higher fines or penalties and tax compliance intentions of self-employed persons?

H_{02}: There is no statistical relationship between higher fines and tax compliance intentions.
H_{A2}: There is a statistical relationship between higher fines and tax compliance intentions.

Table 7 presents the correlation analysis between higher fines and tax compliance. According to the results, there is a moderate negative relationship between higher fines and tax compliance ($r = -0.558$, $p < 0.01$). The results further imply the null hypothesis is not accepted since the p-value was less than 0.01.

Relationship between audit probability and tax compliance

Research question 3: Is there a statistical relationship

Table 4. Rule of thumb when dealing with effect sizes.

Effect estimate	Meaning
0.01	Small effect
0.06	Medium effect
0.14	Large effect

Adapted from "A power primer" by Cohen (1992). *Psychological Bulletin*, *112*(1), 155-159.

Table 5. Definition of variables.

Variable	Variable type	Indicators under variable
Income Level	Independent	Q1 and Q2
Fines	Independent	Q3 and Q4
Audit Probability	Independent	Q5 and Q6
Tax Rate	Independent	Q7 and Q8
Tax Compliance	Dependent	Q1, Q2, Q3, Q4, Q5, Q6, Q7 and Q8

Table 6. Pearson correlation between income level and tax compliance.

Correlation	Tax_compliance		
	Pearson Correlation	Sig (2-tailed)	N
Income_level	0.295**	0.000	453 corrected

*Significant at 0.05; **Significant at 0.01.

Table 7. Pearson correlation between higher fines and tax compliance.

Correlation	Tax_compliance		
	Pearson Correlation	Sig (2-tailed)	N
Higher_fines	-0.558**	0.000	453

*Significant at 0.05; **Significant at 0.01.

Table 8. Pearson correlation between audit probability and tax compliance.

Correlation	Tax_Compliance		
	Pearson Correlation	Sig (2-tailed)	N
Audit-Probability	0.669**	0.000	453

*Significant at 0.05; **Significant at 0.01.

between audit probability and tax compliance intentions of Self-employed persons?

H_{03}: There is no statistical relationship between audit probability and tax compliance intentions.
H_{A3}: There is a statistical relationship between audit probability and tax compliance intentions.

Table 8 summarizes the results for the correlation analysis between audit probability and tax compliance. According to the results, there is a moderate positive relationship between audit probability and tax compliance ($r = 0.669$, $p < 0.01$). The results further reveal that the null hypothesis rejected the null hypothesis since the p-value was less than 0.01.

Relationship between tax rate and tax compliance

Research question 4: Is there a statistical relationship between higher income tax rate and tax compliance intentions of Self-employed persons?

Table 9. Pearson correlation of higher tax rate and tax compliance.

Correlation	Tax_Compliance		
	Pearson Correlation	Sig (2-tailed)	N
Higher_Tax_Rate	-0.435**	0.000	453

*Significant at 0.05; **Significant at 0.01.

Table 10. Conclusions for hypotheses results.

Hypothesis	Supported	Not Supported
H_1: There is a relationship between income level and tax compliance	✓	
H_2: There is a relationship between fines and tax compliance	✓	
H_3: There is a relationship between audit probability and tax compliance	✓	
H_4: There is a relationship between tax rate and tax compliance	✓	

Table 11. Summary for multiple regression model.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.843	0.711	0.709	22.573

Table 12. Analysis of variance for multiple regression model.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	562333.444	4	140583.361	275.905	0.000**
Residual	228272.211	448	509.536		
Total	790605.656	452			

*Significant at 0.05; **Significant at 0.01.

H_{04}: There is no statistical relationship between higher tax rate and tax compliance intentions.

H_{A4}: There is a statistical relationship between higher tax rate and tax compliance.

Table 9 presents the results for the correlation analysis between increase in tax rate and tax compliance. According to the results, there exist a moderate negative relationship between increase in tax rate and tax compliance ($r = -0.435$, $p < 0.01$). The results further give credence to the fact that the study fails to accept the null hypothesis.

Hypothesis results

Multiple regression analysis

Table 10 presents the results for the model summary with regard to the multiple regression model. The correlation estimates between the dependent variable (tax_compliance) and the independent variables (Income_level, fines, Audit_probability and tax_rate) was 0.843, which was considered to be very strong. It further implies that there was a positively strong correlation between the dependent variable and the independent variables. The table also gives us the result for the R-Square, which was found to be 0.711. The result for the R-Square implies that 71.1% of the variation in the dependent variable is explained by the independent variables (Table 11).

Analysis of variance for multiple regression model

The hypothesis for the analysis of variance for the multiple regression model is:

H_0: The multiple regression model is not sufficient for prediction
H_A: The multiple regression model is sufficient for prediction

Table 12 presents the analysis of variance results for the multiple regression model. According to the results, the

Table 13. Regression coefficients of multiple regression model.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-59.167	3.945	-	-14.999	0.000**
Audit-probability	0.274	0.014	0.592	18.956	0.000**
Tax_rate	0.003	0.009	0.011	0.342	0.732
Fines	0.268	0.015	0.471	18.261	0.000**
Income_level	0.057	0.009	0.164	6.352	0.000**

Table 14. Collinearity statistics.

Variable	Tolerance	VIF
Audit_probability	0.662	1.511
Tax_rate	0.657	1.523
Fines	0.970	1.031
Income_level	0.967	1.034

model was significant in predicting tax compliance since the p-value was less than 0.01 ($F = 275.905$, $p < 0.01$), hence we reject the null hypothesis and conclude that the model is good for prediction.

Regression coefficients

Table 13 presents the results for the coefficients of the multiple regression analysis. It summarizes the estimates of the regression coefficients and gives us the regression parameters that were significant in predicting tax compliance. All the regression parameters were significant in predicting tax compliance with the exception of higher tax rate ($\beta = 0.011$, $p > 0.05$). The audit probability variable was significant in predicting tax compliance ($\beta = 0.592$, $p < 0.01$) and it obtained the highest regression estimate, which implies that it impacted the most on tax compliance among all the independent variables. Higher fine was also significant in predicting tax compliance ($\beta = 0.471$, $p < 0.01$) and it was the variable that obtained the second highest regression estimate. The level of income was also significant in predicting tax compliance ($\beta = 0.164$, $p < 0.01$) and it obtained the third highest regression estimate.

The multiple regression model is given by: tax_ compliance = 0.592audit_probability + 0.011higher_ tax_rate + 0.471higher_fines + 0.164income_level

Multicollinearity diagnostic test

Table 14 summarizes the results for the collinearity statistics. According to Field (2013), if the Value for the Variance Inflation Factor for the independent variables are between 1 and 10 then there are no multicollinearity issues with the model. From the results, it can be observed that the Variance Inflation Factor (VIF) values for the independent variables are between 1 and 10, respectively which implies the conditions for multicollinearity have been satisfied hence there are no multicollinearity issues with the model.

Analysis of variance for homogeneity of variance

The hypothesis for homogeneity of variance is:
H_0: The variances are not equal
H_A: The variances are equal

Table 15 presents the results for the homogeneity of variance analysis. According to the results, all the variables had p-values that were less than 0.01, which is captured in the sig. column of the table. According to Field (2013), if the p-value is greater than the alpha level then we fail to reject the null hypothesis, but if the p-value is less than the alpha level then we fail to accept the null hypothesis. From the results, it can be concluded that the p-value for all the variables was less than 0.01 hence we reject the null hypothesis since the homogeneity of variance assumption has been met.

Analysis of variance for all independent variables on tax compliance

Table 16 presents the results for the analysis of variance between the dependent variable and the independent variables. According to the results, all the variables have impacts on Tax Compliance with audit probability having the highest impact ($F = 122.247$, $p < 0.01$) followed by higher fines ($F = 55.178$, $p < 0.01$), higher tax rate ($F = 30.093$, $p < 0.01$) and finally higher income level ($F = 11.948$, $p < 0.01$).

Calculating effect sizes

Table 17 presents the results for the effect size analysis. In order to ascertain the effect each independent variable had on eta-squared, the effect sizes had to be calculated. The effect size was calculated by Eta-squared = sum of squares between groups/total sum of squares.

According to Cohen (1992), the following rules of

Table 15. Homogeneity of variance analysis.

Variable	Levene Statistic	df1	df2	Sig.
Audit_probability	40.022	13	439	0.000**
Tax_rate	231.755	13	439	0.000**
Fines	75.572	13	439	0.000**
Income_level	148.660	13	439	0.000**

*Significant at 0.05; **Significant at 0.01.

Table 16. Analysis of variance of all independent variables on tax compliance.

Variable		Sum of Squares	df	Mean Square	F	Sig.
Audit_probability	Between Groups	2895354.390	13	222719.568	122.247	0.000**
	Within Groups	799806.383	439	1821.882		
	Total	3695160.773	452			
Tax_rate	Between Groups	4102439.351	13	315572.258	30.093	0.000**
	Within Groups	4603572.927	439	10486.499		
	Total	8706012.278	452			
Fines	Between Groups	1517307.714	13	116715.978	55.178	0.000**
	Within Groups	928596.026	439	2115.253		
	Total	2445903.740	452			
Income_level	Between Groups	1710688.247	13	131591.404	11.948	0.000**
	Within Groups	4834824.910	439	11013.269		
	Total	6545513.157	452			

Table 17. Effect size analysis.

Variable	Eta-squared
Audit_probability	0.78
Tax_rate	0.47
Fines	0.62
Income_level	0.26

Table 18. Calculation for the Eta-squared values.

Effect estimate	Meaning
0.01	Small effect
0.06	Medium effect
0.14	Large effect

thumb apply when interpreting the results for effect sizes. According to the results, audit probability, higher tax rate, higher fines and higher income level had large effects on tax compliance. The results give further credence to the fact that tax compliance is impacted on by the variables under the study. Table 18 describes the Eta-squared values and their statistical meanings for the study.

The results obtained from the descriptive analyses indicate that 74.3% of the respondents sampled would increase their tax compliance if audit probability is high but 19.6% would not increase their tax compliance if audit probability is high. On the question on whether self-employed persons would comply more or less if tax rate is high, 85.4% of them would reduce tax compliance but 11.2% would not reduce their tax compliance. Responses obtained from the respondents on the effects or relationship between higher fines and their tax compliance, 75.5% would decrease their compliance due to higher fines for engaging in income tax non-compliance and 18.1% would not decrease their tax compliance due to higher fines. The results obtained from the relationship between higher income level and tax compliance among self-employed persons indicate that 97.5% of respondents would increase their tax compliance if their business income level was high and 0.2% would not increase their tax compliance. These hypothetical questions were aimed at soliciting unbiased responses from the respondents taking a clue from previous research studies (Nsor-ambala 2015). The study

observed that responses from survey on tax compliance are unreliable due to responses biases and lack of perfect recall by respondents (Wilson and Sheffrin, 2005). However, in order to obtain holistic picture of the real tax compliance intentions of self-employed persons, direct questions were also administered to the same respondents in addition to the hypothetical questions to test for consistency and reliability in their responses and the results obtained from the direct questions are shown in the following.

On the question of whether the respondents surveyed had been audited in the past, 61.4% said their accounts had been audited by their local tax office in the past and 38.6% had not been audited before. Out of the 64% of those who have had past auditing experience, 77.5% would not increase their tax compliance as a result of past auditing and 22.5 would increase their compliance as a result of the previous audits. However, 66.7% of the respondents who had not had past auditing experience said that their tax compliance has reduced as a result of the absence of past auditing experience and 33.3% have not had a reduction in their tax compliance level despite the absence of past audits. On the direct question of income level and its relationship with tax compliance, 92.9% of the respondents would increase their tax compliance if their business income increased and 7.1% said their tax compliance would not witness an increase if business income increased. On the knowledge of current income tax rates, 68.9% of the respondents know their current income tax rate but 31.1% do not. Out of those who know their current income tax rate, 98.7% view it as high but 1.3% do not view it as high, however, all the self-employed persons who know their current income tax rate would increase their tax compliance if the rate was reduced.

On the question on the knowledge of the existence of mandatory fines for non-compliance, all the respondents are aware of their existence, 89.4% had not paid a fine in the past for income tax non-compliance but 10.2% had done so in the past. An overwhelming 95.7% of those who had paid a fine for non-compliance in the past perceive the fine as enough deterrent from future non-compliance but 4.3% said the past fine payment would not deter them from future income tax non-compliance. 94.2% of respondents did not reduce their tax compliance when their income fell in the past but 5.8% had a reduction in their compliance when their business income fell in the past. 92.7% of those who had reduced their tax compliance when their business income fell in the past, said given another opportunity, they would again reduce their business income when their future business incomes fall. The results obtained from the correlation analysis indicate that there is a strong significant negative relationship between higher and tax compliance intentions. On the question of whether there is a statistical relationship between audit probability and tax compliance intentions among Self-employed persons, the correction analysis results point to a strong positive relationship between audit probability and tax compliance. The outcome of the response consistency and reliability test show that while the responses from the direct and hypothetical questions were positive on income level, fines and tax rate, they were negative on audit probability to the extent that while respondents saw nothing wrong with other taxpayers engaging in tax non-compliance due to absence of auditing, they themselves would not engage in it.

As envisaged during the review of the tax compliance literature, self-employed persons in Ghana could be less tax compliant if there is an increase in the tax rate on their taxable incomes, but could rather declare more incomes if income tax rates are reduced. The only major study that has observed a significant positive relationship between tax rate and tax compliance was by Yitzhaki (1974) and Papp and Takáts (2008), but the current study did not support such findings. The findings of this study are also in line with the self-employed persons' awareness of the prevailing tax rates applicable to them as obtained from the descriptive analysis.

The result of the effect of fines on tax compliance did not conform to expect findings. It was expected that higher fines should induce greater tax compliance, but the results from this study point to a significant negative relationship between fines and tax compliance. Even though findings from previous related studies predominantly point to positive relationship between higher fines and tax compliance, albeit insignificant and even negligible (Ali et al., 2001; Andreoni et al., 1998; Collins and Plumlee, 1991; Fjeldstad and Semboja, 2000; Idson et al., 2000; Pommerehne and Weck-Hannemann, 1996; Spicer and Thomas, 1976). Higher fines have even been described as counter-productive and could lead to tax resistance, while some few studies do support this study's findings that higher fines induce greater tax non-compliance or increased tax evasion (Alm et al., 1992; 1995; Park and Hyun, 2003).

Conclusions

The findings made from this study are mirrored in the observation made by BĂTrÂNcea et al. (2012), which says that developing and using adequate strategies to unearth the reasons, which drive taxpayers' compliance decisions, should be more useful to tax administrators and tax policy makers than strictly applying the tax laws and regulations to enforce compliance. This study explored the relationships between higher income tax rates, fines, audit probability and income level and tax compliance intentions of self-employed persons in Ghana surveying the registered Self-employed persons in the 15 Small Taxpayers 'Offices in the Greater Accra tax jurisdiction. Previous tax compliance studies, which explored the factors affecting tax compliance, were divided along pure neoclassical economic, behavioural

and fiscal psychology lines. Tax compliance studies based on the neoclassical economic view have not produced a clear direction on the relationships between tax rate, fines and audit rate, and income level on tax compliance intentions. According to the basic model upon which this study was based, individuals are utility-maximisers and would engage in tax non-compliance as long as the benefit of successful evasion exceeds the cost of unsuccessful tax cheating. Therefore, the model prescribes that effective enforcement and penalty mechanisms are the surest ways of curbing the non-compliance menace among self-employed persons since these taxpayers studied demonstrated that their tax compliance are still largely influence by economic factors. The results from this study support the position of the basic economic model that higher audit probability encourages greater tax compliance among individuals, but do not support the assertion that higher fines or penalty generates greater tax compliance.

The theory of reasoned action has observed that different behaviours call for different interventions and that to influence intentions and behaviour, changes in the relevant salient, normative, or control beliefs are required. Such interventions could be sanctions, fines, or penalties. However, the results from this study on the effect of higher fines on tax compliance are at variance with this theory. Whereas the theory predicts that sanctions or fines could discourage the socially undesirable behaviour such as tax evasion or non-compliance, the findings from this study suggest that higher fines do not discourage tax non-compliance and that excessive fines could lead to tax resistance.

The results from the effect of greater audits on tax compliance also support the prospect theory. This theory posited that tax compliance among individuals is low because the incomes of individuals and small business are usually not subjected to third-party scrutiny and reporting. Individuals and small business owners also view tax payment as out-of-pocket cost and, therefore, constitute a loss frame. To improve compliance, therefore, incomes must be subjected to audit scrutiny. The results obtained from the relationship between audit probability and tax compliance of self-employed persons in Ghana, suggest that higher audit probability has the most significant statistical relationship with tax compliance. Higher income levels also attract greater tax compliance, implying that taxpayers under this study could declare more income if their income is high, but lesser income if their income is low. The tax implication of this result is that self-employed persons as individuals, with lower levels of income, would always conceal income from tax authorities unless there are elaborate and frequent audit mechanisms put in place to check non-compliance.

Results from the current study also indicate that with the exception of the relationship between fines and tax compliance, the three other independent variables (audit probability of audit, income level, and higher tax rate) have statistical relationships with tax compliance intentions as expected. While higher audit probability and higher income level generate higher compliance, higher tax rates encourage lower compliance among self-employed persons in conformity with results from related tax compliance studies. This study rather found that higher fines has an inverse relationship with tax compliance and that higher fines generate lower tax compliance and increased tax noncompliance among self-employed persons in Ghana. The result from the effect of fines on tax compliance from this study adds to the few empirical studies which also point to an inverse relationship between higher fines and tax compliance. Results from the multiple regression analyses indicate that higher audit probability had the most significant impact on tax compliance, followed by higher fines, higher tax rate, and level of income having the lowest impact on tax compliance. This means that the Ghanaian tax agency, the GRA, must place greater emphasis on tax audits and less emphasis on fines to improve tax compliance among small business owners. Generally, it is accepted that payment of taxes is not a pleasant choice for any taxpayer and therefore given the option, many individuals would opt out of the tax bracket. Therefore, non-compliance becomes an easy option for many taxpayers who observe lack of infrastructural developments from the taxes that are collected from them by the tax agency and utilized by government. The observation made in this study was that many self-employed persons especially those operating in the shadow economy deliberately do so to escape the tax net as a result of apparent lack of exchange equity from taxes paid by existing taxpayers.

Based on the observations and findings made from this study, we recommend that the tax agency (GRA) must institute elaborate tax support and provision of tangible social interventions especially in the areas where self-employed persons operate with the motive of winning back their confidence and support with an ultimate objective of improving their tax compliance. Another observation made in this study was that many self-employed persons were completely unaware of the income tax rates applicable to their business incomes and some were also not well informed about the existing penalties or fines for non-compliance. This lack of knowledge may have accounted for some unintended non-compliance decisions. Tax education has been noted in the tax literature as being very effective in improving tax compliance among individuals. The tax agency must improve or introduce new tax educational schemes targeted mainly at individuals and self-employed persons since this group presents the greatest threat to effective and efficient tax revenue generation in many tax jurisdictions across the globe especially in developing economies. The tax agency could be guided by these recommendations by ensuring that self-

employed persons are given the necessary attention and consideration in future policy formulation in order to improve tax compliance of self-employed persons.

There is empirical evidence in the literature which points to lack of prior research into compliance intentions of unregistered self-employed persons and individuals. There has been a preponderance of research into tax compliance decisions of actual taxpayers to the exclusion of non-taxpayers. Therefore, we recommend for a study to be conducted to explore factors that encourage tax noncompliance and evasion among non-registered self-employed persons, which could add to the tax compliance literature. The anticipated operational challenge with the implementation of this recommendation could bother on issues of access to official taxpayers' data and the soliciting of unconditional cooperation from this category of potential taxpayers. This challenge stems from previously observed operational difficulties encountered by tax research scholars in addressing this research problem.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Alabede JO, Ariffin ZBZ, Md Idris K (2011). Public Governance Quality and Tax Compliance Behavior in Nigeria: The Moderating Role of Financial Condition and Risk Preference. Issues in Social and Environmental Accounting 5(1):3-24.

Ali MM, Cecil HW, Knoblett JA (2001). Tax rate and tax compliance. Atlantic Economic Journal 29(2):186-203.

Allingham MG, Sandmo A (1972). Income Tax Evasion: A theoretical Analysis. Journal of Public Economics 1:323-338.

Alm J, Jackson B, McKee M (1992). Estimating the determinants of taxpayer compliance with experimental data. National Tax Journal 45(45):107-114.

Alm J, Torgler B (2011). Do Ethics Matter? Tax Compliance and Morality. Journal of Business Ethics 101(4):635-651.

Alm J, Sanchez I, De Juan A (1995). Economic and non economic factors in tax compliance. Kyklos 48(1):3-18.

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

Babbie E (2002). Survey research methods. Belmont: Wandsworth Press

BĂTrÂNcea LM, Nichita RA, BĂTrÂNcea I (2012). Understanding the Determinants of Tax Compliance Behavior As a Prerequisite for Increasing Public Levies. USV Annals of Economics and Public Administration 12(1(15)):201-210.

Brondolo J (2009). Collecting Taxes During an Economic Crisis : Challenges and Policy Options. IMF Staff Position Notes 17:1-38.

Clotfelter CT (1983a). Tax evasion and tax rates. The Review of Economics and Statistics XLV(3):363-373.

Clotfelter CT (1983b). Tax evasion and tax rates: An Analysis of Individual Returns. The Review of Economics and Statistics 65(3):363-373.

Cohen J (1992). A Power Primer. Psychological Bulletin 112(1):155-159.

Collins JH, Plumlee RD (1991). The Taxpayer's Labor and Reporting Decision: The Effect of Audit Schemes. The Accounting Review 66(3):559-576.

Contos G, Eftekharzadeh A, Guyton J, Erard B, Stilmar S (2009). Econometric simulation of the income tax compliance process for small businesses. In Winter Simulation Conference. Winter Simulation Conference pp. 2902-2914.

Creswell JW (2007). Qualitative Inquiry and Research Design: Choosing among Five Approaches (3rd ed.). Thousand Oaks, California: Sage.

Creswell JW (2009). Research Design: Qualitative, Quantitative and Mixed Methods Approaches. Sage Publication (3rd ed.). Thousand Oaks, California: Sage.

Cummings RG, Martinez-Vazquez J, McKee M, Torgler B (2009). Tax morale affects tax compliance: Evidence from surveys and an artefactual field experiment. Journal of Economic Behavior and Organization 70(3):447-457.

Devos K (2014). Extension of the Economic Deterrence Model. In Factors Influencing Individual Taxpayer Compliance Behaviour. Springer, Dordrecht pp. 67-98.

Dhami S, Al-Nowaihi A (2007). Why do people pay taxes? Prospect theory versus expected utility theory. Journal of Economic Behavior and Organization 64(1):171-192.

Draper NR, Smith H, Pownell E (1966). Applied regression analysis. Vol. 3 Wiley. New York, NY.

Elffers H, Weigel RH, Hessing DJ (1987). The consequences of different strategies for measuring tax evasion behavior. Journal of Economic Psychology 8(3):311-337.

Engstrom P, Holmlund B (2009). Tax evasion and self-employment in a high-tax country: evidence from Sweden. Applied Economics 41(19):2419-2430.

Feinstein JS (1991). An econometric analysis of income tax evasion and its detection. Analysis 22(I):14-35.

Field A (2013). Discovering Statistics Using IBM SPSS Statistics. Sage Publications Ltd, London.

Fishbein M, Ajzen I (2010). Predicting and Changing Behaviour: The Reasoned Action Approach (Kindle). New York and Hove: Psychology Pess, Taylor and Francis Group.

Fjeldstad O-H, Semboja J (2000). Dilemmas of fiscal decentralisation: A study of local government taxation in Tanzania. In Forum for Development Studies 27(1):7-41.

Gerxhani K, Schram A (2006). Tax evasion and income source: A comparative experimental study. Journal of Economic Psychology 27(3):402-422.

Hessing DJ, Elffers H, Robben HSJ, Webley P (1992). Does Deterrence Deter? Measuring the Effects of Deterrence on Tax Compliance in Field Studies and Experimental Studies. In: Slemrod J (ed.), Why People Pay Taxes. Michigan: The University of Michigan Press 1:291-305.

Hyun JK (2005) Tax Compliances in Korea and Japan: Why are they different? Policy Research Institute, Ministry of Finance, Japan, February 2005. pp. 1-15.

Idson LC, Liberman N, Higgins ET (2000). Distinguishing Gains from Nonlosses and Losses from Nongains: A Regulatory Focus Perspective on Hedonic Intensity. Journal of Experimental Social Psychology 36(3):252-274.

Jackson SB, Hatfield RC (2005). A Note on the Relation between Frames, Perceptions, and Taxpayer Behavior. Contemporary Accounting Research 22(1):145-164.

Joshi A, Prichard W, Heady C (2013). Research in Brief Taxing the Informal Economy: Challenges, Possibilities and. Tax Justice Network-Africa 3(3):2-23.

Joulfaian D, Rider M (1998). Differential taxation and tax evasion by small business. National Tax Journal 51(4):675-687.

Kahneman D, Tversky A (2000). Choices, values, and frames. New York; Cambridge, UK: Russell Sage Foundation.

Kamleitner B, Korunka C, Kirchler E (2012). Tax compliance of small business owners: A review. International Journal of Entrepreneurial Behaviour and Research 18(3):330-351.

Mason R, Calvin L (1978). A Study of Admitted Income Tax Evasion, Law and Society Review 13:73-89.

Moser DV, Evans III JH, Kim CK (1995). Moser The Effects of Horizontal and Exchange Inequity on Tax Reporting Decisions. The Accounting Review 70:619-634.

Nsor-ambala R (2015). Influence of individual ethical orientation on tax compliance : Evidence among Ghanaian Taxpayers. Journal of Accounting and Taxation 7(6):98-105.

Orviska M, Hudson J (2003). Tax evasion, civic duty and the law abiding citizen. European Journal of Political Economy 19:83-102.
Papp TK, Takáts E (2008). Tax Rate Cuts and Tax Compliance: The Laffer Curve Revisited. IMF Working Papers (Vol. 8).
Park C, Hyun J (2003). Examining the Determinants of Tax Compliance by Experimental Data: A Case of Korea. Journal of Policy Modeling 25(8):673-684.
Pickhardt M, Prinz A (2014). Behavioral dynamics of tax evasion – A survey. Journal of Economic Psychology 40:1-19.
Picur R, Riahi-Belkaoui A (2006). The impact of bureaucracy, corruption and tax compliance. Review of Accounting and Finance 5(2):174-180. https://doi.org/10.1108/14757700610668985
Pommerehne WW, Weck-Hannemann H (1996). Tax rates, tax administration and income tax evasion in Switzerland. Public Choice 88(1/2):161-170.
Sheffrin SM, Triest RK (1992). Can brute deterrence backfire? Perceptions and attitudes in taxpayer compliance" In why people pay taxes: Tax compliance and enforcement, edited by Joel Slemrod, 193-218. Ann Arbor. University of Michigan Press, 1992. Available at: https://ideas.repec.org/p/fth/caldav/373.html
Smith KW, Stalans LJ (1991) Encouraging tax compliance with positive incentives: A conceptual framework and research directions. Law and Policy 13(1):35-53
Song Y, Yarbrough TE (1978). Tax ethics and taxpayer attitudes: A survey. Public Administration Review 38(5):442-453.
Spicer MW, Lundstedt SB (1976). Understanding tax evasion. Public Finance= Finances Publiques 31(2):295-305.
Richardson G (2006). Determinants of tax evasion: A cross-country investigation. Journal of International Accounting, Auditing and Taxation 15(2):150-169.
Torgler B, Schneider F, Schaltegger CA (2010). Local autonomy, tax morale, and the shadow economy. Public Choice 144(1-2):293-321.
Vogel J (1974). Taxation and public opinion in Sweden: An interpretation of recent survey data. National Tax Journal 27(4):499-513.
Wahl I, Kastlunger B, Kirchler E (2010). Trust in authorities and power to enforce tax compliance: An empirical analysis of the "Slippery Slope Framework". Law and Policy 32(4):383-406.
Wilson JIF, Sheffrin SM (2005). Understanding Surveys of Taxpayer Honesty. Finanzarchiv 61(2):256-274.
Yitzhaki S (1974). A Note on Income Tax Evasion: A Theoretical Analysis. Journal of Public Economics 3:201-201.