eJournal of Tax Research

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Factors Influencing taxpayers' compliance with the tax system: An empirical study in Mekelle City, Ethiopia

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Abstract

This paper attempted to reveal determinants of taxpayers' compliance with the tax system. Nine tax compliance determinants were examined; the examined tax compliance determinants were: probability of being audited; perception of government spending; perception of equity and fairness; penalty, financial constraint; changes to current government policies; referral group; the role of the tax authority; and tax knowledge. The study used a cross-sectional survey method of research design. Given the scaled ranking information of the dependent variable (tax compliance), an ordered probit was applied to examine determinants of tax compliance in Mekelle city, Ethiopia. The study results from the survey conducted in Mekelle using 102 respondents, indicate that tax compliance was influenced by the probability of being audited, financial constraints, and changes in government policy. The results of this study can inform policymakers how the determinants influence tax compliance behaviour. The analysis focuses on tax compliance and its determinants and is therefore subject to an underlying assumption of tax payers' understanding of tax and other potentially relevant information. The results of this study also provide specific insights and allow policy makers to gain a better understanding of the key variables that are significantly associated with tax compliance and enable them to implement suitable strategies to minimise potentially damaging factors, and should also allow them to improve their government's tax revenue collections. Tax collection is evidenced to be low in the country; hence, studying the factors influencing tax compliance is of enormous significance. Such a study becomes imperative given limited research so far undertaken in the area. Moreover, this study attempts to enrich the existing literature by providing a clearer picture and a holistic view of taxpayers' compliance behaviour from a developing country's perspective.

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1.   INTRODUCTION

Tax non-compliance is a serious challenge slackening income tax administration and tax revenue performance in Ethiopia, as it does in some other developing countries. Like other developing countries, Ethiopia faces hurdles in raising revenue to the required level in order to scale up the development endeavours. Ethiopia has experienced an unswerving surplus expenditure over revenue for a sufficiently long period of time. To address this problem, the government introduced direct and indirect taxes to improve public revenue although prior statistical evidence proves that the contribution of income taxes to the government's total revenue remained consistently low.

The tax compliance literature has provided evidence suggesting that compliance is influenced by numerous factors (Brook, 2001). Scholars identified these factors as economic, social and psychological (Brook, 2001; Devos, 2008; Kirchler, 2007). To mitigate the challenge of tax non-compliance, it is necessary to understand factors influencing an individual's decision to comply with tax laws.

According to Kirchler (2007) and Loo (2006), tax compliance determinants are classified in four categories based on an interdisciplinary perspective representing a wider perspective of tax compliance determinants compared to other researchers. The four categories are 1) economic factors (tax rates, tax audits and perceptions of government spending); 2) institutional factors (the role of the tax authority, simplicity of the tax returns and administration and probability of detection); 3) social factors (ethics and attitude, perceptions of equity and fairness, political affiliation and changes on current government policy, referent groups); and 4) individual factors (personal financial constraints, awareness of offences and of penalties).

The extent of the effect of the factors influencing tax compliance is not well understood and studies have not been carried out in Mekelle city, Ethiopia to the best of the authors' knowledge. Therefore, examining economic, institutional, social, individual and selected demographic factors that influence tax compliance behaviour in Mekelle city, Ethiopia is the primary purpose of this study.

2.   THEORETICAL FRAMEWORK AND HYPOTHESES

The following is a brief review of the literature with regard to the determinants of tax compliance behaviour.

2.1   Economic factors

Economic factors in relation to tax compliance refer to actions which are associated with the costs and benefits of performing the actions (Loo, 2006). Hasseldine (1993), and Song and Yarbrough (1978) assumed that taxpayers are rational economic evaders who likely would assess the costs and/or benefits of evasion. The tax compliance determinants associated with economic factors such as tax rates, tax audits and perceptions of government spending are explored in more detail.

2.1.1   Tax audits

Some studies claimed that audits have a positive impact on tax evasions (Jackson and Jaouen, 1989; Shanmugam, 2003; Dubin, 2004). These findings suggest that in self assessment systems, tax audits can play an indispensable role and their essential role is to increase voluntary compliance. Frequencies and meticulousness of audits could encourage taxpayers to be more prudent in completing their tax returns, reporting all income and claiming the correct deductions to ascertain their tax liability. In contrast, taxpayers who have never been audited might be tempted to under report their actual income and claim false deductions.

Hypothesis 1— Probability of being audited is positively correlated with tax compliance.

2.1.2   Perceptions of government spending

Taxpayers, and especially those who pay high amounts of tax, will be sensitive to what the government spends their money on. If the government is wisely spending the national revenue, for example, for basic facilities like education, health and safety and public transportation, it is likely that voluntary compliance will increase. In contrast, if taxpayers perceive that the government is spending too much on something considered unnecessary or unbeneficial to them, then taxpayers will feel betrayed and attempt to evade.

Hypothesis 2 — Positive perception of government spending is positively correlated with tax compliance.

2.2   Institutional factors

While taxpayers are influenced by their pure economic concerns either to evade or not to evade taxes, evidence suggests that institutional factors also play vital role in their compliance decisions.

2.2.1   Role (efficiency) of the tax authority/government

For many aspects of tax compliance, there is a debate in literature as to how the effective operation of the tax system by the tax authorities influences taxpayers' compliance behaviour. The role of the tax authority in minimising the tax gap and increasing voluntary compliance is clearly very important. Hasseldine and Li (1999) illustrated tax compliance is placing the government and the tax authority as the main party that need to be continuously efficient in administering the tax system in order to curtail tax evasion. Besides, the study of Richardson (2008) also suggested that the role of a government has a significant positive impact on determining attitudes toward tax.

Hypothesis 3 — The role (efficiency) of the tax authority is positively correlated with tax compliance.

2.3   Social factors

Tax compliance determinants from a social perspective relates to taxpayers' willingness to comply with tax laws in response to other people's behaviour and their social environment (i.e. the government, friends and family members) (Torgler, 2007). On the other hand, Kirchler (2007) suggested that social factors should be viewed in a broader sense than Torgler's perspective; this includes the psychology of the taxpayers. The factors discussed in this section are therefore perceptions of equity and fairness, changes to current government policy and referent groups.

2.3.1   Perceptions of equity or fairness

One of the main principles of the taxation system design is equity or fairness, which can be perceived via three dimensional views – horizontal equity (people with the same income or wealth brackets should pay the same amount of taxes), vertical equity (taxes paid increase with the amount of the tax base) and Exchange Equity (Wallschultzky 1984; Richardson, 2006). The perceived fairness of the tax system also has an influence on the inclination towards tax evasion (Jackson and Milliron, 1986; Richardson, 2008).

Hypothesis 4 ─ Positive perception of equity in the tax system is positively correlated with tax compliance.

2.3.2   Changes to current government policies

Political stability and the ruling party in a country might play a significant role in determining tax evasion behaviour. For instance, if an individual favours the ruling party, he might choose to be compliant because he believes that the government is trusted, efficient and equitable. Conversely, a taxpayer from the opposition party might be more non-compliant because he perceives that the government is not on his side. Studies have disclosed that the government decisions and changes to policies in accordance with the economic and political situation have a significant impact on compliance. For example, a positive move made by the government such as an increase in tax rebate (Hasseldine and Hite, 2003) is likely to increase taxpayers' compliance.

Hypothesis 5 ─ Unfavourably perceived changes to current government policies are negatively correlated with tax compliance.

2.3.3   Referent groups (family and friends)

Research in ascertaining the importance of referent groups such as family members and friends in tax compliance is limited although Ajzen and Fishbein (1980) (in their Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)) theorised that referent groups play a significant role in determining people's intentions and behaviour. Decisions either to evade or not to evade tax sometimes are influenced by family members or friends (for example, Allingham and Sandmo (1972)) although the extent of the influence

was not clearly stated in this research. Therefore, the influence of referent groups is seemingly important in making a decision, particularly involving monetary aspects and the obedience to laws (tax compliance).

Hypothesis 6 ─ The influence of referent group is positively correlated with tax compliance.

2.4   Individual factors

Decisions either to evade or not to evade taxes are heavily reliant on taxpayers' personal judgment (Mohani, 2001). Personal circumstantial factors like personal financial constraints and awareness of penalties and offences are therefore likely to have a significant impact on taxpayer compliance behaviour.

2.4.1   *Personal financial constraints*

Personal financial constraints are believed to have an impact on tax evasion as financial distress faced by an individual and may encourage him to prioritise what has to be paid first as basic survival needs (foods, clothing, housing etc.) or where immediate demand on limited income is enforced (for example, perceived threat of action from money lenders etc.) rather than tax liabilities. People who face personal financial problems are likely to be more prone to evade tax when compared to people in less financial distress (Mohani and Sheehan, 2004; Mohani, 2001).

Hypothesis 7 ─ Personal financial constraint is negatively correlated with tax compliance.

2.4.2   *Awareness of offences and penalties*

A theoretical economic model introduced by Allingham and Sandmo (1972) has clearly indicated that penalties as well as audit probability have an impact on tax compliance. The higher the penalty and the potential audit probability the greater the discouragement for potential tax evasion. If the taxpayers are aware of the offences they are committing when evading tax and the consequences of being non compliant taxpayers, they might reduce their tendency to evade tax.

Hypothesis 8 ─ Awareness of penalty is positively correlated with tax compliance.

2.4.3   *Tax knowledge*

The influence of tax knowledge on compliance behaviour has been described in various researches. The level of education received by taxpayers is an important factor that contributes to the understanding about taxation especially regarding the laws and regulations of taxation (Eriksen and Fallan, 1996). Previous studies have evidenced that tax knowledge has a very close

relationship with taxpayers' ability to understand the laws and regulations of taxation, and their ability to comply (Singh and Bhupalan, 2001).

Hypothesis 9 ─ Tax knowledge is positively correlated with tax compliance.

2.5 Demographics and other control variables

2.5.1 Gender

Some studies found that males are more compliant though other studies revealed contradictory results or no significant difference at all. As agreements on the findings still maintain, the need to explore current results is relevant. Hasseldine and Hite (2003) found that female taxpayers were more compliant than males. However, the study reported that males were more compliant compared to females when a negatively framed message was used, and females were more compliant than males when a positively framed message was used. In contrast, Richardson (2006) suggested that gender has no significant impact on compliance across a study of 45 countries.

Hypothesis 10 ─ Male tax payers are more tax compliant.

2.5.2 Income

Jackson and Milliron (1986) found that income level has a mixed and unclear impact on compliance, and some later research agrees with that statement (see Christian and Gupta, 1993: Hite, 1997). Although Jackson and Milliron (1986) did not clearly mention the reason, it is presumed that endogenous tax regulations among countries might contribute to inconsistent findings. For example, progressive tax rates might encourage the higher income group to evade rather than the lower income group because their (higher income group) tax rates and taxable income are high, thus, making the tax liabilities much higher than lower income group. In a country where income redistribution is not satisfying, the higher income group tends to evade more (Mohani, 2001) because the high income earner might feel betrayed and unfairly treated. Loo (2006) found that high income earners in Malaysia are prone to evading tax while Torgler (2007) reported that lower income earners in Western Germany were less compliant.

Hypothesis 11 ─ Higher income level is positively associated with better tax compliance.

2.5.3 Age

Demographic factors like age have long been researched by many researchers and findings are different along the way. For example Tittle (1980), Warneryd and Walerud (1982) and Wahlund (1992) posit negative association ─ older people are less compliant.

In contrast, Dubin, Graetz and Wilde (1987), Chung and Trivedi (2003) and Beron, Tuachen and Witte (1992) argued that age was positively related with compliance. However, there have been a significant number of studies which found no relationship between age and compliance (Spicer and Becker 1980 and Porcano, 1988). Mohani 2001 also found that older people are more compliant.

Hypothesis 12 ─ Older tax payers are tax compliant.

2.5.4 *Education*

Previous literature supports the direct, positive relationship between educational level and taxpayer compliance (Jackson and Miliron 1986). Chan, Troutman, and O'Bryan (2000) also postulate that education level is directly linked to a likelihood of compliance. Educated taxpayers may be aware of non-compliance opportunities, but their potentially better understanding of the tax system and higher level of moral development promote a more favourable taxpayer attitude and greater compliance.

Hypothesis 13 ─ Educational level has direct relationship with tax compliance.

The schematic presentation of the theoretical framework identified for this study purpose is presented below:

Figure 1: The description of variables and expected effect of the determinant and control variables
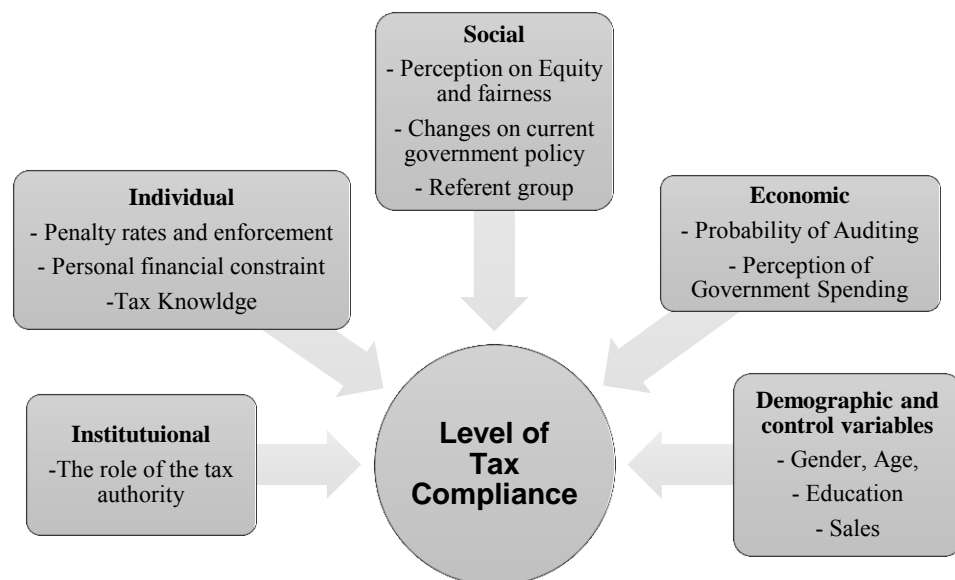
Source: Own construct

The following comprises a brief review of the literature with regard to the variables mentioned earlier.

Table 1: Variables description and expected associations with the level of tax compliance

Variables	Symbols	Unit of measurement	Expected signs/hypotheses
Dependant Variables			
Level of compliance	Compliance_Stat	**(1,2,3) Ordinal**	
Independant Variables			
Tax knowledge	Tax_knowldge	**(1,2,3) Ordinal**	+ (high tax knowledge, high compliance)
Probability of Auditing	Prob_Audi	(1-5 Likert Scale) Ordinal	+(high probability, high compliance)
Perception of Government Spending	Gov_Spend	(1-5 Likert Scale) Ordinal	+ (good perception, high compliance)
Perception on Equity and fairness	Equity_Fair	(1-5 Likert Scale) Ordinal	+ (good perception, high compliance)
Penalty rates and enforcement	Penality	(1-5 Likert Scale) Ordinal	+ (High penality, high compliance)
Personal financial constraint	Fina_Cons	(1-5 Likert Scale) Ordinal	- (crucial financial problem, low compliance)
Changes on current government policy	Gov_Policy	(1-5 Likert Scale) Ordinal	- (Changes to government policies, lower compliance)
Referent group	Referal1	(1-5 Likert Scale) Ordinal	+ (high influence, high compliance)
The role of the tax authority	RCA_Role	(1-5 Likert Scale) Ordinal	+ (High efficiency of tax authority, Higher Compliance)
Gender	Gender	(0-1) binary	- (Female= 0, higher compliance)
Income /Sales	Sales	**(1-7) Ordinal**	+ (High income, Higher Compliance)
Age	Age	**(1-8) Ordinal**	+ (Aged tax payers, Higher Compliance)
Education level	Educ	**(1-6) Ordinal**	+ (Aged tax payers, Higher Compliance)

3.   METHODOLOGY

3.1   Method

In order to have a better understanding of the situation and gather pertinent data, a survey method of data collection was employed. A structured questionnaire was distributed to 102 Category C taxpayers in three sub-cities of Mekelle, namely Semen, Hawiliti and Adi-haki. The study was carried out on Category C taxpaying business enterprises, whose annual turnover is not more than 100,000 birr. The motivation of considering Category C is that taxpayers in this group are considered hard to tax because the law doesn't require them to declare their income or keep books of account. Therefore, it can be said that they are non-compliant with the tax system owing to the absence of documenting their inventories and disclosure of their earnings.

3.2   Model

Tax compliance is measured through five items: the intention to evade paying tax , the intention to exaggerate deductions, how one feels about not evading income tax, how one feels about not exaggerating deductions, and the acceptability of tax evasion. For instance, acceptability of tax evasion can be measured by: "I wouldn't feel bad if I don't pay tax" (1 = completely agree, 5 = completely disagree). The average score over the five items will be taken as an index for tax compliance. Based on this score, taxpayers were categorized into three levels of compliance: low, medium, high. Given the scaled ranking information of the dependent variable, ordered logistic estimation is applied. The ordered logistics have the following form:

$$y_i * = \beta_0 + x_{1i}\beta_1 + x_{2i}\beta_2 \ldots x_{ki}\beta_k + \varepsilon_i$$

$$y_i * = x_i\ \beta + \varepsilon_i$$

where $y_i *$ is the dependant variable (levels of compliance) ; β is the vector of estimated parameters and x_i is the vector of explanatory variables ; ε_i is the error term, which is assumed to be normally distributed (zero mean and unit variance).

Yi, the observed ordinal variable, takes on values 0 through m according to the following scheme:

$$y_i = j \Leftrightarrow \mu_{j-1} < y_i^* \leq \mu_j ' \quad , \text{Where } j=0\ldots,m.$$

Like the models for binary data, the study is concerned with how changes in the explanatory variables transform into the probability of observing a particular level of compliance. Accordingly, the probability of each tax compliance level (low-y_1, medium-y_2, and high-y_3) will be computed as follows:

$y_i=1$ if $y_i* \leq u_1$

$y_i=2$ if $u_1< y_i* \leq u_2$

$y_i=3$ if $y_i* > u_2$

4. RESULTS

Nine variables were tested using ordered logistic regression, namely the probability of being audited, perception of government spending, perception of equity and fairness, penalties, financial constraints, changes to current government policy, roles of referent groups, roles of the tax authority and tax knowledge.

4.1   Correlation among variables

Table 2 illustrates the Spearman correlation matrix for dependent and independent variables. Based on Table 2, all independent variables except for Tax knowldge, Gov_Spend and. RCA_Role were significantly correlated with Compliance Stat. The highest correlation occurred between compliance stat and Prob_Audi (rs = -.38) followed Equity_Fair, Referal1. Gov_PolicyFina_Cons and Penality. According to univariate results in Table 2, it was suggested that Prob_Audi , Equity_Fair, Penality, Fina_Cons. Gov_Policy and Referal1 were the most significant determinants.

Table 2: Spearman correlation matrix for dependent, independent variables

	1	2	3	4	5	6	7	8	9	10
1.Compliance_Stat	1									
2. Tax_knowldge	0.09	1								
3.Prob_Audi	0.38(***)	0.07	1							
4. Gov_Spend	0.03	-0.19(*)	-0.15	1						
5. Equity_Fair	0.30(***)	-0.13	0.5314 (***)	-0.16	1					
6. Penality	-0.19(*)	0.10	0.20 (**)	-0.16	0.03	1				
7. Fina_Cons	-0.21(**)	0.01	0.16	0.01	0.15	0.23 (**)	1			
8. Gov_Policy	-0.25 (**)	0.11	0.37 (***)	-0.17 (*)	0.34 (***)	0.10	0.18 (*)	1		
9. Referal1	-0.30 (***)	0.16	0.47 (***)	-0.15	0.31 (***)	0.29 (***)	0.04	0.12	1	
10. RCA_Role	-0.13	0.04	0.10	0.01	0.03	0.31 (***)	0.23(**)	-0.14	0.25 (**)	1

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$.

4.2   Factors affecting tax compliance

4.2.1   Determinants of tax compliance — ordered Logistic regression result

Based on Table 3, ordered logistic regression analysis indicates that the factors affecting tax compliance were Probability of auditing, personal financial constraint, and changes on current government policy. Probability of auditing appears to be the main factor in determining tax compliance behaviour with Beta of --0.31 followed by Personal financial constraint, Changes on current government policy with Beta coefficient of -0.25, and -0.26 respectively.

Regarding variables such as financial constraints and unfavourably perceived changes in current government policy which were described in terms of price fluctuation on the commodities that are subsidised by the government, the result portrayed taxpayers do not comply with the tax system when they face a stalemate because of financial constraints and unfavourable rise or dwindle in price. On the other hand, higher

probability of being audited tends to increase compliance among taxpayers. These results also suggest that other variables such as perception of government spending, perception of equity and fairness, penalties, roles of the tax authority, and tax knowledge were not significantly correlated with tax compliance.

Table 3: Determinants of tax compliance — ordered logistic regression result

Variable	Coef.	SE	Z
Tax knowledge	0.68	0.45	1.51
Probability of Auditing	0.31(*)	0.18	-1.72
Perception of Government Spending	-0.1	0.14	-0.72
Perception on Equity and fairness	-0.1	0.17	-0.56
Penalty rates and enforcement	-0.14	0.17	-0.83
Personal financial constraint	-0.25(*)	0.15	-1.71
Changes on current government policy	-0.26(*)	0.15	-1.78
Referent group	-0.21	0.17	-1.29
The role of the tax authority	-0.09	0.13	-0.66
Log likelihood	-75.36928		
LR chi2(23)	29.2		
Number of obs	99		

Notes: ***p <0.01, **p <0.05, *p <0.1.

4.2.2 *Tax compliance determinants with control variables*

This section investigates the effect of inserting control variables into the analysis of tax compliance behaviour and examines whether these control variables in the ordered logistic regression produce a better explanatory value.

Table 4 illustrates the spearman correlation matrix for dependent, independent and control variables. There were a number of significant correlations between level of tax compliance and independent variables. Except Tax_knowldge, Gov_Spend, RCA_Role, and Educ, ten explanatory variables were significantly correlated with level of tax compliance. This outcome proves that most of the determinants tested are associated with the level of tax compliance.

Table 4: Spearman correlation matrix for dependent, independent variables and control variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Compliance_Stat	1													
2. Tax_knowldge	0.06	1												
3.Prob_Audi	0.37 (***)	0.09	1											
4. Gov_Spend	0.05	-0.16	-0.17 (*)	1										
5. Equity_Fair	0.29(***)	-0.12	-0.53 (***)	-0.18 (*)	1									
6. Penality	-0.18(*)	0.12	0.19(*)	-0.17(*)	0.03	1								
7. Fina_Cons	-0.20(**)	0.03	0.15	0	0.14	0.22(**)	1							
8. Gov_Policy	-0.23(**)	0.14	0.36(***)	0.20(**)	0.33(***)	0.1	-0.16	1						
9. Referal1	-0.31(***)	0.15	0.48(***)	-0.15	0.32(***)	0.30(***)	0.04	0.13	1					
10. RCA_Role	-0.14	0.03	0.11	0.02	0.03	0.31(***)	0.24(**)	-0.13	0.24(**)	1				
11. Gender	-0.25(**)	-0.18(*)	0.05	-0.06	0.16	0.08	0	-0.01	0.05	0.03	1			
12. Sales	-0.23(**)	-0.13	-0.03	0	0.13	0.08	0.21(**)	0.03	-0.07	0.17(*)	0.16	1		
13. Age	-0.25(**)	-0.01	0.04	0.03	0.07	-0.08	0.15	0.08	-0.14	0.09	0.05	0.20(**)	1	
14. Educ	-0.01	-0.08	-0.08	-0.1	-0.04	0.18(*)	-0.04	-0.12	0.11	0.04	0.18(*)	0.05	-0.26(**)	1

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$.

Table 5 summarises the results of the supplementary regression model which incorporated several control variables. The ordered logistic regression analysis indicates probability of auditing, personal financial constraint, changes on current government policy, gender and age are determinants of tax compliance. This supplementary regression model also suggested that Probability of Auditing, Personal financial constraint, changes on current government policy remain the most important determinants of tax compliance.

In relation to the significance of the control variables, results show that Gender and age appear to be significantly correlated with tax compliance behaviour. Specifically, the association between gender (male=1) and compliance status was negative and significant ($p<0.05$), rejecting the hypothesis that male taxpayers are significantly less compliant.

The association between age and compliance status was negative and significant ($p<0.05$), consequently, the hypothesis that older people are significantly more compliant is not accepted.

Finally, other control variables like income and education had no significant association with compliance status.

Again, analogous to results in Table 5, these results verified that control variables had a significant impact on increasing tax compliance behaviour. Furthermore, results demonstrated that the supplementary regression model remains robust.

Table 5: Determinants of tax compliance — ordered logistic regression result with control variables

Variables	Coeff.	SE	Z
Tax knowledge	0.50	0.49	1.01
Probability of Auditing	0.32 (*)	0.18	-1.80
Perception of Government Spending	-0.09	0.16	-0.60
Perception on Equity and fairness	0.01	0.18	0.04
Penalty rates and enforcement	-0.14	0.18	-0.78
Personal financial constraint	-0.24(*)	0.15	-1.56
Changes on current government policy	-0.25(**)	0.16	-1.59
Referent group	-0.38	0.18	-2.11
The role of the tax authority	-0.04	0.14	-0.26
Gender	-1.08 (**)	0.52	-2.07
Sales (Income)	-0.09	0.12	-0.78
Age	-0.51 (***)	0.18	-2.82
Educ	-0.13	0.16	-0.77
Log likelihood	-67.138657		
LR chi2(23)	42.71		
Number of obs	98		

Notes: ***p <0.01, **p <0.05, *p <0.1.

5. DISCUSSION

This research is geared towards examining factors that affect taxpayers' behaviour in Mekelle, Ethiopia. Nine potential determinants of tax compliance were examined in this study, namely the probability of being audited, perceptions of government spending, perceptions of equity and fairness, penalties, financial constraints, changes to current governmental policies, the impact of referral groups, the role of the RCA and tax knowledge.

The findings imply that the significant factors affecting tax compliance in Mekelle at the time of this study include the probability of being audited (positive), financial constraints (negative) and changes on current government policy (negative) (refer to Table 3). The probability of being audited was found to be the main explanatory factor in determining tax compliance behaviour, followed by changes on current government policy and financial constraints (refer to Table 3 and Table 5).

These results provide evidence that taxpayers who have crucial financial constraints and changes on current government policy would tend to be less compliant (negative association). Besides, a high probability of being audited would tend to be more compliant (positive).

These results also suggest that other variables such as perception of government spending, perception of equity and fairness, penalties, roles of the tax authority and tax

knowledge were not significantly correlated with tax compliance at the time of this study.

With regard to the probability of being audited, previous studies (for example, Allingham and Sandmo (1972); Jackson and Jaouen (1989); Wickerson (1994);Shanmugam (2003); Dubin (2004); Riahi-Belkaoui (2004); Richardson (2006).; Andreoni, Erard and Feinstein (1998); Verboon, and van Dijke (2007); Eisenhauer (2008)) have found that a high probability of being audited or detected would encourage taxpayers to be more compliant (positive relationship) but some other studies found contradicting results, such as a high probability of being audited would potentially decrease compliance creating a negative association (for example Slemrod, Blumenthal, and Christian, (2001): Braithwaite, Reinhart, and Smart, (2009). As far as high probability of audit could encourage tax compliance, it is advocated that the tax authority should increase their number of audit samples with the aim of increasing tax compliance, decreasing the tax gap and achieving the missions of RCA.

With regard to financial constraints, results of this study were concurrent with another study conducted by Mohani (2001) in Malaysia that taxpayers who faced personal financial problems were more prone to evading tax in comparison with those in less financial distress. Furthermore, this study also revealed and verified that people in financial distress would tend to prioritise their financial needs and obligations first rather than pay taxes. For example, people are likely to pay their utility bills or outstanding loans because failure to do so would result in immediate fines or actions worse than the penalty they incur under the jurisdiction of the tax authority. This statement is backed up by the results of this study, which found that penalties and the role of the tax authority were not significantly correlated with tax compliance. It demonstrates that taxpayers are not being subjected to corrective action and thus, they are not giving due consideration to making compliance decisions.

Regarding changes to current government policy which was sought to be scrutinized vis-à-vis basic needs' prices rise and fall, the study found that changes in government policy cast their shadow on tax compliance decisions. Hence, basic needs' price fluctuation had a significant impact on tax compliance behaviour. As long as the Ethiopian economy is under the influence of the global economic recession in general and the soaring price of basic needs in particular, taxpayers remain irritated when little changes emerge along with a considerable economic phenomenon. Therefore, so far as they remain vigilant about changes in government policies, and expect the most favourable condition from the government policies, they remain non-compliant to the tax system if the changes in government policies do not match their perceptions.

In this study, other variables such as perception of government spending, perception of equity and fairness, penalties, roles of the tax authority and tax knowledge were not significantly correlated with tax compliance decisions, even though previous studies in other countries found significant associations (see Harris, (1989). For example, the role of the tax authority in minimising the tax gap and increasing voluntary compliance was found to be very important as Hasseldine and Li (1999) placed the government as the main influencing factor in relation to tax evasion. The government plays a central role through designing and enforcing the tax systems, and collecting taxes (Hasseldine and Li, 1999: 93). Spicer and Becker (1980), Andreoni *et. al.* (1998) and Wenzel (2003) claimed that if a specific group perceived their tax liability was

higher than other groups, then tax evasion might occur among the group members. At a social level, tax compliance with regards to fairness is viewed as a national concern. If taxpayers perceive that the tax system is unfair, tax evasion is more likely to occur (Allingham and Sandmo, 1972; Baldry, 1999). At a general level, however, this study did not find similar results to those found in these prior works.

Further analysis shown in table 5 found that out of four examined control variables, only two of them were negatively significant. Gender and age were significantly correlated with tax compliance (refer Table 5). Male and older taxpayers were less compliant while other control variables such as income and education level were not significant.

With regard to gender, although findings from other studies were not conclusive and a concrete solution is still being debated, this study found that female taxpayers were more compliant. Again, this study found similar results with Mohani (2001) that males are less compliant than female counterparts. Therefore, based on the results of this study and previous research, it can be concluded that female taxpayers are more compliant in comparison with males in this study area.

On the subject of age, this study found a negative association contradicting with the hypothesis and results of previous studies like those of Dubin and Wilde (1988), Loo (2006), and Torgler (2007), which asserted that age was positively related with compliance. Studies which found a negative association include Warneryd and Walerud (1982) and Wahlund (1992). There were also a significant number of studies that found no relationship (See Spicer and Becker 1980 and Porcano, 1988).

6. SUMMARY AND CONCLUDING REMARKS

As potential issues of tax compliance are large in number, the primary objective of this study was to examine the determinants of tax compliance in Mekelle, Ethiopia. Based on a survey conducted in Mekelle using 102 responses, an attempt was made to explain effects of compliance determinates: whether increasing the probability of being audited, improving development of perceptions of government spending, addressing personal financial constraints, decreasing negative impact of referent groups, targeting specific programmes on tax compliance based on specific profiles of gender, income, age and education levels are more likely to deliver the desired increase in voluntary compliance.

The findings indicated that tax compliance was influenced by the probability of being audited, financial constraints and changes on current government policy. Other variables such as perception of government spending, perception of equity and fairness, penalties, roles of the tax authority and tax knowledge were not significantly correlated with tax compliance at the time of this study.

The low compliance and non-compliance rates influenced the frequency of the authority's tax audit activities and the practice of imposing penalties. However, the prior literature suggest that taxpayers' compliance behaviour is not solely influenced by penalties and the frequency of tax audits, but also by their level of tax knowledge, their attitudes towards and perceptions of the tax system related to the fairness of the system and inadequacy of the tax authority's enforcement strategies (Kirchler, 2007; Torgler, 2007; Richardson, 2006).

In this study, other variables such as perceptions of equity and fairness, penalties, unfavourably perceived changes to current government policy and the role of the tax authority appear to be not significantly correlated with tax compliance decisions, even though previous studies in other countries found significant associations (see Harris, (1989). For example, the role of the tax authority in minimising the tax gap and increasing voluntary compliance was found to be very important as Hasseldine and Li (1999) placed the government as the main influencing factor in relation to tax evasion. The government plays a central role through designing and enforcing the tax systems, and collecting taxes (Hasseldine and Li, 1999: 93). Spicer and Becker (1980), Andreoni *et. al.* (1998) and Wenzel (2003) claimed that if a specific group perceived their tax liability was higher than other groups, then tax evasion might occur among the group members.

The results of this study also provide implications for the government that specific insights should allow policy makers to gain a better understanding of the key variables that are significantly associated with tax compliance and enable them to implement suitable strategies to minimise potentially damaging factors, and should also allow them to improve a government's tax revenue collections.

Further, it is recommended that this kind of study should be conducted at the national level to gain a better understanding on compliance determinates in the country.

7.   REFERENCES

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