ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF ACCOUNTING AND FINANCE

DETERMINANTS OF TAX COMPLIANCE BEHAVIOR AMONG TAXPAYERS: THE CASE OF LARGE TAXPAYERS' BRANCH OFFICE, ETHIOPIAN MINISTRY OF REVENUES

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Determinants of Tax Compliance Behavior Among Taxpayers: The Case of Large Taxpayers' Branch Office, Ethiopian Ministry of Revenues

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Declaration

I, Alemayehu Yilma G/Egziabher, hereby declare that the thesis work entitled "*Determinants of Tax Compliance Behavior Among Taxpayers:* The *Case of Large Taxpayers' Branch Office, Ethiopian Ministry of Revenues*" submitted by me for the award of the degree of Master of Science in Accounting and Finance of Addis Ababa University at Addis Ababa Ethiopia, is original work and it hasn't been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

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List of Acronyms

AAU Addis Ababa University

LTO Large Taxpayers' Branch Office

GDP Gross Domestic Product

ERCA Ethiopian Revenue and Customs Authority

EMR Ethiopian Ministry of Revenue

MF Ministry of Finance

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Abstract

The main sources of government revenues are taxes levied on the incomes and wealth accumulation of individuals and corporations. Government reports showed that revenues generated from taxes and related incomes didn't satisfy the current and capital expenditures of Ethiopia. As a result tax compliance is an area of concern for the central government and all regional tax authorities in the country. Regardless of time and place, the main issue faced by the tax authorities is that it has never been easy to persuade all taxpayers to comply with the rules and regulations of a tax system. Hence, the objective of this study is to assess the main factors affecting tax compliance behavior among large taxpayers. What factors motivate them to comply or what factors discourage them not to comply with the tax reporting requirements. The research used primary data. The population of the study was 774 large taxpayers registered in the large taxpayers' branch office. A sample size of 264 taxpayers was taken from the total population and descriptive and inferential methods were used for data analysis. Tables, graphs and summaries are used to present results of the analysis. The result indicated that fairness of tax system, complexity of tax system, probability of detection; income level, penalty rate, peer influence, tax knowledge, gender and age affect tax compliance behavior. Establishing fair and simple tax system supported by tax education and tax awareness in the society would help to improve the tax compliance behavior of tax payers. The study will allow policy makers to implement appropriate strategy that improves the tax compliance level. Moreover, it may also serve as a basis for those who are interested to conduct further study on related topics.

Key words: tax compliance, determinants of tax compliance, large taxpayers,

Chapter one

Introduction

This chapter deals with introduction of the study which consists of background of the study, back ground of the organization, statement of the problem, the research questions and objectives of the study, hypothesis of the study, significance of the study, scope of the study, limitations of the study, and organization of the paper.

1.1 Background of the Study

Non-compliance with the tax laws is an age-old problem, with Plato commenting on this phenomenon in his writings over two thousand five hundred years ago [Tanzi and Shome, 1994]. Despite this lengthy existence, the issue of compliance with the tax laws created little interest and received minimal attention until the last few decades. For example, Tanzi and Shome [1994] note that taxation text books published as recently as 1966 did not even mention the subject of taxpayer compliance.

Since the 1970s, however, research into tax compliance has escalated, with both governments and academics devoting significant attention to the issue. Several hypotheses have been put forth by authors to explain this dramatic turnaround. Webley et al. [1991] attribute the increased interest in tax compliance research to the significant growth in the public sector of most economies in recent times. Tanzi and Shome [1994] offer an alternative explanation, noting that particularly in the United States, the increased interest in tax compliance research arose out of a desire to halt the rising fiscal deficit without increasing tax rates or lowering public spending. Tanzi and Shome [1994] also comment that concerns for horizontal equity may have prompted the increased attention paid to tax compliance research.

This increased research into the area of tax compliance appears justified when estimates of the level of noncompliance in the United States are considered. Kaplow [1996] notes that the Internal Revenue Service (IRS) estimated in 1992 that the tax shortfall as a result of noncompliance was between $110 and $127 billion, with Alm [1991] commenting that this amount has been growing at an annual rate of over 10 percent since 1973. Furthermore, the IRS estimates that 52 percent of people filing a tax return have engaged in some form of noncompliance [Collins, Milliron and Toy, 1992]. Outside of the U.S., noncompliance with the tax laws is also prevalent in New Zealand, with $23 million of unpaid taxes collected during

New Zealand's tax amnesty in 1988 [Hasseldine, 1989], and an estimated $1 billion in taxes lost through noncompliance in 1992 [Sawyer, 1993]. Therefore, compliance with the tax laws appears to be both a worthwhile and important area for continued research attention.

The former Ethiopian Revenue and Customs Authority is restructured and split in to two revenue offices namely Ethiopian Custom Commission and Domestic tax offices under Ministry of Revenues. Ministry of Revenue is led by a minister while Custom commission is led by a commissioner. Ministry of Revenues has its head quarter in Addis Ababa around Megenagna square. It has one large taxpayers branch office, one medium and two small taxpayers branch offices in the capital city and six other branches out of the capital. These branches are responsible to administer and collect taxes from federal taxpayers. The research is to be conducted on taxpayers who are registered at Large taxpayers branch office under Ministry of Revenues. Large taxpayers branch office is located in Addis Ababa around Saris Area, on Debre Zeit road. The branch office has various departments such as customer service, tax audit, revenue collection, and law enforcement departments.

According to the report of (OECD, 2008), Identification criteria for large businesses vary from country to country as one or more measures are used. The number of entities or group of entities classified as large taxpayers varies from one country to another due to the size of the economy as well as the definition and the criteria used to classify these taxpayers in the large business category.

The common identification criteria used to define taxpayers as large business or to place them under the responsibility of the large business unit include amount of turnover / gross sales, value of assets, amount of tax paid, operating in certain business sectors (e.g. banking, insurance, oil, etc.), engaged in international business activities and number of employees.

Currently taxpayers with an annual sales volume of ETB 50 million or more are treated as large taxpayer. There are about 774 taxpayers in the branch office fulfilling the above annual sales threshold. The researcher took a sample size of 264 taxpayers to conduct the research.

1.2 Statement of the problem

Tax compliance is a growing concern for tax authorities and public policy makers as tax non-compliance seriously affects government revenue. Most of the developing countries face difficulty in generating sufficient revenue to fulfill public demands. Although taxpayers' non-

compliance is a global problem, studies revealed that it is more serious in developing countries especially in sub-Saharan countries. Low per capita incomes, subsistent agriculture economy, poorly structured tax systems and weak tax and custom administrations contribute to difficulties in raising tax revenues (Tesfaye, 2015). According to World Bank (2015) report 24% of GDP to finance investment requirement is being covered from loans and grants. Furthermore, Tadele (2015) indicated that although the overall economic performance of Ethiopia, measured by growth in real GDP, between 2003/04- 2010/11, registered an average annual growth rate of 11.4%, and the contribution of tax revenue to GDP in 2010/11 is about 11.5%, this ratio was proved to be low compared to other developing countries such as Botswana (35.2%), Djibouti (20%) Kenya (18.4%). Various institutional and tax reforms (institutional reform such as merging of the former Ethiopian Custom Authority and Inland Revenue Authority in 2006; tax reforms such as revising income tax law in 2002, replacing of sales tax by Value Added Tax in 2003, etc..) have been taken by the Ethiopian government. However, the result of these efforts was not satisfactory. Hence, the issue of non-compliance is posing a serious challenge for the revenue authorities.

As explained in the previous paragraph, one means of measuring tax revenue performance is tax revenue to GDP ratio which is directly affected by the tax compliance level in the tax system. The following table shows tax revenue to GDP ratio in Ethiopia for the past ten years.

Table 1. Tax revenue to GDP ratio from 2009/10 to 2018/19

In Billion

	2009/10	2010/11	2011/12	2012/13	2013/14
Tax Revenue	43.32	58.98	85.74	107.01	133.12
GDP	379.13	515.08	747.33	864.67	1,047.39
Tax revenue to GDP ratio	**11.43%**	**11.45%**	**11.47%**	**12.38%**	**12.71%**

Description	2014/15	2015/16	2016/17	2017/18	2018/19
Tax Revenue	165.28	190.52	210.17	235.23	268.46
GDP	1,297.96	1,568.10	1,832.79	2,200.12	2,696.22
Tax Revenue to GDP ratio	**12.73%**	**12.15%**	**11.47%**	**10.69%**	**9.96%**

Source- Ministry of Finance & Economic Co-operation (2019/20)

Table 1 revealed that tax revenue to GDP ratio was declining in recent years. This could be an evidence to poor tax collection by the government and low tax compliance by the tax payers.

An empirical study conducted by Abdulsemed Shafi (2019) indicated that from total files audited by Addis Ababa City Revenue Authority, about 25 to 32% was investigation audit and the winning potential of the tax authority for the period was about 86% which reflects the non-compliance behavior of tax payers. Yezina Worku(2019) in her book, illustrated the federal tax revenue collection trend of Ethiopia from 2008 to 2018 where the marginal increase in the tax collection was up and down from year to year.

Dealing with the problem of non-compliance requires an understanding of the underlying factors that affect taxpayers' decision about whether to pay or evade taxes. Understanding of taxpayers' behavior help revenue bodies to design and implement effective compliance strategies that contributes to the efficiency of taxation systems. A study conducted by Tilahun et al. (2014) revealed that perception on government spending; equity and fairness of the tax system; penalties; personal financial constraints; changes on current government policies; and referral group (friends, relatives etc.) are factors that significantly affects the tax compliance behavior. Large taxpayers' Branch office report showed that about 70% of the federal government tax revenues is collected from large taxpayers. However, previous studies were mostly made on medium and small taxpayers . Hence, it needs further research at corporate taxpayers' level to assess the main non-compliance factors among taxpayers. It is therefore, the focus of this study to assess the determinants of tax compliance behavior of large taxpayers in large taxpayers' branch office.

1.3 Research Question

The study has addressed the following research question in addition to the hypotheses formulated in section 1.7 of this chapter.

What are the determinant factors of tax compliance behavior among large taxpayers, in Ethiopian Ministry of Revenue- Large Taxpayers' Branch Office?

1.4 Objectives of the study

1.4.1 General Objective of the Study

In the context of the problem and research question highlighted above, the broad objective of

the study is to assess factors affecting tax compliance behavior in Ethiopia, in case of large taxpayers' branch office, and to recommend way outs for further improvement. Based on this broad objective the study has the following specific objectives.

1.4.2 Specific objectives

The specific objectives of this study are;

1. To assess the effect of *fairness of the tax system* on tax compliance behavior. of taxpayers.
2. To assess the effect of *complexity of tax system* on tax compliance behavior of taxpayers.
3. To assess the effect of *probability of detection* on tax compliance behavior of taxpayers..
4. To assess the effect of *income level* on tax compliance behavior of taxpayers.
5. To assess the effect of *tax rate* on tax compliance behavior of taxpayers.
6. To assess the effect of *penalty rate* on tax compliance behavior of taxpayers.
7. To assess the effect of *peer influence* on tax compliance behavior of taxpayers.
8. To assess the effect of *Tax Knowledge* on tax compliance behavior of taxpayers.
9. To assess the effect of *gender* on tax compliance behavior of taxpayers.
10. To assess the effect of *age* on tax compliance behavior of taxpayers.

1.5 Hypothesis of the study

In many quantitative studies, writers used research questions. However, a more formal statement of research employs hypotheses. These hypotheses are predictions about the outcome of the results, and they may be written as alternative hypotheses specifying the exact results to be expected (more or less, higher or lower of something). They may also be stated in the null form, indicating no expected difference or no relationship between groups on a dependent variable (Creswell, 2009).

In order to achieve the objective of the study, the researcher used ten hypotheses regarding the determinants of tax compliance behavior which appeared relevant to large tax payers.

H1: Fairness of the tax system positively affects the tax compliance behavior of tax payers.

The tax fairness is looked at from two different perspectives, and which are "one dimension appears to involve the equity of the trade – the benefit received for the tax dollar given. The other dimension appears to involve the equity of the taxpayer's burden

in reference to that of other individuals" Jackson and Milliron (1986, p.137). Tax payers may decide not to pay tax at all due to the negative perception they may have that the tax system is unfair, and they are over paying tax since the services of the government being provided are not motivating. Hence, one of the most significant determinant of the taxpayers' desires and willingness to pay tax is the perception they have on the fairness of the tax system Porcano, (1984).

H2: Complexity of the tax system has negative impact on the tax compliance behavior of tax payers.

Excessive reforms of the tax laws have turned the system into a more complex one, and that can be seen as one of the reasons for tax non-compliance (Jackson and Milliron, 1986). Complexity can be seen from the following perspectives; it can be due to too much detailing in terms of the tax rules and directives involved or the requirements when it comes to the computational aspect within the context of tax compliance decisions. In order to enhance proper tax compliance, the rules for the tax compliance have to be simple, clear and comprehensive for the people paying the tax, so they can make computations beforehand at their own discretion. In general, the complexity of the tax system increases as the tax rules increase with time. Milliron (1985) supports the fact that the tax compliance decision is influenced by the complexity of the tax system.

H3: High Probability of detection has positive impact on tax compliance.

It is the normal behavior of human being to avoid paying their tax liabilities, and the only reason they cannot do that is when there is possibility of being detected (Massimo, 1993). In a normal situation fear being sanctioned deter one from committing any offence, hence deter non-compliance. The detection could be through audit or intelligence work.

H4: Low Income companies have better tax compliance level.

The studies reviewed by the authors which tested the impact of income level on compliance produced conflicting and inconclusive results. There was supporting evidence for three opposing views — first, that the wealthy are the least compliant; secondly, that the poor are the least compliant; and thirdly, that the poor and the wealthy are equally noncompliant, with middle income earners most compliant. Jackson and Milliron [1986] commented that these differences in research findings may be the result of interactions between income level and other compliance variables, particularly income source.

H5: Lower tax rate encourages tax compliance positively.

The tax rate is a major construct of tax system/structure in Fischer's compliance model. The impact of tax rates was debatable positive, negative or no impact on tax compliance (Kirchler etal., 2008). According to (Clotfelter, 1983), empirical evidences showed that progressive and flat tax rate is an important variable that is connected to tax compliance behavior. On the other hand, researches that are carried out based on experiment showed that high tax rates lead to less tax compliance (Friedland et al., 1978).

H6: Higher penalty rate has positive impact on tax compliance behavior of taxpayers.

Setting up a system for penalizing tax non-Compliant is a crucial measure to curtail the act. Considering the work of Allingham and Sandmo (1972), Setting up a serious punishment for non-compliance encourages the tax compliance.

H7: Peer groups (friends and families) with good tax compliance behavior positively affect tax compliance behavior of the group members.

The term peers refer to tax payers within same age bracket and this include relatives, friends, and other associates like colleagues (Jackson and milliron, 1986). Peers have greater influence on the decisions of one another. As such, peer influence can have an impact on the way tax payer behaves towards tax compliance. Grasmick and Scott (1982) in a study showed that respondent who lives with a non-compliant peer can portray same attitude just as his friend, and can decide not to be compliant as well. Mason et al. (1975), in their study indicated that class of people who happen to be non compliant type can discourage their peers not to be compliant. Chan et al. (2000) also assured in their study that taxpayers who are within the group of non-compliant peers can be non-compliant as well provided that same behavior has been the normal behavior and expectations with that class of people.

H8: Better Tax knowledge has positive impact on tax compliance behavior.

Education plays a very important role towards influencing tax decision to comply with tax laws or not (Jackson and Milliron,1986). In a study conducted by song and Yarbrough (1978), they considered education as their background variable, and the result showed that people with higher fiscal knowledge have better ethnic scores than those with lower fiscal knowledge. In another study by Eriksen and Fallen (1996), they also found that specific tax knowledge had a positive connection with the attitude of the tax payer. Moreover, Chan et al. (2000) assured that the likelihood of a tax payer to comply with tax law is a

direct function of higher knowledge. In a survey using randomized response technique on Australian individuals, Houston and Tran (2001) revealed that tax compliance of individuals with tertiary education is more compared to their counterparts without tertiary education. In another study, Richardson (2006) concluded that education level plays significant role on relative evasion.

H9: Female are more tax compliant than males.

Many researchers conducted researches on the tax compliance level between male and female and identified that females are more tax compliant than the male counterparts (Tittle, 1980). In reality, "females have been identified with conforming roles, moral restraints and conservative life pattern" (Jackson and Milliron, 1986). It was also argued in an experimental study carried out that female are more tax compliant compared to male (Baldry, 1987).

H10: Taxpayers at older age have better tax compliance behavior.

Jackson and Milliron (1986) maintained that age as common demographic variable has a positive connection with tax compliance of tax payer. More so, the tax compliance measurement program (TCMP) carried out on tax payer by the internal revenue service also showed that non-compliance is less among people of 65 years and above in a Household (Andreoni et al., 1998). In a nutshell, people of the younger age are more ready to take risk of not being tax compliant and careless about possible sanctions as consequence.

1.6 Significance of the study

The significance of this study is that, the findings can be used by policy makers in order to make a sound policy in relation to reducing tax non-compliance behavior of tax payers. It will also serve as a future reference for researchers who want to further conduct researches in this area.

1.7 Scope of the study

The primary focus of the study is on identifying determinants of tax compliance behavior of large taxpayers at federal large taxpayers' branch office. Many factors can be considered to analyze tax compliance of large taxpayers, but in this study, the researcher will observe factors such as demographic variables, attitude and perception, tax

system/structure and non-compliance opportunity. The researcher selected Large taxpayers branch office for the reason that about 70% of the county's tax revenue is generated from those large taxpayers. Currently there are about 774 large taxpayers registered in the Large Taxpayers Branch Office from which 228 are in manufacturing, 131 on import-export, 120 in construction sector, 102 in whole sales, 49 in service, 25 in banking and finance, 21 in agriculture, and the remaining 98 are engaged in other different sectors.

1.8 Limitation of the study

There are thousands of taxpayers at federal and regional tax office level. However, due to resource and time limitation, the study is conducted at one branch office (LTO branch) with total number of the tax payers is only 774. The tax payers that are used as primary source of data are from this branch and as a result it may not be possible to generalize the outcome beyond the specific population from which the sample was drawn. On the other hand, taking samples by its nature have its own limitation. Large taxpayers include government enterprises, share companies and private limited companies. Government enterprises and some share companies like banks and insurances are excluded from the sample as they are less exposed to intentional violation of the tax laws and regulations. Therefore, the sample was taken only from private limited companies in the branch. The study focuses on compliance factors that are assumed more relevant to large private limited companies.

1.9 Organization of the paper

The thesis is organized in five chapters. Chapter one presents the introduction part. The second chapter explains the critical review of the related literatures relevant to the topic of the study. The third chapter deals with the research methodology, which includes the research approach to be used, methods to be adopted, population & sample size, questionnaire design, data analysis techniques etc. Chapter four contains results and analysis of the study and the fifth chapter summarizes the main results of the study and forwarded some recommendations.

Chapter Two: Literature Review

Introduction

This chapter presents a review of related literatures to provide foundation of knowledge on the topic and to serve as background for this study. Currently several empirical studies were conducted to identify the factors that influence tax compliance in the world and in Ethiopia too. Nevertheless, the variables that were identified as determinants of tax compliance vary from study to study and from country to country. This chapter covers theories about tax compliance, determinants of tax compliance and a review of empirical works of previous studies that help to formulate the research questions. Finally, conceptual framework drawn from the empirical literature reviewed will be outlined.

2.1 Theories on Tax Compliance

There are various opinions as to the best ways to improve tax compliance. Given the opportunity, a lot of businesses will not pay taxes unless there is a motivation to do so. Some believe that the best way is to increase tax incentives while others believe that the best way is to increase tax penalties. So far, literatures have indicated that factors affecting taxpayer compliance are often discussed under groupings of between 2-5 theories/models. These factors are the Deterrence, Social Psychology, Fiscal Exchange, Comparative Treatment, and Political Legitimacy and Trust in Government.

2.1.1. The Deterrent (Economic) Model

This model assumes that behavior is influenced by factors such as, tax rate (which determine the benefit of tax evasion) and penalties for fraud and probability of detection (which determine costs). The economic deterrence model in its basic form views the individual taxpayer as a rational economic agent, who assesses the costs (determined by probability of detection and penalties for fraud) and benefits (determined by tax rate) of evading taxes, and thus chooses not to pay, if the benefit of non-compliance outweighs the costs (Walsh, 2012). The model thus reduces the problem to that "…of rational decision making under uncertainty whereby tax evasion either pays off in terms of lower taxes or subjects one to sanctions" (Fjeldstad, Schulz-Herzenberg and Sjursen, 2012:3). The implication of this assumption is that when there are low audit probabilities and low penalties, the tendency for

evasion will be higher, while if there is a high tendency for detection and if the penalties are severe, fewer people will evade taxes (Fjeldstad, Schulz-Herzenberg and Sjursen, 2012). It is on the basis of this assumption that the model advocates stricter audit and heavy penalties for offenders as a basis for reducing non-compliance.

2.1.2 Social-psychology Models

A common proposition of the theory of reasoned action is that individuals form their behavioral intentions on the bases of two basic determinants – personal factors and social influences (McKerchar and Evans, 2009). These are commonly referred to as personal norms and social norms respectively, and have become the focus of studies based on social psychology theories explaining taxpayer behavior. They are generally noted to play important roles in determining tax compliance (Franzoni, 1999; Sour, 2004; OECD, 2010), just as Ronan and Ramalefane (2007) specifically noted that such variables as stigma, reputation and social norms have great impact on taxpayers' decision on whether or not to comply with tax payments.

Personal norms have been defined as the deeply rooted convictions about what one ought or ought not to do (OECD, 2010). They are–in most cases- difficult to change and often beyond the reach of public policy" (Franzoni, 1999), because they take a long time of socialization processes to be developed (OECD, 2010). In the context of taxpayer behavior, personal norms reflect the taxpayers' values, tax ethics, tax mentality, and tax morale, all of which influences attitudes towards taxes/compliance. Sour (2004) contended that engagement in acts of evasion may induce feelings of anxiety, guilt or negative self-image in taxpayers. A contention that is in line with the findings of Taylor (2001), who observed that the (internal) fear of experiencing feelings of guilt, along with the risk of social stigmatization have greater deterrent effect than such external factors as the risk of detection and punishment.

2.1.3 Fiscal Exchange

The fiscal exchange theory is acclaimed to have evolved from the economic deterrence and the social psychology models (McKerchar and Evans, 2009), and is premised upon the existence of a social, relational or psychological contract between the government and the taxpayers (Frey and Feld, 2002; Torgler, 2003; Fjeldstad *et al*., 2012). The model thus suggests that the presence of government expenditures may serve as a motivating factor for taxpayer compliance, especially when the taxpayers value the goods and services they perceive to be

receiving from the government (Alm, McClelland and Schulze, 1992; Alm, 1999; Fjeldstad, *et al*., 2012). It is on this basis that Fjeldstad *et al*. (2012:4) opined that the taxpayer may be seen as exchanging their "…purchasing power in the market in return for government services", with the exchange being largely conditional, and varying as the government vary in its performance. Thus, the taxpayers will be more willing to comply when they are satisfied with the provision of services from the government, even in the absence of detection and punishment (Torgler, 2003). Conversely, they are also likely to adjust their terms of trade, by reducing compliance when they are dissatisfied with services provision from the government, or even when they dislike the way their taxes are spent (Spicer and Lundtstedt, 1976; Smith, 1992; Alm, 1999; Palil, 2010).

2.1.4 Comparative Treatment

It is a common believe that people comply with the law if they perceive the process leading to the law as generally fair (Tyler, 1990; McKerchar and Evans, 2009). This is the main focus of the comparative treatment model, which is essentially based on the equity theory (Ali *et al*., 2013). It thus proposes that individuals are more likely to exhibit higher tax compliance when they perceive the entire tax system as fair, and vice versa (Sour, 2004; GIZ, 2010; OECD, 2010). The influence of perceived fairness of the tax system on compliance decision is not limited to the treatment of the individual taxpayer only, but also relates to the tax burdens of other individuals, as well as their observed compliance behavior (Sour, 2004; Walsh, 2012). Compliance rate is noted to increase when an individual perceives his tax burdens to be "…of about the same magnitude as that of comparable others …" (Feld and Frey, 2006:15), just as evasion is observed to have increased when people become aware that their tax burdens are greater than those of others in the same group (Spicer and Becker, 1980).

Situations could also arise, when individuals are subjected to higher tax burdens, as against lower corporate profit taxes, which may make the individual taxpayers to perceive an unfair tax burden, and thus chose to declare only a part of their income as a means of getting even with the tax system (GIZ, 2010). The perceived fairness of a tax system also increases when individuals believe that other people around also pay their taxes, and this improves their willingness to comply (Sour, 2004). Conversely, when taxpayers perceive that tax evasion is prevalent in the community; the act gradually becomes the norm, and subsequently decreases their intrinsic motivation to contribute to the society (Torgler and Schneider 2005).

2.1.5 Political Legitimacy and Trust in Government

One model explaining determinants of tax compliance, -perhaps with emphasis on Africa- is that of political legitimacy, which Fjeldstad, *et al*. (2012:7) and (Ali, *et al*., 2013:5) define as the "…belief or trust in the authorities, institutions, and social arrangements to be appropriate, just and work for the common good." It is normal to expect that the more citizens trust their government and social institutions, the more likely they will voluntarily abide by the decisions and rules set by such government and institutions, and this influences tax compliance decisions (Tyler, 1990, OECD, 2010). Evidence to such situations where the government is perceived to work for the common good is found in the works Picur and Riahi-Belkaoui (2006) who, based on a study of 30 developed and developing countries, found that tax compliance is highest in countries with high control of corruption and low size of bureaucracy. Ric hardson (2008) thus suggests the need for governments to increase their reputation and credibility, as a means of gaining the taxpayers' trust.

Closely linked with political legitimacy are the issues of national pride, and political attachment. Tyler (2000) contended that national pride influences peoples' behavior in groups and provides a basis for encouraging cooperation, just as it positively impacts tax morale (Torgler and Schneider, 2005; McKerchar and Evan, 2009). Palil (2010) noted that identification with the ruling government party and its policies also influences tax compliance. He contended that "…if an individual favors the current ruling government party, he might choose to be compliant because he believes that the government is trusted, efficient and equitable", while if he in favor of the opposition, he "…might be more noncompliant because he perceives that the government is not on his side" (p.204).

2.2. Benefits of tax compliance

Tax compliance does not entail only costs for the taxpayer. There are also tax compliance benefits which need to be considered. Literatures "on tax compliance benefits" categorized these benefits into three broad categories, namely cash-flow benefits, managerial benefits, as well as tax deductibility benefits (Smulders *et al*., 2012).

2.2.1 Tax deductibility benefits- are the benefits that arise when the income tax system permits some tax compliance costs to be treated as a legitimate deduction for tax calculation purposes, for example where the tax system permits a business a deduction for the services of their tax practitioners and tax-related incidental expenses from their taxable income

(Smulders *et al*., 2012).

2.2.2 Cash-flow benefits- are the benefits derived from the use of tax revenues for a period before they must be paid over to the revenue authority, such as property tax collected by banks or supermarkets, the deduction of "pay-as-you-earn tax" (PAYE) by employers and VAT by vendors, before these are paid over to the relevant revenue authority (Smulders *et al*., 2012). A further example is the benefit from the lawful delay that arises when the income received by a taxpayer is not immediately or fully taxed on accrual or receipt.

2.2.3 Managerial benefits- are the benefits that may arise due to a requirement in terms of tax legislation to maintain records, such as better recordkeeping, the use of technology, improved knowledge of the financial affairs of the business in particular in the form of increased knowledge of their complex accounting information systems and improved business or managerial decisions (Smulders *et al*., 2012).

2.3. Costs of Tax Compliance

Abdul-Jabbar and Pope (2008) define "tax compliance cost" as the cost incurred by taxpayers to fulfill their statutory tax obligations, over and above their actual tax liability. "Tax compliance costs", according to Smulders *et al.* (2012), include monetary costs, time costs, psychological costs, and opportunity costs to taxpayers. In the literature the following types of costs have been identified:

2.3.1 Efficiency costs (also called social costs)- which refer to the cost of behavior that is not optimal and result from the tax system (Evans, 2008:452). An example is taxpayers' altering their investment decisions as a result of tax concessions that give preferential treatment to certain activities.

2.3.2 Opportunity costs- which refer to the opportunities that a taxpayer might have lost for other benefits, with the money and time spent on complying with tax matters (Evans, 2008).

2.3.3 Monetary costs- refer to expenses incurred by taxpayers in respect of professional advisers and in order to equip them, or their employees, with sufficient knowledge to understand and comply with the tax laws (Evans, 2008).

2.3.4 Time costs- refers to the time taxpayers and their employees spend on tax compliance matters, such as filing returns, keeping records, etc(Evans, 2008).

2.3.5 Psychological costs- include the stress, anxiety, frustration and dissatisfaction suffered by taxpayers as a result of trying to comply with their tax obligations (Evans, 2008:451).

According to Smulders *et al*. (2012) and with reference to businesses (rather than individuals

as taxpayers) “tax compliance costs include internal costs,… that is, the cost of collecting, paying and accounting for tax on products or profits of the business, and on the wages and salaries of employees together with the costs of acquiring the knowledge to enable this work to be done; and external costs, mainly in the form of advisors costs – using professional tax service providers is one of the main costs contributing to the cost of complying with taxation legislation.”

2.4. Determinants of tax compliance

According to the report of OECD (2008), all citizens and businesses would satisfy their obligations under the tax law to register and to voluntarily declare and pay on time their tax liabilities fully and accurately in accordance with the law. There are four basic tax compliance obligations of citizens and businesses that generally speaking must be administered by all revenue bodies in accordance with their respective tax laws. These obligations are to register for tax purposes, to file tax returns on time (i.e. by the date stipulated in the law) to correctly report tax liabilities (including as withholding agents) and to pay taxes on time.

The initial study carried out by Jackson & Milliron (1986) on tax compliance behavior identified 14 key factors that guide the behavior of tax payer towards compliance. These factors were grouped by Fischer et al. (1992) into 4 different structures in his refined model (Fisher Model) as follows; (i) demographic: which comprises of factors like age, gender and education (ii) non-compliance opportunity: which has factors like income level, income source and occupation (iii) attitudes and perceptions: which constitute factors like fairness of the tax system, ethics and peer influence and lastly (iv) the tax structure/ system: which constitute factors like complexity of tax system, revenue Authority Contact, probability of detection and penalties, tax rates and sanctions.

2.4.1. Demographic Variables

One of the variables in the Fischer model study that has been an area of interest is the influence that demographic variable has on tax compliance Tittle (1980). Under demographic variable, three (3) major factors are evidenced to have strong relationship with tax compliance behavior, and these are age, gender and education (Jackson and Milliron, 1986). The demographic variable is seen in Fischer model to affect taxpayer compliance indirectly by their impact on

non-compliance opportunities and attitudes and perceptions.

1. **Age-** Jackson and Milliron (1986) maintained that age as common demographic variable has a positive connection with tax compliance of tax payer. More so, the tax compliance measurement program (TCMP) carried out on tax payer by the internal revenue service also showed that non-compliance is less among people of 65 years and above in a Household (Andreoni et al., 1998). In a nutshell, people of the younger age are more ready to take risk of not being tax compliant and careless about possible sanctions as consequence. To add to this, Ritsema et al. (2003) in their study conducted considering the Arkansas tax penalty amnesty program of 1997 and concluded that age is a major factor for international tax evaders, and younger people were less compliant. Tittle (1980), Wärneryd (1982) and Wahlund (1992) posit negative association that older companies are less compliant. In contrast, Dubin J. A (1986) and Beron (1992) argued that age was positively related with compliance.
2. **Gender-** Many researches conducted tax compliance level between male and female showed that females are more tax compliant than the male counterparts (Tittle, 1980). In reality, "females have been identified with conforming roles, moral restraints and conservative life pattern" (Jackson and Milliron, 1986). It was also argued in an experimental study carried out that female are more tax compliant compared to male (Baldry, 1987). Jaouen (1987) expressed a significant gender difference in behavior by treating a group from a group of judges. However, on the contrary, a higher level of non-compliance has been noticed in female in a study conducted by Houston and Tran (2001).
3. **Education**- Jackson and Milliron (1986) pointed out that education plays an important role in influencing tax decision to comply with tax laws or not. The crucial aspects of education are segregated into two (2) which include: "The general degree of fiscal knowledge and the degree of knowledge involving evasion opportunities" (Groenland and Veldhoven, 1983). In a study conducted by song and Yarbrough (1978), they considered education as their background variable, and the result showed that people with higher fiscal knowledge have better ethnic scores than those with lower fiscal knowledge. In another study by Eriksen and Fallen (1996), they also found that specific tax knowledge had a positive connection with the attitude of the tax payer. Moreover, Chan et al. (2000) assured that the likelihood of a tax payer to comply with tax law is a direct function of higher knowledge. In a survey using randomized response technique on Australian individuals, Houston and Tran (2001) revealed

that tax compliance of individuals with tertiary education is more compared to their counterparts without tertiary education. In another study, Richardson (2006) concluded that education level plays significant role on relative evasion.

2.4.2. Non-Compliance Opportunity

According to Fischer's model, the non-compliance opportunity can have an impact directly on the tax payers' compliance attitude via the income level of the tax payer, his income source and occupation and which on the contrary can affect him indirectly with attitudes and perceptions.

1. **Income Level**-The studies reviewed by the authors which tested the impact of income level on compliance produced conflicting and inconclusive results. There was supporting evidence for three opposing views: first, that the wealthy are the least compliant; secondly, that the poor are the least compliant; and thirdly, that the poor and the wealthy are equally noncompliant, with middle income earners most compliant. Jackson and Milliron (1986) commented that these differences in research findings may be the result of interactions between income level and other compliance variables, particularly income source.
2. **Income Source**-The general consensus on this variable appeared to be that income source plays an important role in taxpayers' compliance behavior. Studies generally found that taxpayers were more compliant with the tax laws where the income source was subject to withholding tax (such as sales subject to withholding tax, and salary or wages), and conversely less compliant where such controls were not evident (for example, where the taxpayer was self-employed). Although there was little disagreement regarding the impact of this variable on compliance, Jackson and Milliron (1986) noted that there was still much to be learned about the relationship between income source and other key compliance variables, such as occupation, income level and the probability of detection.
3. **Occupation-** The results concerning the effect of occupation on taxpayer compliance were mixed and unclear. There was some evidence to suggest that the type of noncompliance may differ amongst occupation types, but no conclusion could be drawn as to which occupational types are most likely to engage in noncompliance. Jackson and Milliron (1986) commented that this absence of clarity was perhaps due to the interaction that occupation may have with other variables, such as income source and level.

2.4.3. Attitude and Perceptions

The two concepts put forward by Fisher model for changing taxpayers' attitude and perceptions to tax compliance are the fairness of the tax system, ethics and peer influence.

1. **Peer Influence-**The term peers refer to tax payers within same age bracket and this include relatives, friends, and other associates like colleagues (Jackson and Milliron, 1986). Peers have greater influence on the decisions of one another. Grasmick and Scott (1982) in a study showed that respondent who mingles with a non-compliant peer can portray same attitude just as his friend, and can decide not to be compliant as well. Mason et al. (1975), in their study indicated that class of people who happen to be non compliant type can discourage their peers not to be compliant. Chan et al. (2000) also assured in their study that taxpayers who are within the group of non-compliant peers can be non-compliant as well provided that same behavior has been the normal behavior and expectations with that class of people.

2. **Ethics-**The majority of studies reviewed on the relationship between ethics and taxpayer compliance found that higher levels of individual ethics are associated with greater taxpayer compliance. However, Jackson and Milliron (1986) noted that the significance of the relationship between ethics and compliance tended to vary depending on the particular definition of ethics adopted. Therefore, they suggested that some work was necessary in this area to come up with a more universal measure of ethics, and thereby increase the understanding of this variable.

3. **Fairness of the tax system**-Poor tax system is a factor which causes negative perception of what a government does to its citizen from the side of both the tax payers and tax administrators, and which as a result leads to a tax non- compliance.

   The tax fairness is looked at from two different perspectives, and which are "one dimension appears to involve the equity of the trade – the benefit received for the tax dollar given. The other dimension appears to involve the equity of the taxpayer's burden in reference to that of other individuals" (Jackson and Milliron , 1986, p.137). Tax payers may decide not to pay tax at all due to the negative perception they may have that the tax system is unfair, and they are over paying tax since the services of the government being provided are not motivating. One of the most significant determinant of the taxpayers' desires and willingness to pay tax is the perception they have on the fairness of the tax system (Porcano, 1984). On the same note, Scott and Grasmick (1982) and Spicer and lundstedt (1976) indicated a similar result on surveys conducted. The result indicated that the respondents with the view that the tax

system is unfair are likely to evade tax. In a study conducted by Richardson (2006) also emphasized that perceived fairness plays a significant role towards tax evasion. According to James (2003), the most obvious requirement of equity or fairness is to treat equal people in equal circumstances in an equal way. To put it differently, it is essential that a good tax system should appear equitable to the taxpayers.

2.4.4. Tax System/Structure

It has been the normal trend that tax compliance has been recording a discouraging rate of growth most especially in the developing countries. This phenomenon has been so due to a very weak tax structure/system. According to Fischer a very strong tax structure /system which due to its effectiveness can be so complex to the extent that can provide avenue for proper detection of non compliant, penalties and tax rates.

1. **Complexity-** Excessive reforms of the tax laws have turned the system into a more complex one, and that can be seen as one of the reasons for tax non-compliance (Jackson and Milliron, 1986). Complexity can be seen from the following perspectives; it can be due to the too much detailing in terms of the tax rules and directives involved or the requirements when it comes to the computational aspect within the context of tax compliance decisions. In order to enhance proper tax compliance, the rules for the tax compliance have to be simple, clear and comprehensive for the people paying the tax, so they can make computations beforehand at their own discretion. In general, the complexity of the tax system increases as the tax rules increase with time. Milliron (1985) supports the fact that the tax compliance decision is influenced by the complexity of the tax system. Complexity may also result in unintentional non-compliance if taxpayers have problems with filling the tax form which requires at least a reasonable level of simplicity.
2. **Revenue Authority Contact-** Jackson and Milliron's (1986) review of studies examining the effect of revenue authority contact on compliance behavior uncovered two conflicting views. One view is that contact with the revenue authority increases taxpayer compliance, while the converse view is that such contact leads to greater noncompliance. Both views were supported by empirical evidence, with the result that no conclusion could be drawn as to the impact of this variable on taxpayer compliance.
3. **Sanctions-** A significant volume of research was discovered by Jackson and Milliron (1986) concerning sanction as a compliance variable. While the authors found general support for the

idea that sanctions encourage compliance, there was conflicting evidence on the relative merits of legal sanctions and interpersonal sanctions. Furthermore, the impact that the severity of sanctions has on tax compliance was found to be unresolved.

4. **Probability of detection and penalties-** Logically, when there is a probability of carrying an audit exercise or where there is serious penalty attached to tax non-compliance, high level of compliance is observed. The probability of detection is considered as a situation where there is the tendency of the relevant tax authority to fish out tax payer's non-compliance intentions and demand remedy to that behavior. It is the normal behavior of human being to avoid paying their tax liabilities, and the only reason they cannot do that is when there is possibility of being detected (Massimo, 1993). One more determinant of tax compliance is the possibility of being punished. In a normal situation fear being sanctioned deter one from committing any offence, hence non-compliance. Setting up a system for penalizing tax non-Compliant is a crucial measure to curtail the act. Tax payers comply more when there is a serious set of punishments in place for the evaders. Considering the work of Allingham and Sandmo (1972), Setting up a serious punishment for non-compliance encourages speedy compliance.
5. **Tax Rate -** The tax rate is a major construct of tax system/structure in Fischer's compliance model. According to Clot felter (1983), empirical evidences showed that progressive and flat tax rate is an important variable that is connected to tax compliance behavior. On the other hand, researches that are carried out based on experiment showed that high tax rates lead to less tax compliance (Friedland et al., 1978). In the work of Alm et al. (1993) on the audited tax returns for individual tax payers in Jamaica, it was shown that the probability of underreporting and the level of underreporting are closely related to the marginal tax rate.

2.5 Other Variables

Jackson and Milliron (1986) also examined the research findings on several other variables potentially relevant to whether a taxpayer is compliant with the tax laws. These miscellaneous variables included the cost of compliance, the influence of tax preparers, the framing of tax decisions, and positive inducements. The results of the various studies examining these variables suggested a link with tax compliance, although insufficient research was available to enable any conclusions as to likely impact to be drawn.

2.6. A review of Empirical studies

Most of the empirical literature on tax compliance has been concerned with individual taxpayers while large and corporate businesses have been untouched. Taxpayers' voluntary tax compliance is influenced by demographic, individual, social, institutional and economic factors. The tax compliance literature has provided evidence suggesting that tax compliance is influenced by so many factors. 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), tax compliance determinants are classified in to four categories. 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).

Tilahun et al (2014) attempted to reveal factors that determine tax compliance behavior in Ethiopia particularly in Bahir Dar city administration. The results of the study revealed that perception on government spending; perception on equity and fairness of the tax system; penalties; personal financial constraint; changes on current government policies; and referral group (friends, relatives etc.) are factors that significantly affect tax compliance behavior. However, gender and probability of being audited have no significant impact on tax compliance behavior. According to his study older people comply less if there is no equity and fairness in the tax system.

According to Lemessa (2005), when compliance is not achieved on a voluntary basis, revenue authorities must identify and address the risk associated with non-compliance by developing strategies targeted at those risks. Voluntary compliance is maximized when revenue authorities are aware of major developments and trends in the business and legislative enforcement, and are responsive to their implications on tax administration and compliance.

The choice between compliance and non compliance may only be a matter of opportunity, convenience, or even interpretation of the law(Smith and Kinsey, 1987). Legal validity, economic and social purpose, distributive justification, and revenue yield may all be defeated if a tax is not levied and collected well. No matter what the justifications advanced, a tax fails to the extent that it is avoided or evaded (Shultz and Harriss, 1949).

Desta Kassa (2010) examined taxpayers' voluntary compliance with taxation in Mekelle city(Ethiopia). According to his study, factors such as equity or fairness, organizational strength of tax authority, awareness level of tax payers, social factors, cultural factors and tax payers' attitude towards the government were found to be the determinant factors affecting taxpayers' voluntary compliance. Based on the findings possible recommendations were given that include, maintaining tax fairness and equity, building capacity of the tax authority, conducting extensive awareness creation programs, and providing social services to the general public.

An empirical study made by Tadesse Getacher, and Goitom Abera (2014) in Mekelle city, Ethiopia to examine the determinants of taxpayers' compliance with the tax system and revealed that nine tax compliance determinants were recognized: 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 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.

Teklemariam Girma (2017) studied determinants of large business taxpayers' tax compliance in Addis Ababa city Administration. The result indicated that knowledge of taxpayer, quality service of tax authority and transparency of tax system had influence on tax compliance of taxpayer and they have positive and significant relationship with tax compliance of large business taxpayer.

Rice (1992), suggested that the difficulty in capturing analytically the non-compliance decisions of corporate taxpayers was a possible explanation for the lack of research on corporate tax evasion. However, Findings from limited studies using the compliance data of large corporate taxpayers have provided some evidence of the determinants of the compliance behavior of corporate taxpayers. For example, Rice (1992), found that profit performance influenced tax compliance but did not observe a relationship between firm size and tax compliance. Tax compliance was positively associated with public disclosure and negatively associated with the marginal tax rate.

Geletaw Tsegaw(2015) made his research on determinants of taxpayers' tax compliance behavior. In his research, Six tax compliance determinants were examined; these determinants

were: tax knowledge; feeling of fairness; the influence of peer groups; income level of taxpayers; detection & punishments and perception on government spending. The results of the research suggest that Addis Ababa City business profit taxpayers tax compliance behavior have been highly and significantly affected by tax knowledge; feeling of fairness; the influence of peer groups; income level of taxpayers and detection & punishments variables while confidence in government spending doesn't have as such significant impact on tax compliance behavior of businesses.

According to Clotfelter's (1983), as cited by Abdulsemed Shafi(2019), an important early study of the empirical relationships among income, the marginal tax rate, and evasion, reports elasticity's for the after-tax income, and marginal tax rate variables for each of a separate audit classes. Coefficients on both the after -tax income and marginal tax rate variables are positive and significant. The author therefore suggests that there was a significant relationship between tax rates and evasion due to tax rates being used as an instrument that can be manipulated for policy goals in particular. The tax rate is an important factor in determining tax compliance behavior although the exact impact of tax rate on tax compliance is still unclear and debatable. On the other hand James et al. (1998), as cited by Abdulsemed Shafi(2019), claims that studies using laboratory experiments typically find that high tax rates are associated with greater evasion. Increase in tax rates might have positive or negative impact on evasion.

Kanbiro Orkaido Deyganto (2018) examined in his study the factors influencing tax voluntary compliance attitude with tax system in Gedeo Zone of Southern Ethiopia. The result of his study showed that out of fourteen explanatory variables incorporated in the model, seven variables such as gender, age, lack of tax knowledge, simplicity of tax system, awareness on penalty, probability of being audited, and perception on tax rate were found to be key factors influencing taxpayers' voluntary compliance attitude with tax system in the study area. Whereas variables such as education level, tax authority efficiency, peer influence, occupation, income level of taxpayers, perception on government speeding, and perception on fairness and equity have no significant influence on tax voluntary compliance attitude.

Merima Ali, Odd Helge Fjeldstad, Ingrid Hoem Sjursen (2013) in their study explored factors that determine citizens' tax compliance behavior in Kenya, Tanzania, Uganda and South Africa using attitude and perception data. They found some similarities, but also differences in

factors that are correlated with tax compliance attitude in the four countries. An increase in the perception of individuals about the difficulty of evading taxes is found to increase the likelihood of tax compliant attitude in Kenya and South Africa. They also found evidence that individuals who are more satisfied with public service provision are more likely to have a tax compliant attitude in all the four countries. However, frequent payment to non-state actors, e.g. to criminal gangs in exchange for protection, reduces individual's tax compliant attitude. Furthermore, those individuals who perceive that their ethnic group is treated unfairly are less likely to have a tax compliant attitude in Tanzania and South Africa. Tax knowledge is also significantly correlated with tax compliant attitude in Tanzania and South Africa. These findings are robust for different econometric specifications.

A study by (Kamadar), as cited by Akalu Kibret(2016), discovered that audit rates and profit performance had a positive and significant impact on tax compliance. No significant relationships were found between tax compliance and true income, marginal tax rates, probability of detection, penalties and other socio-economic factors. The author suggested that greater audit coverage could act as an effective deterrent to corporate non-compliance, resulting in a substantial rise in tax revenues.

Another study by Hanlon (2010) reviles those corporate characteristics, size, industry, multi-nationality, being publicly traded, the presence of intangible assets and executive compensation determined corporate compliance behavior. Two other corporate characteristics, effective tax rates and the quality of governance, had no effect on the compliance behaviour of corporate taxpayers.

Given the limitations and confidentiality issues associated with using government data in Malaysia, Noor Sharoja Sapiei (2014) examined the corporate tax non-compliance using a survey approach. They conclude that corporate characteristics such as business size, sector, length, and tax liability and tax attitudinal aspects such as tax complexity, tax deterrence, fairness in the tax rate/ tax system and perceived level of psychological costs consistently influence the likelihood of tax non-compliance behavior, while the reverse was true for tax compliance costs.

Amina & Saniya (2014),as cited by Abdulsemed Shafi(2019), made a study on tax compliance and its determinants-the case of Jimma zone, Ethiopia, with the aim of investigating the determinants of tax compliance in Jimma zone category ''A'' taxpayers. The findings shows that age, sex, penalty, audit, simplicity, fairness and perception on government were found to

affect tax compliance. They recommended that the tax authority has to work on educating the young generation about the tax system and the benefit it has to the society as a whole, try to make the whole tax system as fair as possible with regard to the benefit received from paying tax and the tax burden of paying it, to expand and make more regular and consistent auditing still putting in mind the cost associated with it, work on bringing a good reputation in providing public service and making the tax system simple in general and the law, the forms, the filling, the paying and appeal system in particular in order to increase the tax compliance in one hand and the tax revenue in general.

Drummond et al. (2011), as cited by Haile Kibret and Rosa Mamuye, in their paper UNDP Ethoipia 2016, conducted a panel study covering 28 low income countries on the determinants of revenue in Sub Saharan African (SSA) countries, in line with conventional wisdom, the research found out significant and positive correlation between quality of institutions and revenue mobilization. The finding was also supported by the case study on Mozambique. Mozambique has brought an improvement in revenue collection following the tax policy reforms in 1996 that has focused on broadening the tax base and improving administrative efficiency.

The empirical studies discussed earlier on determinants of tax compliance around the world and in Ethiopia indicates that different variables have been taken into account to investigate what determine tax compliance of different taxpayers. The results of those various studies indicates that tax compliance has been influenced by different factors such as complexity of the tax system, probability of being audited, perceptions of government spending, penalties, personal financial constraints, Ethics and attitude toward tax compliance.

2.7. Conclusions to the empirical review and knowledge gaps

Most of the empirical studies on tax compliance has been concerned with individual taxpayers while large and corporate businesses entities have not been studied properly. The empirical studies that have been reviewed in the preceding section focused on the different factors that affect tax compliance behavior and findings are still debatable among different researchers. Some variables are Significant in one study also insignificant in another study and have been found to differ between different countries.

Therefore, to the knowledge of the researcher, although there have been a number of studies

on tax compliance factors of medium and small taxpayers, particularly in Ethiopia, there are no much studies that exhaustively examined tax compliance factors at large taxpayers level from which about 70% of the tax revenue is generated from such entities in Ethiopia . Hence, this research is aimed at filling the research gap on tax compliance factors at federal corporate taxpayers' level and contribute to the body of knowledge.

2.8. Conceptual Framework

The research adopts a conceptual framework where determinants of tax compliance will be taken as an independent variable while tax compliance is a dependent variable as illustrated in the following Conceptual framework figure.

Figure 1. Conceptual Framework of Variables relationship

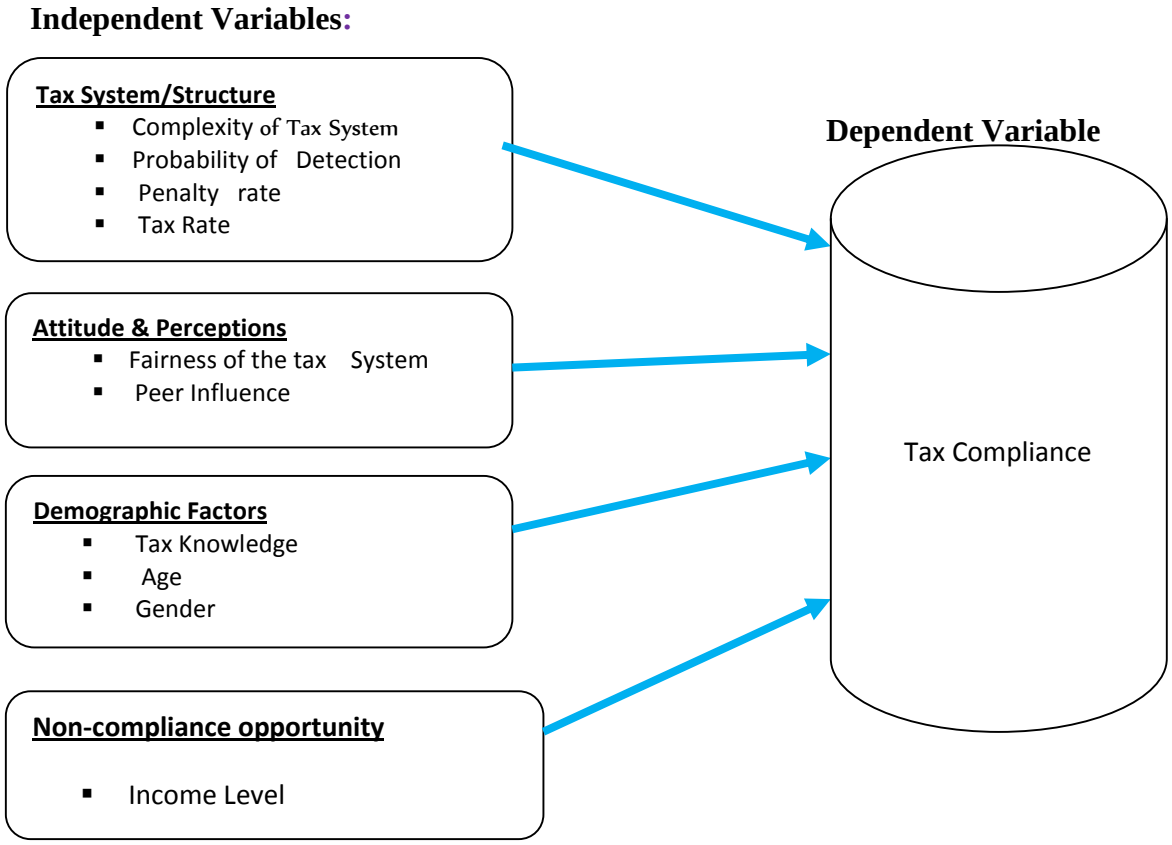


Figure 1. *Adopted from Fischer's Model(1992) of tax compliance*

Chapter Three
Research Methodology

Introduction

This chapter presents the underlying principles of research methodology and the choice of the appropriate research method for the thesis. It involves the general research design, population of study, Sample size and sampling technique, Sources of data, research instrument and methods of data analysis and presentation.

3.1 Research Design

Research design `deals with a logical problem and not a logistical problem' (Yin, 1989: 29).Social research needs a design or a structure before data collection or analysis can commence. A research design is not just a work plan. A work plan details what has to be done to complete the project but the work plan will flow from the project's research design. The function of a research design is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible. Research design is the blueprint for fulfilling research objectives and answering research questions. In other words, it is a master plan specifying the methods and procedures for collecting and analyzing the required information. It must ensure that the information collected is appropriate for solving a problem (Adams, Khan, Raeside and White, 2007). This study applied explanatory research design.

3.2 Research Method

Research methods are the strategies, processes or techniques utilized in the collection of data or evidence for analysis in order to uncover new information or create better understanding of a topic. There are different types of research methods which use different tools for data collection. A research method is a systematic plan for conducting research. It includes both qualitative and quantitative research methods, including experiments, survey research, and participant observation. The objective of this study is to examine the factors that influence tax compliance behavior. The research carried out using both qualitative and quantitative (mixed)aspects of research method in order to reduce weaknesses inherent

in any single approach. Qualitative approach was used to gather additional comments and opinions of respondents to increase the reality of the information investigated in the quantitative approach. Self- administered questionnaire was used in the quantitative approach for the reason of its simplicity in obtaining response and its evaluation of the responses.

3.3 Population of the Study

The target population for this research was large tax payers registered in large taxpayers branch office(LTO) under Ethiopian Ministry of Revenue. According to the tax office report about 70% of the tax revenue is generated from these large taxpayers. However Ethiopian government claims that government is not earning equivalent tax from the growing economy due to taxpayers' non compliance behavior. Hence, the researcher conducted his study on large taxpayers to deal with the non-compliance factors and to suggest possible solutions for improvement.

3.4 Sample Size and Sampling Technique

Ethiopian Ministry of Revenue has many branches categorized by small, medium and large taxpayers branch offices located in the capital city and across regional states. Among these branches the researcher selects large taxpayers branch office, that is the only large taxpayers branch office in the Ministry of Revenue, located in the capital city, Addis Ababa, from which the government collects the largest share of tax revenue.

There are about 774 large taxpayers registered at Federal large taxpayers branch office as at 31 Oct, 2019; among them the researcher selected 264 taxpayers of the universe by using Kotters(2008) formula.

$n=N/1+N(e)^2$ where:

$n=774/1+774(0.05)^2$ N- total population

n - sample size

$=264$ e= 0.05 error term,

where level of significant is 95% In order to get sufficient and competent data, 264 taxpayers(PLCs) were selected using convenience sampling by considering that non-compliance is more in private ltd companies than government owned public enterprises and

share companies. The sample size is clustered based on the sector of businesses in which the taxpayers are involved:

Table 3.1 Sample size distribution by business sector

Business sector	Number of Taxpayers	Weight	Sample size(Strata)
Manufacturing	228	30%	79
Import-Export	131	17%	45
Construction	120	16%	42
Whole Sales	102	13%	34
Service	74	9%	24
Others	119	15%	40
Total	774	100%	264

Source: Ministry of Revenue-LTO and researcher's own computation

Table 3. 2 Sample size, returned and non-returned questionnaire

Business Sector	**Sample**	**Returned**	**Non-returned**
Manufacturing	79	52	27
Import-Export	45	29	16
Construction	42	27	15
Whole Sales	34	23	11
Service sector	24	17	7
Others	40	28	12
Total	264	176	88

Source: researcher's own computation

The survey was conducted by distributing questionnaires to 264 taxpayers who visited the tax office for their own cases such as tax clearance, tax filing, audit, training and appeal cases etc. From the total questionnaires distributed, 176 questionnaires were properly completed and returned.

3.5 Sources Of Data

This study used both primary collected through self administered questionnaire with closed ended questions that provides less effort by respondents to complete the questionnaire and easy for analysis. It also includes opinion and recommendation section. The survey questionnaire was prepared both in Amharic and English version to reduce the impact of language barriers. Questions to assess tax compliance behavior were based on Palil (2010), Troutman (1993) and Chan et al. (2000) with some modification to suit Ethiopia's context. The close ended questions are designed on a Likert type-scale with a 5 point scale choice from Strongly Disagree to Strongly Agree. Clarification about the purpose of the survey was given in the questionnaire. The researcher got involved only when respondents needed clarification. The questionnaires were personally distributed to ascertain the respondent's willingness to participate in this study. This arrangement also provided the opportunity for researchers to explain verbally and respectfully on the importance of the study. The questionnaire comprised three parts. The first part is about demographic information of the respondents. The second part comprises questions related to factors influencing taxpayers' tax compliance behavior and the last part contains comments and recommendations given by taxpayers for making conclusions.

Secondary data such as annual tax revenue and annual GDP were collected from published books, relevant documents and annual reports to support statement of the problem. Due considerations is given to the time period, reliability, and relevance of the data for the purpose of the study.

3.6 Methods of Data Analysis and Model Specification

The model used in this study was linear regression model in order to model the linear relationship between the dependent and independent variables. The questionnaire was distributed to the respondent like business owners, general managers, senior employees and tax managers to measure their view about each provided compliance factor. Statistical packages STATA (version 13.0) software together with excel spreadsheet was applied by the researcher to process quantitative data obtained from the structured questionnaire. Descriptive and inferential statistics were used to investigate the importance of determinant factors (independent variables) that helps to establish the tax compliance variables. The descriptive interpretation used the mean as a base and inferential

interpretation used the p-value, the coefficients β of the independent variables, and necessary regression analysis.

The research model used ten independent variables that are deemed appropriate to corporate taxpayers namely fairness on the tax system (attitude and perception variable), complexity of tax structure(tax system/structure variable), probability of detection (tax system/structure variable), income level(non-compliance opportunity variable) , tax rate (tax system/structure variable), penalty rate (tax system/structure variable), peer Influence(attitude and perception variable), tax knowledge(demographic variables),gender(demographic variables),age(demographic variables). The dependent variable is tax compliance(TC) which is influenced by the above independent variables.

$$TC = \alpha o + \beta 1FTS + \beta 2CTS + \beta 3PD + \beta 4IL + \beta 5TR + \beta 6PR + \beta 7PI + \beta 8TK + \beta 9GEN + \beta 10AGE + Ɛ$$

Where;

TC - Tax Compliance

αo - Constant(tax compliance level in the absence of all tax compliance factors)

β1 - The partial change in the tax compliance due to one unit change in the fairness of tax system while other things remain constant,

β2 - The partial change in the tax compliance due to one unit change in the complexity of tax system while other things remain constant,

β3 - The partial change in the tax compliance due to one unit change in the probability of detection while other things remain constant,

β4 - The partial change in the tax compliance due to one unit change in the income level while other things remain constant,

β5 - The partial change in the tax compliance due to one unit change in the tax rate while other things remain constant,

β6 - The partial change in the tax compliance due to one unit change in penalty rate while other things remain constant,

β7 - The partial change in the tax compliance due to one unit change in the peer influence while other things remain constant,

β8 - The partial change in the tax compliance due to one unit change in the tax knowledge while other things remain constant,

β9 - The partial change in the tax compliance due to one unit change in gender while other things remain constant,

β10 - The partial change in the tax compliance due to one unit change in age factor while other things remain constant,

The corresponding variables are represented by:

TC- Tax compliance

FTS- Fairness of Tax System,

CTS- Complexity of the Tax System,

PD- Probability of Detection

IL- Income level,

TR- Tax Rate level,

PR- Penalty Rate

PI- Peer Influence

TK- Tax Knowledge,

GEN-Gender

AGE-Age and,

Ɛ- refers error term

error term is the methods to check the error term/ residual/ how the value of each sample far from the predicted value (ε=Yi-Yhat). Statistical tests were analyzed using STATA SE 13.0 software. Two types of variables were considered in this research, namely dependent, & independent variable. Dependent Variable a variable that depends upon or is a consequence of the other variable. In this study tax compliance is the dependent variable. Tax Compliance For the purpose this research is the willingness of taxpayers to comply with tax legislations, regulation and rules and to declare the correct tax liability. Independent variables on the other hand are variables that are predicators to the dependent variable.

3.7 Validity and Reliability of the instrument

The questionnaire was translated into Amharic language in order to minimize any technical jargon for the respondents. Before starting the full study, a pilot study was carried out with 15 randomly selected large taxpayers from the branch office to check the validity and reliability of the questionnaires. Some questions were modified in the process for clarity purpose. The research was carried out at 5% significant level and data was analyzed using STATA (version 13.0). Pearson Correlation and Cronbach's alpha tests were carried out to check the validity and reliability of the study. The results of these test are shown in the following tables:

Table 3.3: Pearson correlation matrix

```
. pwcorr
```

	tc	fts	cts	pd	il	tr	pr
tc	1.0000						
fts	0.4311	1.0000					
cts	0.4924	0.3526	1.0000				
pd	0.2980	0.2027	0.2296	1.0000			
il	0.2743	-0.0390	0.1614	0.1756	1.0000		
tr	0.1257	0.0128	0.0757	0.1508	0.2154	1.0000	
pr	0.3634	0.3648	0.2653	0.1847	0.1099	0.0770	1.0000
pi	0.4814	0.2208	0.3025	0.1729	0.2059	-0.0692	0.2383
tk	0.2253	0.1000	0.1260	-0.0245	-0.0684	-0.0270	-0.0115
gen	0.4001	0.0993	0.0667	-0.0434	0.0150	-0.0631	0.0618
age	0.4826	0.2021	0.2249	0.0196	0.2123	0.0307	0.1361

	pi	tk	gen	age
pi	1.0000			
tk	0.0360	1.0000		
gen	0.1565	0.0723	1.0000	
age	0.2953	-0.0938	0.2024	1.0000

Source: Researcher's Own compilation

Validity is about the accuracy of a measure. Pearson correlation test determines the relationship between variables in a study. The correlation test performed in this study shown on table 3.3 above revealed a result between -1 to +1 indicating that all variables were valid.

Table 3.4: Cronbach's alpha

```
Test scale = mean(unstandardized items)

Average interitem covariance:     .1110756
Number of items in the scale:           11
Scale reliability coefficient:      0.6332
```

Source: Researcher's own compilation

Reliability is about the consistency of measures. To ensure the reliability of the measurement scales, Cronbach's alpha was used. George & Mallery (2003) suggested that in order for a scale to be reliable, the Cronbach's alpha value should be above 0.6. Any value above 0.9 is regarded as most reliable but anything below 0.6 is regarded as

inconsistent with the reliability scales. According to table 3.4, the Cronbach's alpha value is 0.6332 indicating that the measurements employed in this study are reliable and consistent.

3.8 Ethical consideration

The researcher used structured questionnaire based on tax compliance factors indicated in Kirchler (2007) and Loo (2006). Research permission and supporting letter was secured from Addis Ababa University and research guidance was also obtained from the research advisor. Appropriate communication was undertaken with the branches officials and institutional consent was secured from large taxpayers branch office.

The survey was conducted by distributing questionnaire to large taxpayers who are registered at large taxpayers branch office and these who visited the tax office for tax clearance, audit case, tax appeal, tax filing and other cases. The researcher approached selectively those respondents who had been waiting for their queue in the tax office. Hence, most of the respondents filled the questionnaire intact and returned back to the researcher immediately. Being a former staff of the tax office, the researcher was supported by some colleagues in the branch office. The researcher assured that the respondents' information would be kept confidential and used only for the academic purpose. During data collection respondents were well informed about the objective of the research. Some People who not interested to give any information were not included in the study. For confidentiality purpose, respondents were not asked to write their name. In general the study tried to keep ethical requirements.

Chapter Four
Data Presentation, Analysis and Discussion of Results

Introduction

This chapter describes the findings and analysis of the research study based on the data collected. The researcher distributed a total number of 264 questionnaires to large taxpayers in the large taxpayers' branch office. Out of the total questionnaires distributed, 176 questionnaires were appropriately filled and returned which accounts a response rate of 66.67%. The data is analyzed using descriptive statistics (mean, frequency and standard deviation) and inferential statistics (statistical tests & multiple Regressions). The results are presented in tabular summaries and graphs followed by discussions about the result. Stata SE 13.0 is used to analyze the research findings.

4.1 Profile of Respondents

The respondents'profile includes educational level, gender, age, position of respondent in the company and the business sector in which the company is operating.

4.1.1 Educational level

Education helps to create and enhance the tax awareness level of a society. The following table illustrates information about the educational level of respondents.

Table 4.1.1: Educational level of Respondents

Educational level	Freq.	Percent	Cum.
Below Secondary School	8	4.55	4.55
Secondary School complete	24	13.64	18.18
Diploma	33	18.75	36.93
Degree	93	52.84	89.77
Master's Degree	18	10.23	100
Total	**176**	**100**	

Source: Researcher's own compilation

Table 4.1.1 indicates 4.55% of respondents were below secondary school, 13.64% completed secondary school, 18.75% are Diploma holder, and 52.84% are with first degree and the rest 10.23% are with master's degree.

The respondents' profile implied that they are formally educated. It has good opportunity to communicate and transfer messages to the taxpayer about the purpose of taxation, the applicable tax laws, regulations, rules and procedures.

4.1.2 Gender

Gender has its own influence in the level of tax compliance in a society. It is believed that females are not risk takers naturally. The respondents' gender profile is shown in table 4.1.2 below.

Table 4.1.2: Gender of respondents

Gender	Count	Percent
Male	119	67.61
Female	57	32.39
Total	**176**	**100.00**

Source: Researcher's own compilation

According to table 4.1.2 more than half of the respondents (67.61%) were male while the remaining (32.39%) were females. Male respondents had a greater representation of the whole population. The males domination in the business environment lead to tax non-compliance as males are believed to be more risk taker than females (Torgler and Schneider, 2007).

4.1.3 Age

Taxpayers engaged in large businesses are those stayed long time in business and promoted to large business status. As a result they are older than those engaged in small and medium businesses. Age category of respondents is summarized below.

Table 4.1.3: Age of Respondents

Age Category	Freq.	Percent	Cum.
Less than 30	9	5.11	5.11
30 - 40	31	17.61	22.73
41 - 50	49	27.84	50.57
Above 50	87	49.43	100
Total	**176**	**100**	

Source: Researcher's own compilation

Large tax payers are run by people with long experience in business activities. Table 4.1.3 revealed that around 50% of the respondents were above 50 and about 45% were between 30-50 and the remaining 5% were less than 30. Older people are expected to comply with the tax laws and regulations than young traders (Ruegger and King,1992).

4.1.4 Position of respondents

Respondents have different position in their company. The participation of managers in the survey response increases the reliability of the data gathered through the questionnaire.

Table 4.1.4: Position of Respondents

Respondent Position	Freq.	Percent	Cum.
Owner	26	14.77	14.77
Owner and Manager	49	27.84	42.61
Manager	55	31.25	73.86
Employee	46	26.14	100
Total	**176**	**100**	

Source: Researcher's own compilation

According to table 4.1.4 above, about 15% of the respondents were owners, 28% were owner managers, and 31% were managers and the rest 26% were employees. This substantiates the reliability of the data sources as they are collected from concerned parties in the business organizations.

4.1.5 Business Sector

Ethiopia is one of the fast growing economies in Africa that encourages the expansion of

manufacturing sectors. However, construction and trading sectors are also the dominant business among large taxpayers.

Table 4.1.5: Business Sector

Business Sector	Freq.	Percent	Cum.
Manufacturing	41	23.30	23.30
Construction	39	22.16	45.45
Service	29	16.48	61.93
Import-Export	27	15.34	77.27
Whole Sale	24	13.64	90.91
Others	16	9.09	100
Total	**176**	**100**	

Source: Researcher's own compilation

The tax office has categorized tax payers in to six groups for reporting and administration purposes. The category includes manufacturing, construction, service, Import-export, whole sale trade and others. Table 4.1.5 summarizes proportion of respondents' business sector in the survey. Manufacturing sector covers 23.30%, construction 22.16%, Service 16.48%, Import-Export 15.34%, Whole sales 13.64% and other businesses cover 9.09%. The result shows fair representation of each category in the study.

4.2 Descriptive Statistics for Determinant factors of Tax Compliance

This section presents the results of the statistical analysis and interpretations of the data using mean and standard deviations. The questionnaire was prepared using a five point Likert scale where 1=strongly disagree, 2=disagree, 3=moderately agree, 4=agree and 5=strongly agree. In order to allow respondents to suggest additional comments and opinions, some open-ended questions were added in the questionnaire.

The scores were divided in to five ranges. A variable with a mean score of 1.0 and 2.0 represents strongly disagree and disagree respectively. While a score of 3.0, 4.0 and 5.0 stand for moderately agree, agree and strongly agree respectively on the Likert scale.

4.2.1 Fairness of tax system

Table 4.2.1: Descriptive Statistics for fairness of tax system

		Descriptive statistics									
	n=176	Percentage of respondents under each weight									
Q/No.	Fairness of the tax system:	1	2	3	4	5	Total Freq. %	Mean	Std.De	Min	Max
6	The tax we pay is not fair as compared to the service or benefit we receive from the government	4	15	55	54	48	100	3.72	1.02	1	5
7	The tax burden on large taxpayers is higher than that of sole proprietors/Individual Traders/	5	25	32	51	63	100	3.81	1.15	1	5
8	Taxpayers will comply tax requirements if they receive fair service from government	6	24	31	43	72	100	3.86	1.19	1	5
9	I believe that the current tax system is fair and we pay fair amount of tax	4	17	48	45	62	100	3.82	1.09		
	The overall mean of fairness of tax system							**3.80**	**1.11**		

Source: Researcher's own compilation

As illustrated in table 4.2.1 above, the mean value obtained from respondents gave a result of 3.80 and standard deviation of 1.11. The result indicated that the extent of fairness of the tax system determines the level of tax compliance. When there is inequalities and weak government service then tax payers are discouraged to comply. If taxpayers perceive that the services being provided by government are motivating they are likely to comply. Hence, one of the most significant determinants of the taxpayers' desires and willingness to pay tax is the perception they have on the fairness of the tax system.

4.2.2 Complexity of Tax System

Table 4.2.2: Descriptive Statistics of Complexity of Tax System

		Descriptive statistics									
	n=176	Percentage of respondents under each weight									
Q/No.	Complexity of tax system	1	2	3	4	5	Total Freq %.	Mean	Std.Dev.	Min	Max
10	Ethiopian tax system is very complicated and affects the tax compliance level of taxpayers	3	12	54	55	52	100	3.80	0.99	1	5
11	Due to the complexity of the tax system and rules, I need the support of tax professionals/advisors.	2	18	49	52	55	100	3.80	1.03	1	5
12	Tax compliance will improve if tax rules and regulations are easy to understand and apply	3	9	59	50	55	100	3.82	0.99	1	5
	The overall mean of Complexity of tax system							3.81	1.oo		

Source: Researcher's own compilation

As illustrated in table 4.2.2 above, the mean value of the responses obtained from respondents gave a result of 3.81 and standard deviation of 1. The result indicated that tax payers perceived the tax system being complicated in terms of administration and the relevant tax regulations. When the tax system becomes complex, then the likelihood of tax compliance will decreases. Complexity of the tax system occurs when three is too much detailing in terms of the tax rules and directives involved or the requirements when it comes to the computational aspect. In order to enhance proper tax compliance, the rules for the tax compliance have to be simple, clear and comprehensive for the people paying the tax. The respondents gave their opinion that simple and understandable tax rules regulations and procedures encourage them to comply. Some qualitative results indicated that the current tax system is complex.

4.2.3 Probability of Detection

Table 4.2.3: Descriptive Statistics for Probability of Detection

		Descriptive statistics									
	n=176	Percentage of respondents under each weight									
Q/N	Probability of detection	1	2	3	4	5	Total Freq. %	Mean	Std.De	Min	Max
13	If the probability of detection of non compliant tax payers by the tax office is low then it encourages non-compliance.	14	35	58	48	21	100	3.15	1.12	1	5
14	Taxpayers who have never been audited or investigated before are more risk taker and don't comply with tax requirements	7	52	56	44	17	100	3.07	1.05	1	5
15	The tax office has no sufficient resource and capacity to audit or surveillance every taxpayers.	9	35	48	58	26	100	3.32	1.12	1	5
	The overall mean of Probability of detection							**3.18**	1.09		

Source: Researcher's own compilation

As illustrated in table 4.2.3 above the mean value of the responses obtained from respondents gave a result of 3.18 and standard deviation of 1.09. The result indicated that taxpayers have a believe that the probability of being detected determines their compliance behavior. However, taxpayers have doubt on the capacity of the tax office to detect non-compliant taxpayers. Hence, the tax revenue is not comparable to the country's GDP.

4.2.4 Income Level

Table 4.2.4: Descriptive Statistics of Income Level

		Descriptive statistics									
	n=176	Percentage of respondents under each weight									
Q/No.	Income Level	1	2	3	4	5	Total Freq. %	Mean	Std.Dev.	Min	Max
16	When companies' income increase from year to year they have the tendency to ignore tax rules and regulations	6	45	65	45	15	100	3.10	0.99	1	5
17	Taxpayers with middle annual income have better tax compliance than taxpayers with higher annual income	7	64	53	43	9	100	2.90	0.98	1	5
18	Taxpayers with higher annual income should pay tax at lower rate as their income increase from year to year	14	43	53	47	19	100	3.08	1.12	1	5
	The overall mean of Income level							3.03	1.03		

Source: Researcher's own compilation

Table 4.2.4 illustrated that the mean value of the responses obtained from respondents showed a result of 3.03 and standard deviation of 1.03.The result of the study pointed out that some taxpayers with higher income aren't interested to pay taxes equivalently. There is a tendency to hide their income or to inflate their expense to understate the tax liability.

4.2.5 Tax Rate

Table 4.2.5: Descriptive Statistics of Tax Rate

		Descriptive statistics									
	n=176	Percentage of respondents under each weight									
Q/No.	Tax Rate	1	2	3	4	5	Total Freq. %	Mean	Std.Dev.	Min	Max
19	The current profit tax rate of 30% for PLCs is very high and should be reduced	4	30	64	57	21	100	3.35	0.97	1	5
20	The tax rates for large companies are not reasonable as compared to sole trader	7	32	29	81	27	100	3.51	1.08	1	5
21	The tax rate should be the same for all businesses regardless of their legal status (corporations Vs Individual	8	38	70	36	24	100	3.17	1.06	1	5
22	The tax rate should decrease as annual income increases so that large taxpayers will Pay at lower rate as their income increases.	8	59	34	39	36	100	3.20	1.23		
	The over all mean of tax rate							3.31	1.09		

Source: Researcher's own compilation

Table 4.2.5 revealed that the mean value of the responses showed a result of 3.31 and standard deviation of 1.09. The result of the study pointed out that some respondents perceived the current tax rate imposed on large taxpayers is high. Progressive and flat tax rate is an important variable that is connected to tax compliance behavior. However, the flat rate currently applied on large taxpayers is not much debatable.

4.2.6 Penalty rate

Table 4.2.6: Descriptive Statistics of Penalty rate

		Descriptive statistics									
	N=176	Percentage of respondents under each weight									
Q/No.	Penalty rate	1	2	3	4	5	Total Freq. %	Mean	Std.Dev.	Min	Max
23	Severe penalty on noncompliance increases tax compliance level.	0	13	47	56	60	100	3.93	0.95	2	5
24	I comply with tax requirements because of fear of penalty	0	13	61	48	54	100	3.81	0.96	2	5
25	Taxpayer penalized in previous periods will comply in future	0	7	28	68	73	100	4.18	0.84	2	5
	The overall mean of Penalty rate							3.97	0.92		

Source: Researcher's own compilation

Table 4.2.6 revealed that the mean value of the responses is3.97and standard deviation of 0.92 The result indicated that taxpayers have a perception that penalty rate influence the behavior of tax compliance. However, some taxpayers might not be aware of high penalty rate. Hence, high penalty rate would be effective among those tax payers who have tax knowledge and to those who have been penalized in the past. On the other hand some respondents don't believe in harsh punishment. Rather they prefer to create awareness of taxation in the society. The results are supported by comments and opinions given in the qualitative data section of the questionnaire.

4.2.7 Peer Influence on Tax Compliance

Table 4.2.7: Descriptive Statistics of Peer Influence

		Descriptive statistics									
	N=176	Percentage of respondents under each weight									
Q/No.	Peer influence	1	2	3	4	5	Total Freq. %	Mean	Std.De	Min	Max
26	The perception of my friends and relatives to wards tax obligation has an impact on my tax compliance	3	31	64	56	22	100	3.36	0.97	1	5
27	Good tax payers turn to behave against the law if there are noncompliant friends and relatives	7	51	54	41	18	100	3.10	1.06	1	5
28	Measures taken on noncompliant friends and relatives will push others to comply	3	17	47	71	38	100	3.70	0.97	1	5
	The overall mean of Peer influence							3.39	1.00		

Source: Researcher's own compilation

Table 4.2.7 revealed that the mean value of the responses is 3.39 and standard deviation of 1. The result indicated that taxpayers are influenced by the behavior of friends, relatives and business partners. Peer group has both negative and positive influence in tax compliance. Punishment to one of the peer group discourages other member of the group from committing unlawful acts. Data gathered qualitatively in the questionnaire also revealed that announcing the name of noncompliant taxpayers in public media discourages other from illegal acts.

4.2.8 Tax Knowledge

Table 4.2.8: Descriptive statistics of tax knowledge

		Descriptive statistics									
	N=176	**Percentage of respondents under each weight**									
Q/No.	Tax knowledge	**1**	**2**	**3**	**4**	**5**	**Total Freq. %**	**Mean**	**Std.De**	**Min**	**Max**
29	I believe that sufficient tax education and trainings are given on the purposes of taxation and regulations.	1	29	71	49	26	100	3.40	0.95	1	5
30	Tax payer with little tax knowledge don't comply tax requirements	2	24	62	57	31	100	3.52	0.97	1	5
31	I believe that I have sufficient tax knowledge	0	13	50	62	51	100	3.86	0.92	2	5
	The overall mean of tax knowledge							3.59	0.95		

Source: Researcher's own compilation

Table 4.2.8 revealed that the mean value of the responses is 3.59 and standard deviation is 0.95 The result disclosed that respondents don't feel that the tax office performed sufficient tax awareness creations in order to reduce non-compliance behaviors. As per their opinion it is very essential to get awareness about the requirements to run a business smoothly. Respondents also disclose their opinion in the open ended questions that tax education should start from lower level in the academic system.

4.2.9 Gender

Table 4.2.9: Descriptive Statistics of Gender

		Descriptive statistics									
	N=176	Percentage of respondents under each weight									
Q/No.	Gender	1	2	3	4	5	Total Freq. %	Mean	Std.De	Min	Max
32	Females are more compliant than males	13	37	20	63	43	100	3.49	1.27	1	5
	The overall mean of Gender							3.49	1.27		

Source: Researcher's own compilation

Table 4.2.9 revealed that the mean value of the responses is 3.49 and standard deviation is 1.27 Respondents agreed that women are more compliant than men. Whereas, men are more risk-taker than women. Therefore, it is useful to identify and encourage women traders to improve tax compliance in all the society.

4.2.10 Age

Table 4.2.10: Descriptive Statistics of Age

		Descriptive statistics									
	N=176	Percentage of respondents under each weight									
Q/No.	Age	1	2	3	4	5	Total Freq. %	Mean	Std.De	Min	Max
33	Young taxpayers(traders) are more risk takers and don't comply with the tax rules	27	46	23	50	30	100	3.06	1.36	1	5
	The overall mean of Age							3.06	1.36		

Source: Researcher's own compilation

Table 4.2.10 revealed that the mean value is 3.06 and standard deviation is 1.36. The result showed that over fifty percent of the respondents agreed in that young people are more risk taker and don't comply with tax requirements. Respondents forwarded their comments on how to improve the moral and ethical value of citizens so that everyone should comply.

4.2.11 Tax compliance

Table 4.2.11: Descriptive Statistics of Tax Compliance

		Descriptive statistics									
	N=176	Percentage of respondents under each weight									
Q/No.	Tax Compliance	1	2	3	4	5	Total Freq. %	Mean	Std.De	Min	Max
34	Tax noncompliance has negative impact on a country's growth and development.	0	14	64	75	23	100	3.61	0.81	2	5
35	Government service to the public may reduce due to low tax compliance	1	35	51	54	30	100	3.34	1.01	1	5
36	Tax noncompliance distorts resource allocation to the society	0	28	74	55	19	100	3.37	0.88	2	5
	The overall mean of tax compliance							3.47	0.90		

Source: Researcher's own compilation

As indicated in table 4.2.11(mean=3.47 and standard deviation= 0.90) respondents agreed that tax noncompliance has a negative impact on government service and the economic growth of a country.

Respondents were asked to mention any other factors that may affect the tax compliance behavior of taxpayer. Respondents recommended that there should be continuous tax awareness programs to educate citizens about the aim of taxation and the benefit we receive from well financed government, the tax authority should be well organized in terms of manpower and other facilities to conduct better supervision, intelligence and audit works, experienced and ethical tax officials are needed in order to bring tax compliance by taxpayers, weak technology infrastructure for services like e-tax and e-payment should be upgraded to ease the hassle of tax payers, the education system should give emphasis on tax awareness to shape the new generations, genuine taxpayers should be supported by preventing contrabands and illegal traders.

In general, respondents would be happy if there is a smooth and fair relationship between tax payers and the tax offices. The tax authority should exert maximum effort to bring voluntary tax compliance in the taxpayers.

4.3 Inferential statistics

Inferential statistics is used to determine the validity of the data using statistical tests such as tests for normality, correlation, heteroscedasticity, and multicollinearity. The data to be gathered were classified in the form of questions under each variable. Then the response result was summarized and assigned to each variable. The study analyzed the correlation between variables by using correlation matrix. Multiple regressions was used to test the hypothesis and the fitness of the model to those factors affecting tax compliance. Tests and analysis of data is shown below.

4.3.1 Correlation between the variables

The correlation coefficient is a statistical measure of the strength of the relationship between the relative movements of two variables. The correlation between two variables measures the degree of linear association between them, Brooks(2008 , p.28). A correlation could be positive, meaning both variables move in the same direction, or negative, meaning that when one variable's value increases, the other variable's value decrease. The correlation coefficient is measured on a scale that varies from −1 through 0 to+1. Complete correlation is expressed by either + 1 or -1.

Table 4.3.1 Correlation between variables

```
. corr tc fts cts pd il tr pr pi tk gen age
(obs=176)
```

	tc	fts	cts	pd	il	tr	pr	pi	tk	gen	age
tc	1.0000										
fts	0.4311	1.0000									
cts	0.4924	0.3526	1.0000								
pd	0.2980	0.2027	0.2296	1.0000							
il	0.2743	-0.0390	0.1614	0.1756	1.0000						
tr	0.1257	0.0128	0.0757	0.1508	0.2154	1.0000					
pr	0.3634	0.3648	0.2653	0.1847	0.1099	0.0770	1.0000				
pi	0.4814	0.2208	0.3025	0.1729	0.2059	-0.0692	0.2383	1.0000			
tk	0.2253	0.1000	0.1260	-0.0245	-0.0684	-0.0270	-0.0115	0.0360	1.0000		
gen	0.4001	0.0993	0.0667	-0.0434	0.0150	-0.0631	0.0618	0.1565	0.0723	1.0000	
age	0.4826	0.2021	0.2249	0.0196	0.2123	0.0307	0.1361	0.2953	-0.0938	0.2024	1.0000

.

From table 4.3.1 above, the correlation matrix for dependent and independent variables showed a correlation coefficients between + 1 and -1 for tax compliance, fairness of tax system, complexity of tax system, probability of detection, income level, tax rate, penalty

rate, peer influence, gender, tax knowledge and age respectively. The correlation of one variable against itself is 1 while the correlation of any one of the variable against other variable is between +1 and -1 which is in the acceptable rage. Therefore, It is realized that these variables have relationship or association among each other.

4.3.2 Test for normality

Normality tests are used to determine if a data set is well modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed and the sample data has been drawn from a normally distributed population.

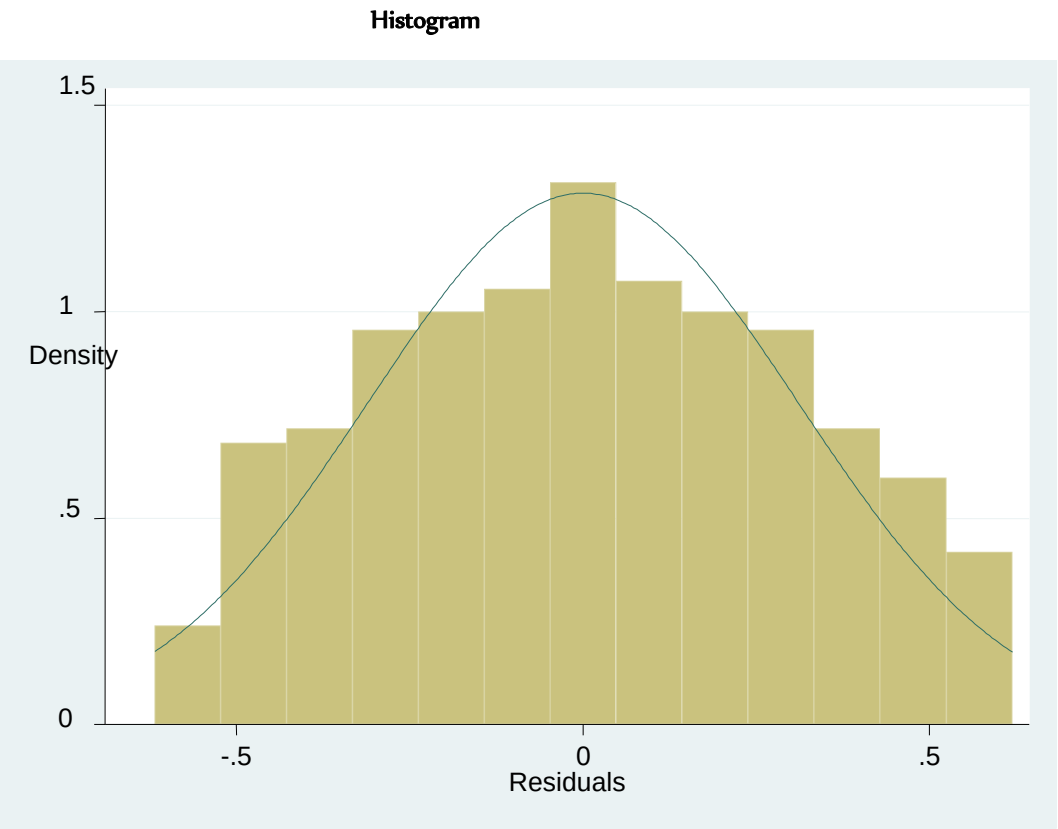
Table 4.3.2.1: Shapiro Wilk test for Normality

```
. swilk pd il fts tr cts tk pr pi gen age

                    Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
-------------+-------------------------------------------------
          pd |    176    0.99757      0.324    -2.574    0.99498
          il |    176    0.99955      0.060    -6.435    1.00000
         fts |    176    0.96706      4.398     3.386    0.00035
          tr |    176    0.99364      0.849    -0.375    0.64619
         cts |    176    0.95595      5.882     4.050    0.00003
          tk |    176    0.99792      0.278    -2.930    0.99830
          pr |    176    0.98122      2.508     2.102    0.01778
          pi |    176    0.99119      1.177     0.372    0.35493
         gen |    176    0.97554      3.266     2.706    0.00341
         age |    176    0.98520      1.977     1.558    0.05967
```

Source: Researcher's compilation

The result on table 4.3.2.1 above shows summary of p value for each variables distribution in the data. Those variables with p value above 0.05 are said to be normally distributed. The majority of the variables have got value above the minimum requirement. Hence, the overall distribution is moderately normal.

Figure 4.3.2.2: Normality test for residual



Source: Researcher's compilation

As Brooks(2008) noted that, "a normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3."(p.161). Table 4.3.2.1 and figure 4.3.2.2 above indicate that, the Coefficient of skewness and kurtosis was close to 0 and 3 respectively implying that the data were consistent with a normal distribution assumption.

4.3.3 Test for Multi-collinearity

Multi-colineatity refers to a situation in which two or more explanatory variables in a multiple regression model are highly linearly related. Perfect multicollinearity occurs when the correlation between two independent variables is equal to 1 or -1. One way of measuring multicollinearity is the variance inflation factor which assesses how much the variance of an estimated regression coefficient increases if the predictors are correlated. Under ideal condition VIF < 3 but still acceptable if less than 10.

Table 4.3.3: Multi-collinearity test result

```
. estat vif

    Variable |       VIF      1/VIF
-------------+----------------------
         fts |      1.35    0.743331
         cts |      1.31    0.763141
          pi |      1.28    0.783614
         age |      1.23    0.811269
          pr |      1.23    0.813052
          il |      1.19    0.840482
          pd |      1.15    0.868623
          tr |      1.09    0.914356
         gen |      1.07    0.932408
          tk |      1.06    0.944840
-------------+----------------------
    Mean VIF |      1.20
```

Source: Researcher's own compilation

The result of multi-collinearity test in table 4.3.3 above shows the maximum variance inflation factor (VIF) value of 1.35 and the mean variance inflation factor(VIF) of 1.20. Hence, there is no variance inflation factor(VIF) higher than 10. The low variance inflation factor(VIF) indicates that there is no problem of multi-collinearity. Therefore, it can be concluded that there is no significant correlation between the explanatory variables of the study.

4.3.4 Test for Heteroscedasticity

There is an assumption of homoscedasticity(same variance) in linear regression models. Hetroscedasticity is the violation of this assumption and it happens when the size of the error term differs across values of an independent variable.

Table 4.3.4: Test for Heteroscedasticity

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of tc

         chi2(1)      =     0.46
         Prob > chi2  =   0.4969
```

Source: Researcher's own compilation

To test for the presence of heteroscedasticity, the study used Breusch-Pagan test. This test involves testing the null hypothesis that the variance of the errors is constant (homoscedasticity) versus the alternative that the errors do not have a constant

variance(heteroscedasticity). Since the p-value is in excess of 0.05, the research couldn‘t accept the alternative hypothesis of heteroscedastic. Table 4.3.4 shows that, the P-value is greater than 0.05 that is 0.49 and a value of chi2 that is 0.46. Therefore, at 5% significance level there is homoscedasticity by accepting the hypothesis.

4.4 Regression analysis of tax compliance

Linear regression is part of inferential statistics used to fit a predictive model to a set of observed data. It quantifies the relationship or impact between one or more predictor variables and one out come variable. Linear regression is the process of finding a line that best fits the data points available on the plot so that we use it to predict output values for inputs that are not present in the data set we have with the believe that those outputs would fall on the line.

4.4.1 Regression Result

The study used linear regression model to evaluate the relationship between the dependent variable(tax compliance) and independent variables namely fairness of tax system, complexity of tax system, probability of detection, income level, penalty rate, peer influence, tax knowledge, gender and age of respondents. The result of the regression is shown below.

Table 4.4.1: Regression

```
. regress tc fts cts  pd il tr pr pi tk gen age
```

Source	SS	df	MS	Number of obs	=	176
				F(10, 165)	=	32.41
Model	33.0369244	10	3.30369244	Prob > F	=	0.0000
Residual	16.8210301	165	.101945637	R-squared	=	0.6626
				Adj R-squared	=	0.6422
Total	49.8579545	175	.284902597	Root MSE	=	.31929

tc	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fts	.0839631	.0292738	2.87	0.005	.0261636	.1417626
cts	.1281941	.0352627	3.64	0.000	.0585698	.1978183
pd	.0897367	.0289349	3.10	0.002	.0326062	.1468672
il	.0731823	.0343401	2.13	0.035	.0053797	.1409849
tr	.0545145	.0310788	1.75	0.081	-.0068489	.1158778
pr	.089569	.0389008	2.30	0.023	.0127616	.1663765
pi	.1275285	.0341235	3.74	0.000	.0601535	.1949035
tk	.1406665	.0327585	4.29	0.000	.0759866	.2053464
gen	.1161235	.0196913	5.90	0.000	.0772441	.1550029
age	.1071083	.0197111	5.43	0.000	.0681899	.1460268
_cons	-.0482304	.2356893	-0.20	0.838	-.5135862	.4171254

Source: Researcher’s own compilation

The aim of multiple linear regression (MLR) is to model the linear relationship between the explanatory (independent) variables and response (dependent) variable. Table 4.4.1 presents the results of the multiple regression model that measures the extent of relationship between the dependent variable and the independent variables. Goodness of fit(R-square) measures how well the regression model actually fits the data. It is the percentage of the dependent variable variation that a linear model explains and it is always between 0 and 100%. Higher R-squared values represent smaller differences between the observed data and the fitted values.

Based on the above model result, all the explanatory variables have positive influence on tax compliance among the federal large taxpayers. The research revealed that about 66.26% of the variation of tax compliance in the large taxpayers branch is explained by the independent variables(factors) namely fairness of tax system(fts), complexity of tax system(cts), probability of detection(pd), income level (il), tax rate(tr), penalty rate(pr), peer influence(pi), tax knowledge, gender and age while the remaining 33.74% of change in the tax compliance is explained by other factors not included in the model. Muijs (2004, page 166) described that goodness of fit value less than 0.1 is poor fit, 0.11 to 0.30 modest fit, 0.31 to 0.50 moderately fit, and >0.50 is considered as strong fit. In this study the value of goodness of fit(R^2) is 0.6626 which indicates the model is strongly fit to predict the dependent variable namely tax compliance.

The level of statistical significance is often expressed as a p-value between 0 and 1.The smaller the p-value, the stronger the evidence that we should reject the null hypothesis. A p-value less than 0.05 (typically ≤ 0.05) is statistically significant. The results of this study on table4.4.1showed that all the factors except tax rate (tr=0.081) are significant at 95% confidence interval and P-value of 0.005, 0.000, 0.002, 0.035, 0.023, 0.000, 0.000, 0.000, and 0.0000 respectively. The constant value (β0) is insignificant at 95% confidence interval having P-value 0.838. The beta values in regression are the estimated coefficients of the explanatory variables indicating a change on response variable caused by a unit change of respective explanatory variable keeping all the other explanatory variables constant/unchanged. Table 4.4.1 revealed that when the independent variables increase by 1 unit, then the dependent variable (tax compliance) is positively affected by the respective coefficient β amount of those independent variables.

The intercept β0 (the constant) is the expected mean value of the dependent variable when all the independent variables becomes zero. It is the constant value where the linear regression line intercepts the y- axis representing the amount of dependent variable, when all the independent variables are zero. In this study the value of β0 (the constant) is -0.0482. The regression model with the respective coefficients is presented below.

TC=-0.048+0.08FTS+0.13CTS+0.089PD+0.07IL+0.05TR+0.09PR+0.13PI+0.14TK+0.12GEN+0.2AGE+Ui

Where,

TC= Tax compliance	IL= Income Level	TK= Tax Knowledge
FTC= Fairness of Tax System	TR= Tax Rate	Gen= Gender
CTS= Complexity of Tax System	PR= Penalty Rate	Age = Age of respondent
PD= Probability of Detection	PI= Peer Influence	

4.4.2 Results of tests of the hypotheses

Hypothesis testing is an act of statistics whereby analysts test an assumption regarding a population parameter. It is used to assess the credibility of a hypothesis by using sample data. There are evidences from literatures that tax compliance has been the subject of considerable empirical researches. However, no similar answer has been achieved in the determinant factors of tax compliance. There are many explanatory factors that have been proposed in the literatures. The difficulty is how to select a set of explanatory variables from a very large set of candidate predictors. On the basis the results of this study, tax compliance has a significant positive relation with fairness of the tax system, the complexity of the tax system, the probability of detection, the income level, the penalty rate, the influence of peer groups, the tax knowledge, gender and age of the respondents**.** In this study the hypothesis testing was conducted using 5% significance level.

H1: Fairness of the tax system positively affects the tax compliance behavior

The regression result on table 4.4.1 above indicates that fairness of the tax system has a statistically significant positive coefficient of 0.08 at 5% significance level. The researcher has sufficient statistical evidence to accept the alternative hypothesis that fair tax system is a significant factor to affect tax compliance. The P-value is 0.005 which is equal to the

significance level of 0.05. This implies that there is a 0.08 unit increase in tax compliance for each unit change of fairness of the tax system other factors held constant. This is in line with the findings of Porcano, (1984) that the most significant determinant of the taxpayers' desires and willingness to pay tax is the perception they have on the fairness of the tax system.

H2: Complexity of the tax system has negative impact on the tax compliance behavior of tax payers.

According to the model result shown on table 4.4.1 above, complexity of the tax system has a positive coefficient of 0.13 at 5% significance level. Therefore, the researcher has sufficient statistical evidence to accept the alternative hypothesis by which complexity of the tax system has a significant impact on tax compliance. On the other hand, the P-value is 0.000 which is less than the significance level of 0.05. The result of this study proved that there is 0.128 unit increase in tax non-compliance for each unit increase of tax system complexity while keeping other factors remain unchanged. This is in line with the findings of Milliron (1985) that supports the fact that tax compliance decision is influenced by the complexity of the tax system.

H3: High Probability of detection has positive impact on tax compliance.

The result of the regression on table 4.4.1 above demonstrated that higher probability of detection has a statistically significant positive coefficient of 0.089 at 5% significance level. Hence, the researcher has got sufficient statistical evidence to accept the alternative hypothesis that higher probability of detection by the tax office has significant impact on the tax compliance behavior of large taxpayers. The P-value is 0.002 which is less than the significance level of 0.05 taken in this research. The result of the study illustrated that there is 0.089 unit of increase in the tax compliance for each unit increase of the probability of detection while other factors held constant. This result is supported by the study of(Massimo,1993) and Allingham & Sandmo(1972) who stated that it is human behavior to avoid paying their tax liabilities, and the only reason they cannot do that is when there is possibility of being detected**.**

H4: High Income companies have low tax compliance level.

According to table 4.4.1, the result of the regression demonstrated that higher income level has a statistically significant positive coefficient of 0.073 and a P- value is 0.035 which is less than the significance level of 5% taken in this research. The researcher has got sufficient

statistical evidence to accept the alternative hypothesis whereby an increase in income level of the taxpayers trigger them to decrease their tax compliance. This is for the reason that taxpayers are not interested to pay large amount tax payment as their income increases. There is about 0.073 unit increases in tax noncompliance for each unit increase in income level while other factors remain constant. The result is in line with the findings of Marshal(2014) as cited by Endashaw Demle(2019) where "middle income taxpayers are usually compliant with tax requirements and laws, while low income level taxpayers and high income level taxpayers are relatively non-compliant with tax laws."

H6: Higher penalty rate has positive impact on tax compliance behavior.

The regression result on table 4.4.1 shows the coefficient of the independent variable penalty rate (β =0.089) provides evidence in support of the prediction in the hypothesis which indicates penalty rate is significantly and positively related to tax compliance. A one unit increase in penalty rate brings 0.089 increase in the tax compliance. It has p-value of 0.023 which is less than the significance level of 0.05 assumed in this study. The study accepts the hypothesis that penalty rate has positive impact on tax compliance. Therefore, the hypothesis is accepted.

H7: Peer groups (friends and families) with good tax compliance behavior positively affect tax compliance behavior of the group members.

The descriptive statistics result shows that most of the respondents believe their perception towards tax compliance is positively or negatively affected by the group in which they are attached. According to the regression result shown in the table 4.4.1 above, peer influence of tax compliance has a statistically significant positive coefficient of 0.127 at 5% significance level. There is 0.127 unit increase in the tax compliance due to a unit increase in the peer group influence. The P-value is 0.000 which is less than the significance level of 0.05. The researcher has got sufficient statistical evidence to accept the alternative hypothesis that Peers have greater influence on the tax related decisions of one another. When taxpayer's friends and relatives aren't detected and penalized for not complying the tax requirements, then the other taxpayer will follow the same trend which affects significantly the tax compliance behavior of the population. This is in line with the findings of Mason et al. (1975) that class of people who happen to be non compliant type can discourage their peers not to be compliant. Chan et al. (2000) also assured in their study that taxpayers who are within the group of non-compliant

peers can be non-compliant as well provided that same behavior has been the normal behavior and expectations with that class of people.

H8: Limited Tax knowledge has negative impact on tax compliance behavior.

Education plays a very important role towards influencing tax decision to comply with tax laws or not (Jackson and Milliron,1986).The result of this study (table 4.4.1) shows that tax knowledge has a statistically significant positive coefficient of 0.14 at 5% significance level. This implies that there is a 0.14 unit increase in tax compliance for each unit of increase in the taxpayer's tax knowledge while other factors remained constant. The P-value is 0.000 which is less than the significance level of 0.05. Therefore, the researcher has sufficient statistical evidence to accept the alternative hypothesis that taxpayers with higher tax knowledge comply with the tax laws. This finding is in line with the findings of Amoah etal.(2014) cited from McGee and Tyler(2007) and Chau & Leung(2009) cited in (JacksonandMilliron,1986) where compliances are directly related to better tax knowledge.

H9: Females are more tax compliant than males.

The study result shows females are more tax compliant than males with a statistically significant coefficient of 0.12 at 5% significance level. This implies that there is 0.12 unit increase in tax compliance for each female joining the business world while other factors held constant. The probability value is 0.000 which is less than the significance level of 0.05. Therefore, the researcher has sufficient statistical evidence to accept the alternative hypothesis that females are more tax compliant than males. This is in line with the findings of Amoah, Asuamah, & Amaning(2014) cited from McGee (2005), Endashaw(2019) which assumed "….male respondents were slightly opposed to tax compliance than were women."

H10: Taxpayers at older age have better tax compliance behavior.

According to table 4.4.1 above, older tax payers have a statistically significant positive coefficient of 0.107 at 5% significance level. Therefore, the researcher has sufficient statistical evidence to accept the alternative hypothesis. P-value is 0.000 which is less than 0.05 significant levels. This implies that there is a 0.107 unit increase in tax compliance for each unit increase of age of taxpayer other factors held constant. This is in line with the findings of Amoah, Asuamah, & Amaning (2014) that assessed people become more ethical as they get

older. Except the hypothesis related to H5 (tax rate), all other variables are supported and found to be determinants of tax compliance behavior at 5% significance level. Hence, the hypothesis in relation to tax rate (H5) is not statistical significant to affect tax compliance and therefore fail to support the hypothesis.

Chapter Five

Conclusion and recommendation

5.1 Summary of major findings

The study revealed that most taxpayers are not satisfied with the tax system. The tax system is not considered as fair or equitable. There are business operators not accommodated by the tax system. Legal traders are highly affected by contraband and unlicensed traders. There is no sufficient tax education and adequate communication between the tax authority and taxpayers. The lax authority has no sufficient man power and infrastructure to track noncompliant taxpayers and collect taxes in due time. There is also lack of transparency and uniformity in interpreting tax laws and regulations. Services rendered by the government are not sufficient enough to motivate taxpayers.

5.2 Conclusion

The main objective of this study was to assess factors affecting tax compliance behavior to recommend possible solutions for improvement. The study analyzed ten potential factors of tax compliance. The findings of the study revealed that most of the identified factors have their own influence on the tax compliance behavior of large tax payers. The factors identified in the research are fairness of tax system, complexity of tax system, probability of detection, income level, penalty rate, peer influence, tax knowledge, gender and age of taxpayers. The following conclusions are made about factors of tax compliance based on the results of data analysis and interpretation shown in the previous chapter. Respondents are of the opinion that the tax system is not fair and equitable. They have claims on unregistered taxpayers who reduce fair competitions in the market. The service received from government is not equivalent to the tax payment. As a result it discourage one's motivation for voluntary compliance.

The complexity of the tax system is another factor that discourages voluntary tax compliance. Probability of detecting tax evaders has significant impact on tax compliance. Most respondents agree that the tax authority is not capable of detect majority of non complaints. This situation triggers taxpayers to disobey the tax laws. Some tax payers file their tax report because of fear of legal enforcement and penalties if they are caught. On the other hand, even if their annual income increases, taxpayers declare lesser amount of tax than

what is expected due to government's poor service and inefficient tax administration.

The study also showed that practice of peer groups influence tax compliance. If peer groups behave against the law, then others will follow the same behavior. Creation of tax awareness at all level of tax payers (small, medium, and large) enhances voluntary compliance. Tax conscious society will support the government even if the level of government service to the public does not reach to the expected level. Gender and age are also factors for tax compliance. Respondents agreed that females are more ethical than males and comply to the tax rules. The research showed that older business people are more compliant than young ones.

The regression analysis of the study showed that almost all the explanatory variables(fairness of tax system, complexity of tax system, probability of detection, income level, penalty rate, peer influence, tax knowledge, gender and age of taxpayers) explained the dependent variable (tax compliance). Hence, except tax rate, all other factors were statistically significant to affect tax compliance. The study result revealed that those independent variables are proved to be main factors in the tax compliance behavior of large taxpayers.

5.3 Recommendations

A good tax system should meet five basic conditions: fairness, adequacy, simplicity, transparency and administrative ease. In order to improve the tax compliance level, these five basic conditions should be maximized. A fair tax system should provide better benefit to the taxpayers in particular and the society in general in response to the tax paid by the people. Recently government made some structural and tax reforms. The split off of former Ethiopian Revenues and Customs Authority(ERCA) in to Custom Commission and Ministry of Revenue is one case to simplify the service delivery by each offices. The revision of tax laws and procedures also help to clarify the tax requirements and obligations. However, this should be supported by continuous tax awareness trainings and incorporation of tax education in the academic programs. Taxpayers training and education helps to remove any misinterpretation of laws and regulations and avoid loopholes. The tax structure should be filled by experienced and ethical staffs in the tax offices. With the help of adequate and simple tax structure, the tax system should exercise appropriate detection and levying penalty on non-compliant taxpayers.

The branch office requires an organized and strong follow up system to identify and take

actions on such taxpayer. Audit and investigation coverage should increase. The tax authority has to ensure penalties on tax defaulters and make public announcement about tax criminals. There should be transparent communication between tax authorities and taxpayers to improve tax compliance. The influence of reference groups has its own positive or negative impact on tax compliance. The negative impact of reference group will decrease as the society gets adequate tax awareness training and messages. Therefore, awareness and education about the benefit and importance of voluntary compliance to the entire society will help to minimize the negative attitudes of families and friends. This will in turn, help to improve tax compliance.

Paying taxes, as determined by the legislation, is a moral obligation owed by members of a community to their community. However, the behavior of young and male traders to escape from tax should be discouraged. Developing ethical behavior among young population is vital to bring compliance. Tax awareness programs should target young people to improve ethics and moral obligations of younger generation so that the whole society will support the government through fulfilling all tax requirements.

5.4 Area of further research

The researcher suggests that further studies can be done with the same title by adding more variables to the model which can affect tax compliance. A comparative study between taxpayers could be made by incorporating all tax payers from different category such as category A, category B and category C taxpayers in the population. If time and resources are available, further studies can also be made by taking regional and federal taxpayers together in the population.

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APPENDICES

Appendix 1

Addis Ababa University

School of Business and Economics

Department of Accounting & Finance

Dear Respondent,

This questionnaire is designed to conduct a research on the topic **"Determinants of Tax Compliance Behavior-in case of large taxpayers' branch office"**. The study is conducted for the partial fulfillment of the requirements of Msc Degree in Accounting and finance at Addis Ababa University. The purpose of this study is to identify and understand the determinant factors of tax compliance behavior that drives tax payers not to comply with the tax requirements and to suggest possible solutions to policy makers for future use.

To this effect, your honest response to the questions provided would be greatly appreciated. All answers you provide here will remain confidential and will be used for the purpose of the research only. No information that identifies either you or your company will be published in any form. Please don't mention your name anywhere in the questionnaire also. You are kindly requested to provide your answer for every question. Thank you in advance for your participation.

For further information please contact me using the following address:

Phone number: 0911-618786

E-mail address: yilmaalex@yahoo.com

Part I: General Information

Please put tick(✓) mark in the box of your choice:

1. What is your level of education?

   A. Primary School ☐ D. Degree ☐

   B. High School Graduate ☐ E. Second degree & Above ☐

   C. Diploma ☐

2. Gender

   A. Male ☐ B. Female ☐

3. Age

   A . Less than 30 ☐ C. 41 – 50 ☐

   B. 30 – 40 ☐ D. Above 50 ☐

4. Your position in the company

   A. Owner ☐ B. Manager ☐

   B. Owner Manager ☐ D. Employee ☐

5. What is your business sector?

   A. Manufacturing ☐ D. Import and Export ☐

   B. Construction ☐ E. Whole Sales ☐

   C. Service Giving ☐ F. Other, please specify_____

Part II: <u>Questions related to tax compliance factors</u>

For each of the following statement, please select your choice by placing tick(✓)mark from the given 1 to 5 options:

Fairness of the tax system:	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
6.The tax we pay is not reasonable and fair as compared to the service or benefit we receive from the government					
7.The tax burden on large taxpayers is higher than that of Sole proprietors/Individual Traders/					
8.Taxpayers will comply tax requirements if they receive reasonable service from government					
9.I believe that the current tax system is fair and we pay fair amount of tax					

Complexity of the tax system:	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
10.Ethiopian tax system is very complicated and affects the tax compliance level of taxpayers					
11.Due to the complexity of the tax system and rules, I need the support of tax professionals/advisors.					
12.Tax compliance will improve if tax rules and regulations are easy to understand and apply					

Probability of detection:	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
13. If the probability of detection of noncompliant Tax payers by the tax office is low then tax payers Will not comply to tax requirements					
14. Taxpayers who have never been audited or investigated before are more risk taker and don't comply with tax requirements					

15.The tax office has no sufficient resource and capacity to audit or surveillance every taxpayers.					
Annual Income Level	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
16. When companies' income increase from year to year they have the tendency to ignore tax rules and regulations					
17. Taxpayers with middle annual income have better tax compliance than taxpayers with higher annual income/sales					
18. Taxpayers with higher annual income should pay tax at lower rate as their income increase from year to year					

tax rate:	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
19.The current profit tax rate of 30% for PLCs is very high and should be reduced.					
20. The tax rates for large companies are heavier than Individual traders.					
21.Thetaxrate should be the same for every Businesses regardless of their legal formation (corporations Vs Individual businesses).					
22. The tax rate should decrease as annual income Increases so that large taxpayers will Pay at lower rate as their income increases.					

Penalty	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
23.Severe penalty on noncompliance increases tax compliance.					
24. I comply with tax requirements because of fear of penalty					
25. Taxpayer penalized in previous periods will comply in future					

Peer Influence	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
26.The perception of friends, relatives etc. towards tax payment has an impact on my tax compliance behavior					
27. Good tax payers turn to behave against the law if there are noncompliant friends and relatives					
28. Measures taken on noncompliant friends and relatives will push others to comply the tax requirements					

Tax Knowledge	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
29.I believe that sufficient tax education and trainings are given on the purposes of tax its regulations.					
30. Tax payer with little tax knowledge don't comply tax requirements					
31. I believe that I have sufficient tax knowledge that helps me to fulfill my tax obligations.					

Gender and Age	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
32.Females are more compliant than males					
33. Young taxpayers(traders) are more risk takers and do not comply with the tax rules and requirements					

Tax Compliance	Strongly Disagree (1)	Disagree (2)	Moderately Agree (3)	Agree (4)	Strongly Agree (5)
34.Tax noncompliance has negative impact on a country's growth and development.					
35. Government service to the public may reduce due to low tax compliance					
36. Tax noncompliance distorts resource allocation to the society .					

Part III: <u>Comments and Recommendations</u>

37. Please specify your comments (if any) about factors that affects tax payer's Taxcompliance behavior in addition to what is stated in previous tables.

_____

_____

_____

38. Please state possible solutions that can improve taxpayer's tax compliance behavior and bring positive attitude towards tax.

_____

_____

_____

39. Please state any other comments(if you have).

_____

_____

_____

Thank You for your kind cooperation!

አዲስ አበባ ዩኒቨርስቲ ቢዝነስ~ ኢኮኖሚክስ ት/ክፍል

አካውንቲንግና ፋይናንስ ዲፓርትመንት

ጥናታዊ መጠይቅ

የተከበሩ የጥናቱ ተሳታፊ፤

የዚህ ጥናት ርዕስ “ለግብር ህጎች ተገዥነት ዋና ዋና ምክንያቶች-በገቢዎች ሚኒስቴር ከፍተኛ ግብር ከፋዮች ቅ/ጽ/ቤት“ የሚል ሲሆን ጥናቱ በአዲስ አበባ ዩኒቨርስቲ በአካውንቲንግና ፋይናንስ ትምህርት ክፍል ለሁለተኛ ዲግሪ መመረቂያ ጽሁፍ ማሟያ የተዘጋጀ ጥናት ነው።

የጥናቱዋና ዓላማ በከፍተኛ ግብር ከፋዮች ቅ/ጽ/ቤት የተመዘገቡ ግብር ከፋዮች ግብራቸውን በወቅቱና በትክክል ለምን እንደሚከፍሉ ወይም እንደማይከፍሉ ለማወቅና ያለባቸውን ተጽኖዎች በመለየት ለወደፊቱ ለፖሊሲ አውጭዎች የመፍትሄ አቅጣጫ ለማመላከት ነው። የሚሰጡን መረጃ በእርስዎ እይታ ትክክለኛ የሚሉትን እንዲሆን በአክብሮት እየጠየቅን መረጃው ለየትኛውም ሶስተኛ ወገን የማይተላለፍ መሆኑን እናረጋግጣለን። በመጠይቁ ላይ የእርስዎንም ሆነ የድርጅትዎን ስም አይጥቀሱ።ለሁሉም ጥያቄዎች መልስ እንዲሰጡልን እየጠየቅን ስለጊዜዎ በጣም እናመሰግናለን።ማብራሪያ የሚያስፈልግዎ ከሆነ በሚከተለው አድራሻ መጠየቅ ይችላሉ።

በአዲስ አበባ ዩኒቨርሲቲ የሁለተኛ ዲግሪ ተማሪ

ስልክ፤ 0911-618786

ኢ-ሜይል yilmaalex@yahoo.com

ክፍል I፡ <u>አጠቃላይ መረጃ፤</u>

ከዚህ በታች ለቀረቡት ጥያቄዎች መልስዎን በሚፈልጉት ሳጥን ውስጥ “✓ ”ምልክት ያድርጉ፤

1. የትምህርት ደረጃዎ፤

ሀ. ከ12ኛ ክፍል በታች ☐ መ. ዲግሪ ☐

ለ. 12ኛ ክፍል ያጠናቀቀ ☐ ሠ.ማስተርስና ከዚያ በላይ ☐

ሐ. ዲኘሎማ ☐

2. ፆታ

ሀ.ወንድ ☐ ለ. ሴት ☐

3. ዕድሜ

ሀ.ከ 30 በታች ☐ ሐ. 41 - 50 ☐

ለ. 30 - 40 ☐ መ. ከ 50 በላይ ☐

4. በድርጅቱ ውስጥ ያለዎት ሀላፊነት፤

ሀ. ባለቤት ☐ ሐ. ስራ አስኪያጅ ☐

ለ. ባለቤትና ስራ አስኪያጅ ☐ መ . ሰ ራ ተ ኛ ☐

5. የ ተ ሰ ማ ሩ በ ት የ ስ ራ ዘ ር ፍ ፤

ሀ. አምራች ☐ መ. አስመጪና ላኪ ☐

ለ. ኮንስትራክሽን ☐ ሠ. ጅ ም ላ ን ግ ድ ☐

ሐ. አገልግሎትሰጪ ☐ ረ. ሌላ ከሆነ ቢገልጹልን_____

ክፍል II፡ የታክስ ህግ እንዲከበር ወይም እንዳይከበር የሚያደርጉ ምክንያቶችን የሚመለከት፤

እባክዎ ከታች በሰንጠረዡ ለተቀመጡት ጥያቄዎች የሚስማሙበትን መልስ(እስማማለሁ፤ አልስማማም በሚል ከተሰጡት 5 አማራጮች) አንዱን ብቻ በመምረጥ የ "✓" ምልክት ያድርጉ፤

	የታክስ ስርዓት ፍትሀዊነት	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
6	የምከፍለው ግብር ከመንግስት ከማገኘው አገልግሎት አንጻር ሲታይ የማይመጣጠንና ከፍተኛ ነው					
7	ኩባንያዎች ከግለሰብ ነጋዴዎች የበለጠ የግብር ጫና አለባቸው					
8	ግብር ከፋዮች ለሚከፍሉት ግብር ከመንግስት ተመጣጣኝ አገልግሎት ካገኙ የግብር ህጎች ይከበራሉ					
9	በእኔ እምነት አሁን ያለው የግብር አከፋፈል ስርዓት ፍትሀዊ እና ተመጣጣኝ አይደለም					

	የታክስ ስርዓት ውስብስበነት	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
10	የኢትዮጵያ የታክስ ስርዓት ውስብስብ በመሆኑ የህግ ተገዥነትን ይቀንሳል					
11	የታክስ ህጎች ውስብስብ በመሆናቸው የታክስ አማካሪ ባለሙያዎች እገዛ ያስፈልጋል					
12	የታክስ ህጎች ግልጽ እና ለመረዳት ቀላል ከሆኑ የህግ ተገዥነት ይጨምራል					

	ህግ የማያከብሩ ግብር ከፋዮች የመያዝ እድል	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
13	ትክክለኛ ግብር የማያሳውቅ ነጋዴ የመያዝ እድሉ አነስተኛ ከሆነ የግብር ህጉን አያከብርም					
14	አዲት ተደርጎ የማያውቅ ድርጅት ግብሩን አሳንሶ ለማሳወቅ ይደፍራል					
15	የግብር ሰብሳቢው መ/ቤት እያንዳንዱን ግብር ከፋይ አዲት የማድረግ አቅሙ አነስተኛ ነው					

	የአመታዊ ገቢ መጠን	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
16	ድርጅቶች ገቢያቸው እያደገ ሲሄድ በዚያው መጠን ከፍ ያለ ግብር የመክፈል ፍላጎታቸው ይቀንሳል					
17	መካከለኛ ገቢ ያላቸው ድርጅቶች ከፍተኛ ገቢ ካላቸው ድርጅቶች የተሻለ የታክስ ህግ ያከብራሉ					
18	ከፍተኛ ገቢ ያላቸው ድርጅቶች ገቢያቸው እየጨመረ ሲሄድ የሚከፍሉት ግብር እየቀነሰ ሊሄድ ይገባል					

	የታክስ ምጣኔ(tax rate) ፤	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
19	አሁን ያለው የግብር ምጣኔ(ተመን) ከፍተኛ ስለሆነ ህግ እንዳይከበር ያደርጋል፤					
20	ከፍተኛ ግብር ከፋዮች ከሌሎቹ የበለጠ የታክስ ምጣኔ ጫና አለባቸው					
21	የግብር ምጣኔ ፍትሀዊ ካልሆ የህግ ተገዥነትን ያቀጭጫል					
22	የኩባንያዎች ገቢ እየጨመረ ሲሂድ የታክስ ምጣኔው በእርከን(regeressively)እየቀነሰ መሄድ አለበት፤					

	ህግ ባለማክበር የሚጣል ቅጣት(Penalty)፤	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
23	የቅጣት መጠን ከፍተኛ ከሆነ የግብር ከፋዩ የህግ ተገዥነት ይጨምራል					
24	የግብር ግዴታዬን በአግባቡ የምወጣው ልቀጣ እችላለሁ በሚል ፍራቻ ነው					
25	ቀደም ሲል አዲት ተደርጎ ቅጣት የተጣለበት ድርጅት ለወደፊቱ ህጉን እንዴት ማክበር እንዳለበት ለማወቅ ይረዳዋል					

	የአቻ ተጽዕኖ (ጓደኛ፤ዘመድ፤ ወዘተ..)	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑእስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
26	የቅርብ ጓደኝ፤ዘመድ፤ወይም የምናውቀው ነጋዴ ስለግብር ያለው አመለካከትና ተግባር በእኛ የህግ ተገዥነት ላይ ተጽእኖ አለው					
27	የግብር ህጎችን የማያከብሩ ነጋዴዎች መኖር ትክክለኛ ግብር በሚከፍሉት ላይ አሉታዊ ተጽእኖ ይፈጥራል					
28	በአንድ ግብር ከፋይ ላይ የተጣለ ቅጣት ሌሎች ግብር ከፋዮች ህግ እንዲያከብር ተጽእኖ ይፈጥራል					

	የግብር ህግ እውቀት ደረጃ፤	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
29	የግብር ጠቀሜታና የግብር ህጎች ላይ በበቂ ሁኔታ ትምህርትና የግንዛቤ ማስጨበጫ ስልጠና ተሰጥቷል					
30	ስለግብር ምንነትና ጠቀሜታ በቂ ግንዛቤ የሌለው ግብር ከፋይ ግብሩን በአግባቡ አይከፍልም					
31	በተሰማራሁበት የስራ ዘርፍ ያሉትን የግብር ግዴታዎች ስለማውቅ ግብር በአግባቡ እንድከፍል ያግዘኛል					

	ጾታ እና ዕድሜ ፤	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
32	ሴቶች ከወንዶች የተሻለ የግብር ህጎችን ያከብራሉ					
33	በወጣትንት የእድሜ ክልል የሚገኙ ግብር ከፋዮች (ነጋዴዎች) የግብር ህጉን ላለማክበር ይደፍራሉ					

	የታክስ ህግ ስለማክበር(Tax Compliance)	በፍጹም አልስማማም (1)	አልስማማም (2)	በመጠኑ እስማማለሁ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
34	የግብር ህጎችን አለማክበር በአንድ ሀገር የኢኮኖሚ እድገት ላይ አሉታዊ ተጽእኖ ይፈጥራል					
35	ግብር በትክክል ካልተከፈለ ከመንግስት የሚገኘውን አገልግሎት እንዲቀንስ ያደርጋል					
36	የታክስ ህጎችን አለማክበር የዜጎችን የሀብት ክፍፍሉ ያዛባል					

ክፍል|||፡ <u>ተጨማሪ አስተያየትና የመፍት ሄሀሳብ፤</u>

37. የታክስ ህጎችን ላለማክበር ምክንያት ይሆናሉ ተብለው ከላይ ከተዘረዘሩት በተጨማሪ ሌሎች ምክንያቶች ካሉ ቢገልጹልን፤----------

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38. ግብር ከፋዮች ለህግ ተገዥ እንዲሆኑ ያግዛል ብለው የሚያስቡትን የመፍትሄ አቅጣጫዎች ቢገልጹልን፤

ስለትብብርዎ በጣም አመሰግናለሁ!!

Appendix 2

Tax Revenue to GDP Ratio

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Description	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Tax revenue (in billion Birr)	43.32	58.98	85.74	107.01	133.12	165.28	190.52	210.17	235.23	268.46
GDP at current mrkt price(in billion birr)	379.13	515.08	747.33	864.67	1,047.39	1,297.96	1,568.10	1,832.79	2,200.12	2,696.22
Tax Revenue to GDP ratio	**11.43%**	**11.45%**	**11.47%**	**12.38%**	**12.71%**	**12.73%**	**12.15%**	**11.47%**	**10.69%**	**9.96%**

Source; Ethiopian Ministry of Finance & Economic Cooperation

Appendix 3

Mean and Standard Deviation

```
. summarize, separator(10)
```

Variable	Obs	Mean	Std. Dev.	Min	Max
fts	176	3.801136	.9563017	1	5
cts	176	3.806818	.7835152	1	5
pd	176	3.181818	.8950078	1	5
il	176	3.028409	.7666549	1	5
tr	176	3.306818	.812164	1	5
pr	176	3.971591	.6880945	2	5
pi	176	3.386364	.7990254	1	5
tk	176	3.590909	.7579878	2	5
gen	176	3.488636	1.269369	1	5
age	176	3.056818	1.359479	1	5
tc	176	3.471591	.5337627	2	5

Appendix 4

Mean Summary

```
. mean fts cts pd il tr pr pi tk gen age tc

Mean estimation                   Number of obs    =     176
```

	Mean	Std. Err.	[95% Conf.	Interval]
fts	3.801136	.072084	3.658871	3.943402
cts	3.806818	.0590597	3.690257	3.923379
pd	3.181818	.0674638	3.048671	3.314965
il	3.028409	.0577888	2.914356	3.142462
tr	3.306818	.0612192	3.185995	3.427641
pr	3.971591	.0518671	3.869225	4.073956
pi	3.386364	.0602288	3.267495	3.505232
tk	3.590909	.0571355	3.478146	3.703672
gen	3.488636	.0956823	3.299797	3.677476
age	3.056818	.1024745	2.854573	3.259063
tc	3.471591	.0402339	3.392185	3.550997