COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE

FACTORS AFFECTING TAX COMPLIANCE OF CATEGORY ‘ C ‘ TAXPAYERS, THE CASE OF AKAKE KALITY SUB CITY

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DECLARATION

I, EmbetAbebe , declare that this project paper prepared for the partial fulfillment of the requirements for Msc. Degree in Accounting and Finance entitled “Factors Affecting Tax Compliance of Category ‘ C ‘ Taxpayers: The Case of AkakeKality sub city “ is myoriginal work and that it has not been submitted partially; or in full, by any other person for an award of a degree in any other university/institution.

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This Thesis has been submitted for examination with my approval as Advisor.

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APPROVALS

The undersigned certify that they have read and hereby recommend to the Addis Ababa University to accept the Thesis submitted by EmebetAbebe , and entitled Factors Affecting Tax Compliance of Category ‘ C ‘ Taxpayers: The Case of AkakeKality sub city,in partial fulfillment of the requirements for the award of a Master’s Degree in (program).

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ABSTRACT

The study has applied econometrics[1], descriptive and qualitative analyses to examine the Factors Affecting Tax Compliance of Category ' C ' Tax payers, the case of AkakeKality sub city. All the necessary tests conducted before interpretations of the results[2]. The category "C", majority taxpayers, shares only 15.5% of total tax revenue of the sub city. The respondents, 52.6%, on average, put the tax payers as moderate and high compliances of tax payers. Efficient tax collection observed by the Category "C" though significant complains occurred. The short run estimate indicates that the tax elasticity of income is positive and significant, 5(elastic),ie a 10 percent increase in the expenditure (income proxy) causes to increase the tax revenue by 50%. High tax assessment rate, penalty, effective smooth communication/clarity with tax officials, easy tax registration process, fair tax assessments , education/training, high-income tax payers are subject to higher tax rate, tax liabilities are the responsibilities of the citizens, respecting tax law, gender(male) and marital status(married) have significant positive impacts on the compliances of tax payers /income tax.Personal financial constraint,peer non-compliance, Covid19 and family size have significant negative impacts on the compliances of tax payers /income tax. The business sectors (small trading, house renting, transport and advertisement) would have insignificant impacts.Qualitative findings also indicate that poor administrative services (unfair tax assessment (unfair tax shares) , significant corruptions, high tax rate and others) , weak trust on tax offices/officers, no recognition of the small tax payers by the government, and no training and technical supports(focus only tax revenue) mentioned as major problems.Updating tax assessment rate, for short run focus on new tax payers and the higher tax categories for increasing tax revenue, acknowledge the category "C" tax payers, awareness/ trainings on tax laws and others, advisable part of the taxes to be re invested on basic open market (majority tax payers use it) infrastructures, in house (tax office) capacity building, revising the tax assessment manual and control corruptions put as recommendations.

Keywords:Tax Compliance, Elasticity, Econometric Models,

[1] Consists of Panel, Robust Logit(binary and ordered), and Robust OLS.

[2]Correlation ,multicolinaity,panel unit root , cross-sectional dependence , causality , co integration, hetroscadicity , coefficient , functional and other tests.

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Major Abbreviations/Acronyms

ALPHA-UC	Alpha University College
AKSCRAO	Akaki-Kality Sub City Revenue Authority Office
CTPA	Center for Tax Policy and Administration
CSA	Central Statistical Authority
CV	Coefficient of Variation
ECM	Error Components Model
ERCA	Ethiopian Revenue and Customs Authority
FDRE	Federal Democratic Republic of Ethiopia
FIRA	Federal Inland Revenue Authority
NBE	National Bank of Ethiopia
OLS	Ordinary Least Squares
REM	Random Effects Model
SSA	Sub-Sahara Africa
TSLS	Two Stage Least Squares
UNDP	UnitedNations Development Program
VAT	Value Added Tax

CHAPTER I: INTRODUCTION

Introduction part of the study consists of background of the study, statement of the problem, research questions, objective of the study, hypotheses, significance of the study, scope and limitations of the study, and organization of the chapters.

1.1 Background of the Study

Tax is that the main part of government revenue that accustomed to finance all the government expenditures to stabilize the economy(Abdu &Wondimu, 2019). Tax is a mandatory charge imposed by the government without any expectation (Manchilot, 2018). In developing countries, like Ethiopia, taxation is the best instrument that the governments to use as a source of revenue (Bijiga, 2020).

Taxation is a system of raising government's revenues by imposing tax. The history of taxation in Ethiopia has a relationship with the government structures of the nation. However, there exist hardly any reliable documentary evidences to justify the relation of the emergence of government and taxation. Different histories and evidences point out that Emperor Zeria-Yakob started taxation in Ethiopia during the 15thcentury (Daniel&Shaik, 2017). Taxation in that period was varying highly from area to area and was often arbitrary, i.e. the amount to pay and the mode of payment depends on the will of the chief tax collector and the kind of resources available in the area (Lemessa, 2005).During the period of Emperor Haile Selassie ,the tax system was changed resulting in modernized tax administration. Taxes were imposed on and collected from various sources such as income taxes from employment, businesses, (personal and business tax proclamation 60/1944),rental of land and buildings, vocational occupation, agricultural income, interest, and exploitation of wood and forest used for lumbering purposes (Eshetu 1987 in Dejen et al., 2014).The initial statutory bases for all the tax proclamations was the 1931 Constitution of Ethiopia which later revised and become Revised Constitution of Ethiopia.

According to the current FDRE Income Tax Proclamation No. 979/2016, taxpayers are divided into three categories, namely "A", "B", and "C", based on their sales volumes and the ways in which their businesses are set up. Category "A" includes any company incorporated under the tax law of Ethiopia or in a foreign country and other entities with an annual turnover of

1,000,000 Ethiopian birr or more. Category "B" includes enterprises with an annual turnover of more than 500,000 birr but less than 1,000,000 birr. Category "C" includes taxpayers whose annual turnover is estimated to be less than 500,000 birr by the tax authority. Category "A" and "B" taxpayers must submit profit and loss statements to the revenue authority at the end of each year (Abera, 2019). The law requires all entries in the records and accounts to be supported by appropriate vouchers (Council of Ministers Regulation no. 78/2002, Article 18, Sub Article 2, 2002).

Unlike the case for category "A" and "B" tax payers, the income tax liability of Category "C" taxpayers is determined using standard assessment. Their daily income is estimated by assessment committee and the taxpayers have little room to address their view so that frequent frictions observed in this category (Lemessa(2007) in Ayele et al.,2017).Like most developing countries, Ethiopia has a very large number of taxpayers in category "C"(small and medium-sized taxpayers) when compared to the other taxpayer categories (Megnaka& Devi (2014) in Abera, 2019).Category"C" taxpayers are the most problematic category of taxpayers due to the fact that these taxpayers pay taxes at fixed rate on the income estimated by the tax administration (Daniel &Shaik, 2017).Number of developing countries could not meet their expenditure from tax collection.

Daniel &Shaik(2017) contended that the willingness to pay of taxes voluntarily rests on the local government's capacity to provide servicesand its demonstrated readiness to secure the compliance of tax payers.Most of the taxpayers, especially those in the category 'C', do not exactly know how the tax is assessed or calculated and the procedures in the tax assessment and computations are not objectively understood by most of the taxpayers(Yohannes and Zerihun(2013) in Daniel &Shaik, 2017). The same researchers further contended that over taxation as a result of over estimation of daily/annual income, nontransparent, non-participatory standard assessment , lack of fairness or equity of taxation among similar businesses , poor tax laws enforcement , poor communication, weakness in tax collection and unsatisfactory service delivery are a visible shortcomings of tax management system.Ingeneral, to generate sufficient revenue from tax,efficient and effective tax administration is mandatory. This study will assess problems and constraints in tax administration of category "C" taxpayers inAkaki-kality Sub City, Addis Ababa Administration.

1.2 Statement of the Problems

Taxation is a system of raising government's revenue by imposing tax. It can also be used to encourage economic activities such as investment, equity and supporting economic growth. A good tax system follows the principles of efficiency, fairness and easy to administer.Number of studies show thatin developing countries the revenues generated through tax is far behind governments' expenditures. For instance in Ethiopia , the tax to GDP ratio in 2018/19 was 11.6 percent , far away below the Sub Saharan average of about 18percent, over 20percent for emerging economies and above 30percent for developed economies(UNDP, 2016**).** In Mozambique the government expenditure was also greater than that of the actual tax collections. The Mozambique has brought an improvement in revenue collection by reforming tax policy starting from 1996 that had focused on broadening the tax bases and improving administrative efficiency(Drummond et al.(2011)inUNDP, 2016).

One of the potential problems of tax administration in Ethiopia is tax evasion (Emerta, 2010).The major reasons for such kind of a tax evasion were lack of clear understanding about the tax system by the taxpayers, taxpayers don't comply with their tax obligation, hostility between the taxpayers and tax officials, negative attitude of taxpayer towards the tax system, etc(Ayele et al.,2017).

There have been studies on tax administration challenges in some sub-cities of Addis Ababa focused on VAT. However, the study done onfactors affecting tax compliance of Category C Tax payers,in the Capital.Practically, as to the City tax authority, the numbers of Category C tax payers and their challenges in the City are huge;however, there are budget and time constraints to address the whole city so that the study focuses on the Akaki-Kality Sub City.Besides, whether the tax administration in Sub City isall tax payers in category "C" being affected due to administrative weaknesses are not identified. Hence, the study identifies mainly the administrative and related problems that deserve appropriate actions in which come up with solutions and recommendations.

1.3 Research Questions

The study focuses to answer the following core questions:-

- What are the major factors or determinants that influence the attitude of category 'C' tax payers and their level of voluntary compliance with the tax system in Akaki-Kality Sub-City?
- Is there efficient tax collection in the category 'C' tax payers visa vise the potential/income/ of the Sub City? and
- Which sector is more efficient in tax collection visa vise the potential/income/ of the tax payers?

1.4Objectives of the Study

1.4.1 General Objective

The main objective of the study is to investigatethe factors affecting tax compliance of category 'C ' tax payers, the case of AkakeKality sub city.

1.4.2 Specific Objectives

Given that of the general objective, the study focuses on the following specific objectives:-

- To examine the tax administrative activities' performances of Akaki-Kality Sub City Tax Office (registrations, assessment, collections ,service delivery, and others)
- To evaluate the voluntary compliance of category "C" taxpayers in the Subcity(true reporting of the tax base, correct computation of the liability, timely filing of the return and timely payment of the amounts due),
- To assessthe non-compliancy management practices improvements of category "C" taxpayers in Akaki-Kality Sub City (penalty; awareness creations; rules, regulations and policy revisions; simplicity of the systems and others),
- To see the relation between tax revenues by the taxpayers(an indicator of tax administration performance) and their incomes or expenditure(proxy of income), and
- To see the efficiency of tax collection (such as elasticity, an indicator of tax administration performance) by the category visa vises the sub city's gross income.

1.5 Hypotheses

Based on the theoretical concepts, empirical findings and the existing conditions of the Capital, the major hypotheses to be tested are:-

Hypothesis 1: There is a positive relation between actual tax revenue andexpenditures(proxy of income) , and

Hypothesis 2: Social, economy, and administration/institutional factors expected to have a relation with the compliances of tax payers /income tax as of the theoretical frame works.

1.6Scope of the Study

In the light of the availability of data, finance and time considerations, it may be difficult to address the entire tax payers and tax offices found in all sub cities of the Capital. Hence ,the study focuses on examiningthefactors affecting tax Compliance/ attitudes of Category ' C ' Tax payersand tax offices' representatives in the AkakiKality sub city. The identified variables to be incorporated chosen by considering theoretical backgrounds and other related factors stated in the statement of the problem and theoretical frame works(figure1). The variables are illustrated in the model specifications such as **Demographic and related**(age, gender, marital status and family size), **Economic Factors(** income/expenditures, financial constraints,awareness of penalty and tax rate, audit probabilities, and perceptions on government spending and balanced budgets),**Social Factors(** Education, perception on equity and fairness of tax system and related ones), **Personal Factors(** behavior, tax knowledge/awareness and related ones), and **Institutional Factors(**better tax and related policies and regulations; better administrative compliances; better technical compliances; sectors' efficiency and others).The study has used both qualitative and quantitative data. For cross-sectional and qualitative approaches, thedata used are at the time of the survey done. In case of panel model, the study used the annual data, 2009-2012 EC(see more in the methodology part).

1.7Significance of the Study

The results of the study would be a good source of information for regulators or policy makers on how to minimize the administration challenges so that tax revenue can be collected at their best. It may also help in creating more awareness to the business community and would be used

as a source of information for those who interested in the area, conducting a research and related issues.

1.8Limitations and Remedy Solutions

The major limitations found in the study have been time and budget constraints to assess the whole; in availability of enough and quality data; bureaucracy of the tax administration office; and the willingness of the proposed category tax payers. The study has tackled them by using appropriate and scientific methodologies and data collection tools.

1.9 Organizations of the Study

This research paper organized in to five chapters. Chapter one incorporates the introductory parts including background of the study, statement of the problem, research questions, objective of the study, significance of the study, scope and limitations of the study, and organization of the chapters. Chapter two presents literature review with respect to the theoretical and empirical perspectives on determinants of tax administration followed by research methodology in the third chapter. The fourth chapter deals with data analysis and discussions of the results and the fifth chapter consists of summary of the results, conclusions, and recommendations. Finally, attached list of references, and data collection instruments.

CHAPTER II: LITERATURE REVIEWS

The literature reviews can be categorized by two broad streams, theoretical and empirical ones. The theoretical concepts consist of basic concepts of tax administration, characteristics of good tax system, factors influencing overall tax administration inthe registration, assessment, collection practices, ethical issues and related ones. The empirical ones address the researches done on ground and their outputs in relation to the theoreticalframeworks on the subject.

2.1 Theoretical Concepts of Taxes

Tax has been defined by different researchers in different ways. Tax is an involuntary levy and a policy tool that helps to mobilize revenue to provide public goods and services. Tax helps to redistribute income/wealth in the society that addresses inequality issues (UNDP Ethiopia, 2016).Developed and developing countries of the world generate most of their government's revenues from taxes (Habtamu et al.,2015).No Tax, No Income; No Income, No Revenue; No Revenue, No Government(M.Moses, 2016). Taxes in Ethiopia can be categorized in to direct and indirect taxes.

2.1.1 Direct Taxes

Federal Democratic Republic of Ethiopia IndirectTax(FDRE IT), Proclamation No. 286/2002 states that direct taxes are taxes imposed on direct income of any individuals or company. These taxes majority have progressive rates; however, other has fixed (flat) rate that generate tax income progressively and proportionally related to taxable persons income respectively. These are: Employment Tax, Building Rent Tax, Business Profit Tax, Other Income Taxes (Tax on interest Income on Deposits, Dividend Income Tax, Royalties Tax on Income, Games of Chance Tax on Income, Gains of Transfer of Certain Investment Property Tax on income, Rental of Property Tax on Income, and Rendering of Technical Services outside Ethiopia Tax on income) (MisrakTesfay(2008) in Teklu, 2011).

2.1.2 Indirect Taxes

Indirect tax is that tax which is initially paid by one individual, but the burden of which is passed over to some other individually who ultimately bear it. The sales tax, Value Added Tax ,Customs Duty are the best examples of the indirect taxes (M.Moses, 2016).

According to the current Federal Income Tax Proclamation No. 979/2016, taxpayers are divided into three categories, namely “A”, “B”, and “C”, based on their sales volumes and the ways in which their businesses are set up. Category “A” includes any company incorporated under the tax law of Ethiopia or in a foreign country and other entities with an annual turnover of 1,000,000 Ethiopian birr or more. Category “B” includes enterprises with an annual turnover of more than 500,000 birr but less than 1,000,000 birr. Category “C” includes taxpayers whose annual turnover is estimated to be less than 500,000 birr by the tax authority their daily income is estimated by assessment committee (Abera, 2019). Category “ A”& “ B” taxpayers keeping accounting records, balance sheet information, daily incomes and expenses information, purchases and sales information ,other documents , vouchers and financial reports submit to the revenue authority at the end of each year. The law requires all entries in the records and accounts to be supported by appropriate vouchers(Council of Ministers Regulation no. 78/2002, Article 18, Sub Article 2, 2002).

Governments perform many activities to fulfill the social welfares in any country. There are a number of public activities which need finance to operate them. Eric(2008) contended that common expenditure programs include health and welfare programs, defense, spending, social security, and interest and repayment of principal on government debt. The major source of government income to cover the various expenses is tax in most economies, especially in developing countries like Ethiopia. The problem of voluntary tax compliance is as old as taxes themselves. The consequences of non-compliance tax payers to governments’ performances have been debated by number of scholars. Ebeke&Ehrhart (2010) noted that tax revenue mobilization in Sub-Saharan Africa (SSA) was not only low compared to spending needs but also suffered from high instability. Indeed, instable revenues are costly because they might force the government to consequently cut public spending, leading to public spending instability. Thus, characterizing and explaining the observed patterns of tax non-compliance, and ultimately finding ways to reduce it, are of obvious importance to nations around the world (Andreoni et al.,1998).Wolela(2008) noted that there may be weaknesses in how VAT administrators perform their duties and weaknesses in VAT administration, in turn, may adversely impact on the salient features of the tax and government’s policy objectives as a whole. Tax administration pertains to how tax authorities discharge the responsibilities entrusted to them. According to Jantscher(1990), these responsibilities include a range of related activities such as taxpayer identification

and registration, invoicing, filing and payment requirements, control of filing and payments, refunds, audits and penalties. The study area of category "C" taxpayer is the most problematic category of taxpayers and it is considered as hard to tax group. This is due to the fact that these taxpayers pay taxes at fixed rate on the income estimated by tax administration (Daniel &Shaik, 2017).

2.1.3 Tax Elasticity, Buoyancy and Stability

Tax buoyancy, elasticity and stability are the indicators used to measure the tax responsiveness visa vis income. Tax buoyancy measures the total response of tax revenues to changes in national income or GDP and also policy changes by tax authorities. Tax buoyancy is usually computed by regressing the log of tax base revenue on the log of GDP, sometimes incorporate control variables. A tax is said to be buoyant ,if the tax revenue increases more than proportionately in response to a rise in GDP (Belinga et. Al(2014) in UNDP ,2016).

The benchmark for dynamic performance of a tax system is its ability to grow at the same rate as income/GDP. Tax revenues' increases overtime can be through tax bases grow with the economy, changes in the tax laws either broaden tax bases or increase tax rates, better enforcement of an existing tax structure and related ones. When only the first effect is present, the ability to grow is measured by the elasticity of the tax system; and when all effects can be present, the ability to grow is measured by its buoyancy.

A high (>1) tax elasticity is said to be a government can finance public services through increasing tax revenues without the need for decision to raise taxes, even can reduce the taxes (by decreasing tax rates). On the contrary, if the elasticity is less than unity, the government will work hard to keep on the services demanded by the economy, can introduce new taxes or increase the existing tax rates or higher money supply or inflation(Mulualem E., 2018).

Tax elasticity is a hypothetical construct that tries to indicate the pure effect of changes in income by controlling for discretionary changes and administrative improvements. Basically it helps to identify which taxes are or will yield more revenue as income/GDP increases. Usually tax elasticity is considered a better indicator to measure the segregate tax revenue responsiveness.

Tax stability measures whether taxes' revenue is relatively stable. Stability of revenue helps governments to have plausible spending and borrowing plans. A simple measure of stability of

revenue is the coefficient of variation which is defined as the standard deviation of tax revenue divided by its mean (Haughton (1998) in UNDP, 2016).

In this study, tax marginal effects, elasticity and stability approaches applied in the OLS and Log models in the cross sectional and panel analyses.

2.1.4 Theoretical Models of Tax Compliances

There have been various theoretical models in relation to non-compliance tax payers, each other are interconnected, and evolution of one by the others (Cullis and Lewis (1997),McKerchar(2002) and Alm et al. (1999) in Wollela A. and Odd –H., 2016).McKerchar (2002) described the tax compliance models by three broad groups:- (i) economic deterrence(focusing on penalty and audits) , maximizing tax payers' benefits compared to their costs due to not paying; (ii) social psychology(the influence of attitudes, perceptions and related ones on compliance tax payers) ; and (iii) fiscal psychology models(the mixes of both). Fjeldstad et al. (2012) suggested that the behaviors of tax payers reflect at least one of the following five tax models:- (a) economic deterrence(punishment, audit), (b) fiscal exchange(what visible public benefits come from paid taxes), (c) social influences(attitudes, perceptions, beliefs, personality traits and peer groups' influences , social sanctions and others) , (d) comparative treatment(not treated equally the tax payers, D'Arcy (2011)), and(e) political legitimacy(weak legal frame work, intuitional set up, tax administrations, tax rates, incapable tax officers, corruptions and others). Sociological and demographic factors also influence the tax compliances (age, dwellers' places (urban, rural), gender, education, occupation, ethnicity, religion, etc.).

2.1.5Tax Administration

Tax administration is a component of public administration designed to control the processes and operations of public revenues in accordance with new public management approaches which focuses on efficiency, performance measurement and requirements of good governance(Teklu, 2011).Tax administration is the implantation of tax policy. Tax policy and tax administration are the means by which governments raise revenue to finance spending on public goods and service.

The best tax policy in the world is worth little if it cannot be implemented effectively. Effective tax administration requires qualified tax officials. Tax authorities must provide for training and retraining staff as needed.Tax administration involves in several activities:Taxpayers

registration, Tax assessment, Tax collection and service delivery of tax authorities (ALPHA-UCODS Teaching Manual) .

Taxpayers Registration

Any tax Administration is to facilitate compliance. Taxpayers' registrations are mandatory and the registration process should be as easy as possible. Systems must be in place to identify those who do not register voluntarily. Tax authorities should adopt appropriate unique taxpayer identification systems to facilitate the compliances and enforcements (ALPHA-UCODS Teaching Manual).

Tax Assessment

Tax assessments are fundamental to tax collection. Taxesincomes have laws to impose the taxes and a system to assess and collect it. An assessment is the end result of the process of ascertaining a taxpayer's taxable income and calculating the tax payable on that income. There are two types of tax assessment: Selfassessment and Official (Administrative) assessment(ALPHA-UCODS Teaching Manual).

Tax Collection

Tax collecting is a challenging task for tax authorities specially large number of taxpayers with different taxes (ALPHA-UCODS Teaching Manual).

Tax collection is a dynamic subject which develops with the steady in the financial condition in which it works that is the most reason the arrangement managing it should be investigated always (Feyitimi(2014) in Abdu &Wondimu, 2019).

Organizational Strength of Tax Authorities

According to CTPA OECD (2001), the main role of revenue authorities is to ensure compliance with tax laws. Their effectiveness is dependent on a variety of external factors such as the state of the economy, public support for the priorities of the government and the willingness of taxpayers to comply with tax rules. In an ever-changing environment, revenue authorities must have a clear focus on what their goals are and continually review their operating approaches and procedures to ensure they are making the most effective and efficient use of the resources available to them. When compliance is not achieved on a voluntary basis, revenue authorities must identify and address the risks associated with non-compliance by developing strategies targeted at those risks.

Good revenue authorities are strategically focused and responsive to changes in their environment and their taxpayers, and authorities can be characterized by how they relate to taxpayers, their employees and other revenue authorities. To relations with taxpayersresponsiveness translates into accessible, dependable and timely information service as well as the accurate and timely treatment of requests and appeals. This can be achieved by constructing systems and procedures that are aimed more towards the needs of the taxpayers than those of the tax administration. This would be to facilitate links with taxpayers through single points of contact to ensure that services are available when and where needed. Efforts to develop enhanced electronic means of communication between taxpayers and the revenue authority which could include enabling the electronic submission of returns, introducing facilities for electronic payments and on-line access to account balances (CTPA OECD, 2001).

Concept of Tax Compliance;

Tax compliance defined as the reporting of all incomes and payment of all taxes by fulfilling the provisions of laws, regulations and court judgments (Jackson &Milliron, 1986). Tax compliance with the tax laws typically: i) true reporting of the tax base, ii) correct computation of the liability, iii) timely filing of the return and iv) timely payment of the amounts due(Dejen et al.,2014). Similarly, the definitions of tax compliance frequently used in the literature might be considered to be too simplistic. The most common previous approach has been to conceptualize compliance in terms of the "tax gap", This represents the difference between actual tax revenues collected and estimated / potential tax revenue based on prevailing characteristics of an economy and income level(UNDP Ethiopia, 2016).Tax voluntary compliance has also been segregate into two perspectives, namely compliance in terms of administration and compliance in terms technique. Administrative compliance is made up of reporting compliance, procedural compliance and regulatory compliance. Whereas, technical compliance is concerned with meeting up technical requirement of tax laws in computation of tax charge (Alabede et al.,2011). Theoretically the above definitions of tax compliance are acceptable, but taxpayers are not always compliant. Most tax payers are not paying their tax liabilities voluntary because of lack of understanding the benefits of being compliant. Literature on "tax compliance benefits" categorized into three broad categories, namely cash-flow benefits,managerial benefits, and tax deductibility benefits(Dinku&Alamirew, 2018). Tax non compliance is a challenge not only to government revenue but also to social welfare and allocation efficiency(Dejen et

al.,2014).Similarly,Mesele(2018)mentioned that tax non-compliance was a serious challenge slackening income tax administration and tax revenue performance in Ethiopia, as it done in some other developing countries.

2.2 Empirical Reviews

2.2.1 Determinants of Tax Compliances/Efforts

According toKassa(2010); James(2000); Lemessa(2005) and Rizal(2011) in Daba (2017), factors affecting tax payer's voluntary compliance with tax law were fairness or equity, organizational strength of the tax authority, awareness, cultural factors, social factors and attitude towards the government are factors affecting tax payer's voluntary compliance with tax law.Similarly, Manchilot(2018) indicated that factors affecting tax compliance of taxpayers were fairness of the tax system, penalty, tax rate, perceptions of government spending and compliance cost were found to be the determinant factors that affect taxpayer's voluntary compliance.Besides, studies done byLoo(2006),Pail(2010) and Kichler(2007) , and other researchers indicated thatfactors that affecting tax compliance attitude of taxpayers can be divided into five major categories:- demographic factors (age, gender ,family size, and others), social variables(education, perception on equity and fairness of tax system), individual factors(financial constraints, tax knowledge, personal awareness of offense and penalty),economic factors (tax rate, income/expenditure level, tax audit and perception on government spending), and finally institutional (change in government policy, regulations and others).

Regarding tax administration weakness, Tanzi and Pellechio(1995)inMikesell(2007) noted that poor tax administration would change the manner in which taxation affects government's policy objectives, namely economic stabilization, resource allocation and redistribution of income. In developing countries, the poor performance of taxes is likely to be due to weak tax administration (i.e., the incapacity of the administration to implement the tax in practice).Bird andGendron(2005) noted that developing and transitional countries, unlike developed countries, appear to have fragmented economies, large informal sectors, low tax morale, rampant evasion, and total distrust between tax administrators and taxpayers. In these countries, thus, simply adopting a successful VAT's design attributes of developed countries would not make the tax successful.

The design ought to consider the tax administration dimension and the socio-economic realities of the developing country in question. The impacts of tax administration on government revenue in the case of Nigeria have suggested that management and organizational approach in the implementation of tax administration is very weak. These weaknesses could be traced to the use of poor tools, inadequate staffing of the tax-collecting organization, poor funding, bad access road to the interior of the rural areas, poor enlightenment, lack of knowledge about their job and periodic training. These practices caused to tax officers toweak on their performances (James &Abiola, 2012).

Botlhole (2010) conducted a study on the determinants of tax effort in sub-Sahara Africa over the period 1990-2007, using panel data covering 46 countries. The per-capita GDP, openness and share of agricultural output were the main determinants of tax collection.

Addison and Levin (2008) studied on ,using panel data, the determinants of tax revenue in Sub-Saharan Africa , found that higher tax to GDP ratios were related to the openness of economies, smaller size of agriculture sector, and economic and political stability.

Drummond et al (2011) in UNDP (2016) conducted a study on panel data covering 28 low income countries on the determinants of tax revenue in Sub Saharan African (SSA) countries. The findings werethere were significant and positive correlation between quality of institutions and revenue mobilizations.

2.2.2 Empirical Reviews in Ethiopia

The tax authorityin any country has played asignificant role in tax administration practices , the same is true in Ethiopia.Lemessa(2007) in Ayele et al.(2017)concluded that the tax authority was the responsible body for assessing and collecting the city's tax revenue. The amount of revenue collected directly depends on the efficiency and effectiveness of the authority. Araya (2011)inAyele et al.(2017) found that majority of the tax payers have low awareness about their responsibility and accountability in relation to tax collection. As a result, they did not perform their obligations related to tax collection activities, and the required tax has not been collected even from governmental bodies. According to Araya (2011), the survey result showsthat the tax authority of the city administration is not efficient and effective in various aspects such as improving the tax assessment and collection system, creating awareness, enforcing the tax law, providing services, and information regarding tax.

Bayu (2015) analyze tax buoyancy and its determinants in Ethiopia, using time series data. The findings indicate that direct and domestic indirect tax revenues are non-buoyant both in the short and long run. The share of service sector value added, level of import and over all government budget deficits to GDP affected the tax buoyancy positively, whereas the impact of the share of official development assistance to GDP is negative. The conclusions of the result indicate that tax revenues are non-buoyant in Ethiopia, emphasizing the need to enhance the efficiency of revenue administration in bringing new customers in to the tax systems.

Wollela A. and Odd –H.(2016) conducted a study on business people's views of paying taxes, surveyed on 500 businessmen in Addis Ababa. The descriptive and econometrics model (robust ordered probit) analyses indicated that there were compliances of businessmen towards taxpaying. The variables which are statistically significant in explaining tax compliances are compliance behaviors (peer group, etc.), punishments, probability of audit, perception of corruption, gender and education. Female respondents were more likely to have a compliant attitude than male. The paper recommends further research to be done on tax paying complaint issues.The paper used a robust ordered probit model so that the hetroscadicity corrected. Nothing said about multicolinarityproblems of the explanatory variables.

UNDP Ethiopia (2016) conducted a study on the determinants of tax revenue in Ethiopia. The results of both the descriptive and econometric analysis (time series data) suggest that huge tax incentives/ exemptions, illicit financial flows and slow structural transformation, low level of savings, poor economic governance and weak administrative system and organizational capacities were challenges to increase the tax revenues. If the stated challenges are addressed, it is possible to tap the potential and increase tax collection in Ethiopia.

Mulualem E.(2017)analyzed the revenue productivity of tax system in Ethiopia in the period 1981-2016 using the concepts of tax buoyancy and elasticity. Ordinary Least Square (OLS) method was employed in estimating both elasticity and buoyancy for the tax system and its components. The findings indicated that the tax system and its elements were income inelastic; implying that the total tax revenue was increasing at slower pace than the economic growth. The buoyancy estimates suggested that the tax reform measures were effective in raising additional revenue, and contributed a lion share in tax revenue collection than the natural growth of tax revenue. Tax reform measures such as enhancing the efficiency of tax administration in tax

assessment, tax law enforcement and control of tax evasion forwarded as recommendations to optimize the tax revenue collections.

Ayele et al.(2017) conducted a study using bothqualitative and quantitative/econometrics models; however, noting said about theeconometrics model. The conclusions of the study were theperformances of the tax authority were ineffective ,nottransparent and hardly understandable to the taxpayers so that needs revisiting the working systems and promotes transparency to enhance the trust of tax payers.

Daniel &Shaik(2017)found out that the major leading reason for the non-existence of voluntary compliance among category 'C' taxpayers was lack of awareness. Efficiency and effectiveness on the side of the Tax authority for the improvement of the tax assessment and collection procedures, creating awareness, and enforcement of tax law have positive impacts on the voluntary compliance of taxpayers while socio-cultural variables positively and negatively affect the attitudes of the taxpayers. Political factors, however, had nothing to do with the attitudes of taxpayers in his study area. The methodology used in the paper limited to the frequency distributions so that the accuracy of the results may be low since it has limitation such as different tests and others.

Daba (2017) conducted a study using quantitative approaches including descriptive statistics including correlation test and Multiple Regressions. The major determinants of non residential house rental income tax payers' voluntary compliances were financial constraints, awareness of tax payers, perception on tax fairness, understatement of income, educational status, absence of government incentives, trust in tax assessment and collection procedure and rental tax audit. The paper used OLS ;however,in case of the dependent variable is a discrete condition or categorical (either dummy or ordinal values) ,the ordinary least squares (OLS) method of estimation is too biased and inefficient.

Dinku&Alamirew(2018) conducted a study using both quantitative, descriptive and multiple linear regression models. The Pearson correlation and multiple regression results showed that the level of voluntary tax compliance was significantly related with audit productivity, tax investigation and penalty.

Mesele(2018) used both descriptive and a multiple linear regression model(ordered logit) to examine the determinants of tax compliance. The findings indicated that tax compliances mainly influenced by the probability of being audited, financial constraints, and changes in government

policy. The recommendations areall tax payers should treated equally, participatory of taxpayers , and capacity building of employees. The study did not acknowledge the problems in the cross-section data ,hetroscadicity , multicollinarity and others and their correction mechanisms.

Abdu Mohammed A. and Wondimu S.(2019) conducted using descriptive statistics and econometric model particularly ordered logit model. Tax compliances significantly (positive) affected by tax knowledge/ awareness of tax payers, simplicity of the system, attitude towards tax, government expenditure, and rewarding scheme for loyal tax payers. Recommendations forwarded by the study were sustainable awareness creations and tax education to the general public. Nothing said in the study about hetroscadicity ,multicollinarity and others and their correction mechanisms.

Abera(2019) used both descriptive and a Binary LogisticEconometrics Model. The findings indicated that the presumptive of income tax collections had significant relations with the equity and fairness of the tax system; corruption behavior of tax officials; the organizational strength of the tax authority; the participatory tax system; taxpayers' knowledge of tax rules and regulations; and the attitudes of taxpayers toward the government. On the other hand, social norms, mode of tax payment, and perception of tax evasion had positive but insignificant. The paper nothing said about the famous problems in cross-section data ,hetroscadicity, multicollinarityandothers and their correction mechanisms.

Netsanet S. and Biniam T.(2020) conducted a study using both primary and secondary data, mixed approach. The regression analysis(ordered logit) indicated that the compliance of tax payers significantly affected by Age, Education, Tax knowledge, Financial Constraints, Absence of Fairness, Role of the Tax Authority, complexity of Tax System, Absence of Tax Audits and Government Spending. Sustainable tax education/training to the tax payers, simplistic tax systems, incentives for loyal tax payers, and reducing tax rates stated as some of the recommendations. Nothing said about hetroscadicity and its correction mechanisms.

2.4 MajorResearch Gaps

There have been studies on tax systems including tax productivity ,efficiencies ,determinants, administration practices and related ones at country and regional levels including Addis Ababa. However, so far no or limited study conducted on category 'C' tax payers tax administration, which take a lion share in numbersfrom all tax payers , in Addis Ababa including Akaki-Kality

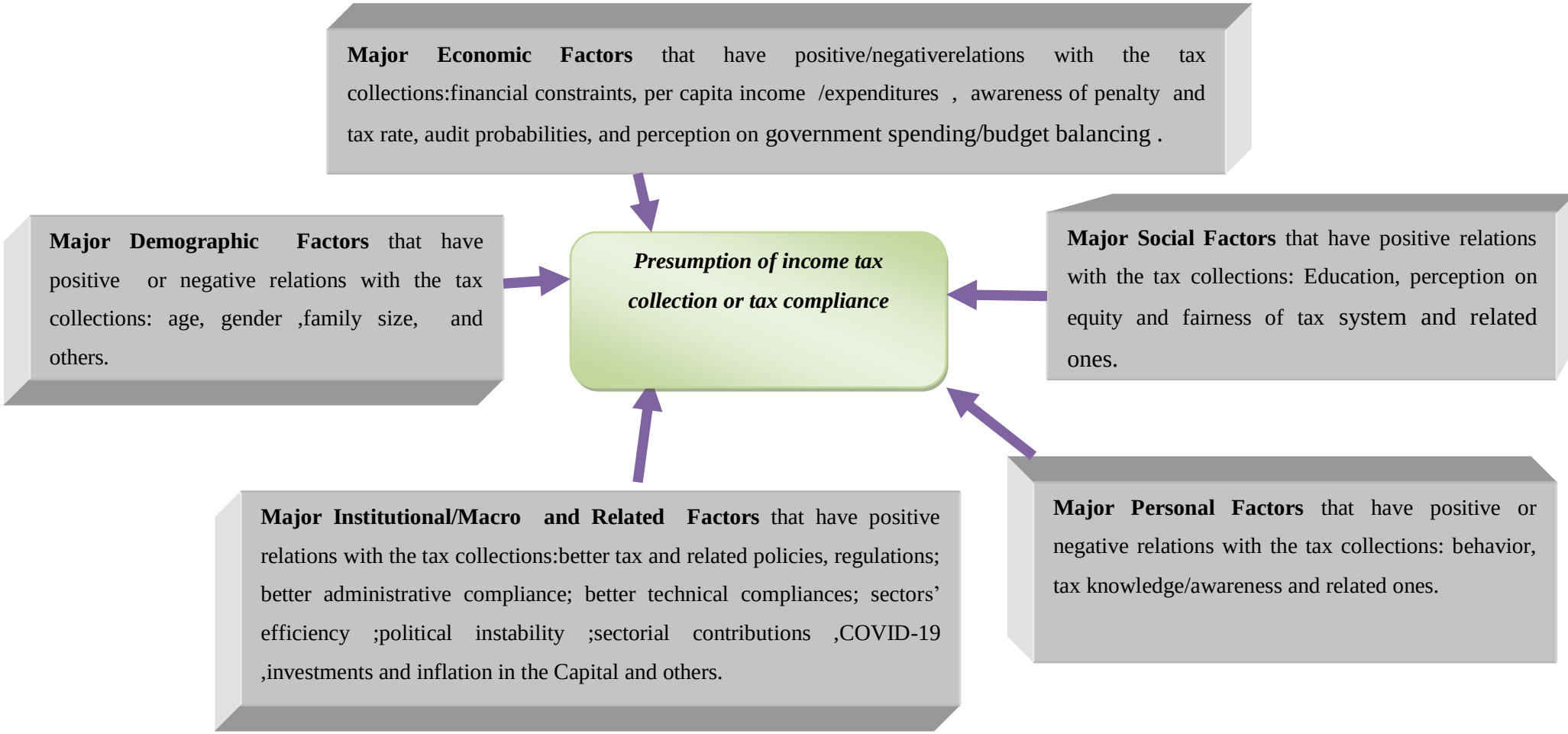
sub city. Besides, the methodologies used in the most of the studies do not use mixed approaches so as to reliable on the results and could not create clarity as far as they did limited testing procedures. There is, also, nothing local study found on tax system using panel data. Broad ranges of methodologies including control tools and tests of their accuracies lead to the reliable and consistent results. Hence, in this context, the objectives of this paper are to examine the factors affecting tax compliance of Category 'C ' Tax payers, in AkakeKality sub cityusing mixed approaches ,stated in the methodology part, based on primary and secondary data sources, and identify the main administrative constraints that deserve the government's due attentions.

Besides, the variables to be incorporated as dependent and explanatory variables elaborated in model specificationssuchas**Demographic and related** (age, gender, marital status and family size), **Economic Factors(** income/expenditures , financial constraints, awareness of penalty and tax rate, audit probabilities, and perceptions on government spending and balanced budgets),**Social Factors(** Education, perception on equity and fairness of tax system and related ones), **Personal Factors(** behavior, tax knowledge/awareness and related ones), and **Institutional Factors(**better tax and related policies and regulations; better administrative compliances; better technical compliances; sectors' efficiency and others).Here, the dependent variables are expected to be both discrete(tax compliance) and continues(actual income tax collected by the category) variables. In case of cross section data analysis, the study has used expenditure /proxy of income as one of explanatory variables. The study has applied the following econometrics models such as OLS ,Log, Logit ,Logit by break downs complaint values, and Ordered logit ;and the Panel ones.

2.5 Conclusion and Conceptual Frame Work

As stated in the theoretical concepts of taxes,Tax Elasticity ,Bouncy and Stability, Theoretical Models of Tax Compliances ,and Tax Administration practiced in many researches related to the topic including the stated above in general. The study also has exercised the models of Tax Elasticity and Stability, Models of Tax Compliances and Tax Administration. The conceptual frame work explained in summary form , figure 1.

Figure 1: The Relations/Conceptual Frame Work of Tax Collection with Five Major Influencing Factors



Source: The Author(2021)

CHAPTER III: RESEARCH METHODS, MODEL SPECIFICATIONS AND METHODOLOGY

It is an important part of the study to attain the set objectives and/or research questions. The study has proposed methods how to proceed the study such as types of data (cross sectional, panel and qualitative data); identifying data gaps; the data collection and processing ways; and others. The chapter consists of researchdesign, approaches/methods, model specifications and methodology.

3.1 Research Design

Research design comprises of the major study issues, starting from statement of the problem up to conducting the study. It helps the study to go inefficient manners. The study consists of the following design components such as the selections of appropriate variables; data collection tools (qualitative, quantitative, mixed), time dimensions data (cross sectional, time series and panel); implementation schedules ; conducting survey (pre-tests, census, and sampling); analyses (descriptive, tabulation, evaluative, qualitative, econometrics, etc.); and ethical considerations.

3.2 Research Methods/Approaches

There are two research approaches ie quantitative and qualitative ones. The quantitative involves more in numerical or statistical dataanalyseswhere as the qualitative consists of qualitative tools such as key informant, focus group and public participatory discussions.

The study has applied both techniques,by considering the availability of the data , research gaps, and the objectives/ research questions , as of the needs. Quantitative data collection method consists of panel, mixed time series and cross section survey. The quantitative data collected by secondary and primary data collection tools. The secondary data collection tools used in the study consists of both panel and time series data. The panel data comprises of the past four years data(2009-2012 EC) of Category "C" tax revenues in the 9 Weredas of the Sub City, 36observations.Thequalitative tools,stakeholders/key informants,usedin the study,purposeful random sampling, are:- (i) 9experienced Tax Officers, one fromeachWeredaand 2 from the sub city tax office ; and (ii) 18 representative/experienced tax payers found in the sub city,twofrom each Wereda. The time series dataalso used as necessary in the descriptive analyses, at least in

the past four years (2009-12EC).The quantitative cross sectional survey elaborated in the sampling design part.

3.3 Sources of the Data

The secondary data considers reviewed published and unpublished theoretical and empirical literatures; manuals for Master's Research Thesis ; manually and electronically/internet data from the concerned tax offices at AkakiKalti Sub City Tax Office including the nine weredas' tax offices ; and other relevant sources such as CSA, ERCA, NBE different research papers and others.

The primary data stated Category "C" taxpayers in the AkakiKality sub city recorded data in 9 weredas tax offices and key informant.

3.4 Sampling Design

As the experiences of the most studies, census survey cannot be appropriate due to time, budget and other resources constraints. The efficient, effective and quality sampling designs have significant roles for quality and reliable findings from a sample. Before conducting a sampling design, the study target population should be clearly defined. The study populations were Category "C" tax payers in the Akaki-Kality Sub-City and recorded data in the Sub-City and 9 Weredas' Tax Offices.

3.4.1 Populations

According to the Akaki-Kality Sub-City and 9 Weredas' Tax Offices (2021), there are about 19,377 Category "C" tax payers (target populations), 57% Merchandise; 21% Home renting; 12% Transport; and 10% Printing, Advertisement and related ones .Besides, as to the same sources, the tax payers in the same sector have more than 90 % homogenous natures ,for instance their annual sales turn over are below 500,000 birr.

3.4.2 Sampling

i) Quantitative for Time Series and Panel Data: The sample size level in the time series and panel data depends on the techniques of the study uses. For instance, in time series and panel data in econometrics model, advisable to use at least 30 observations (Gujarate,2004). There is no fixed rule of sample size level for descriptive analyses.

- The **panel data,** comprises of the past four years data(2009-2012 EC) of Category "C" tax revenues in the 9 Weredas , 36 observations.

- **Cross sectional data;** populations were Category "C" tax payers , recorded data in the Sub-City and 9 Weredas' Tax Offices.

ii) Qualitative Survey: There is no rule for key informants sample size determination (ECSU, 2017). The sample size depends on the homogenous natures, sizes, experiences and the informants' characteristics. The study decided, as stated in 3.2, such as the sample sizes of the 27 key informants (in wereda level 18 from tax payers, 9 from tax officers and 2 the sub city tax expert); however, actually contacted 29 key informants.

iii) Sampling Size Determinations in Cross Section Survey

The study considers two commonly used cross section survey sample size determinations:-

1. ***The sample size for collecting quantitative survey data was determined using Cochran's 1977 formula as indicated in*Ayele, Getnetet al2017.**

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = Sample size

N = Total population size

e = Level of precision.

2. ***On the other hand, to determine a statistically acceptable sample size, the following scientific formula which is normally applied for variables with binomial distribution was used*** (Kothari1995 and Fisher et al(1991) in Gambela Peoples' Regional State Bureau of Finance and Economic Development Socioeconomic Survey Report(USAID),2008).

$$n = k\frac{z^2 p(1-p)}{d^2} \quad , \quad \text{where}$$

n=statistically acceptable minimum sample size.

z=Standard normal deviation 1.645

P= proportion of the target population, 0.90(90% homogenous natures of Category "C" tax payers of Akaki-Kality Sub-City) .

d=Degree of accuracy desired, usually set at 0.05.

k=Design factors providing a correction for gain or loss of sampling efficiencies, usually in cluster or strata sampling instead of simple random sampling,1/3.

The latter one considers design factor and proportion of target populations which are not found in the initial one. In this study, the sampling design factor(***k***) considers three stages to reach a simple random sampling. These are: - **(i) First stage,** the tax payers stratified by 9 Weredas in Akaki-Kality Sub-City; **(ii) Second stage**, the tax payers in the 9 Weredas stratified by four sectors, Merchandise; Home renting; Transport; and Advertisement and related ones; and **(iii) Third stage**, simple random sampling conducted on the four sectors in each wereda, as to their proportions. Therefore, the sampling design factor (***k***) efficiency of this study is three times better than that of simple random sampling at first stage ie***k***=1/3, **n** should be minimum 32 observations. However, the study decided to take **100 observations** (actually 95 respondents surveyed) by considering the stated three stages.

3.5 Model Specifications

The chosen models for this study explained in Tax Elasticity, Buoyancy and Stability , Theoretical Models of Tax Compliances and Tax Administration.

3.5.1 The Relations of Tax Collection Nexus Major Determinant Factors

Based on the determinants of factor of affecting Tax compliance stated in the above sections, the model specification illustrated as follows , the relations between tax administration and presumption of income tax collection or tax compliance.

3.5.2 Econometrics Methodology

3.5.2.1 Panel and Cross Section Econometrics Models

i) Cross Section Econometrics Model

Of theOLS approaches that used in the cross sectional data, the study select the robust ordinary least squares (ROLS) as it corrects the famous problems such as hetoscadicity ,multi collinearity , and serial correlation.Therobust ordinary least squares (ROLS) including log approach estimation applied in case of the tax revenue is continuous, computing tax elasticity and marginal effects, used to measure tax efficiency ,sector roles and others stated in the objectives and hypothesis parts. On the other hand , in case of the dependent variable of presumptive income tax collection or tax compliance is a discrete condition or categorical (either dummy or ordinal values) ,the ordinary least squares (OLS) method is too biased and inefficient. Hence, in

this case, probabilistic such as Logit(dependent variable is dummy) and Ordered Logit(dependent variable is ordinal/rank values(very low =1, low =2, moderate =3 , high =4 , and very high values =5) used in this study (Gujarati, 2004). The paper used also the logits of binary categorical variables to estimate their effects segregately (no value =1 ,otherwise=0; very low value =1, otherwise =0; moderatevalue =1 , otherwise =0; high value =1, otherwise =0 ; and very high value =1 , otherwise =0) .

$$PI_i = \beta_0 + \beta_i X_i + \varepsilon_i \quad \text{--(2)}$$

Where

- PI_i = presumptive income tax /compliances of tax payers .
- X_i = Influencing factors of the dependent variable or independent variables.
- β_0 = a constant term, the start level of the tax payers.
- β_i = the unit or rate in which PI_i changes with respect to their respective variables and
- ε_i = the error term.

The cross section tests such as multicolllinarity , significances , hetroscadicity and related testsconductedor Robust Analyses done before analyzing.

ii) Panel Econometric Model

The major advantageous of the model are:- mixes of both cross-sectional and time series data (evaluates individually or /and pooled); minimizes the bias because of high observations; more degrees of freedom ,efficiency, informative data, variability, lesscollinearity among variables; increases the quality of outputs, better to detect and measure the effects; better to show the dynamics of changes and enables to use more complicated behavioral models[Gujarati(2003) and Chris Brooks(2008)].Thepanel Log/Linear approach estimations compute tax elasticity and marginal effects, used to measure tax efficiency ,penalty and others stated in the objectives and hypothesis parts.To examine the effects of the above major influencing factors on tax revenue by Category “C” tax payers in Akaki-Kality Sub-City, the study has used the following general standard panel econometric model(Linear/Log):

$$TXR_{it}/\ Log\ TXR_{it} = \beta_0 + \beta_1 AKNOEXP_t/\ \beta_1 Log\ AKNOEXP_t + \beta_2 DO_i + \beta_3 X_{it} + C_{it} + \mu_{it} + \varepsilon_{it} \text{-} (1)$$

Where

$TXR_{it}/\ Log\ TXR_{it}$ = is the tax revenue by Category "C" tax payers at the variant of the weredas.

$AKNOEXP_t$

$AKNOEXP_t$ or $LogAKNOEXP_t$ = is an indicator of the income or expenditures/proxy of income/ of the Sub City $_{it}$ at the invariant of the weredas.

DO_i = shows dummy or ordinal values of government tax administrations$_{it}$(tax policy, regulations, audits, penalty, institutional strengths, political instability, Covid-19, etc**)** at the variant of the weredas.

X_{it} = represents instrumental or control variables affecting the tax collections at the variant or invariant of the weredas such as lags of TXR_{it}, investment in Addis Ababa, , and others.

C_{it} = captures un observed the weredas' specific time invariant variables.

μ_{it} = denotes time dummies affecting the weredas.

ε_{it} = is the White noise error term.

β_0 = is a constant term , the start level of the tax revenue by Category "C" tax payers,

$\beta_{1,2,and\ 3}$ = are the units or rates in which TXR_{it}changes with respect to their respective variables.

The panel regression models includes the Pooled Ordinary Least Square**(POLS)** , which assumes that both the intercept and coefficient are constant over time and cross sections, disturbance term captures all the disturbances occurs. The Fixed Effect Model **(FEM)** referred as to the "Least-Squares Dummy Variable **(LSDV)** model", estimates the intercepts , which varies as coefficients of dummy variables in fixed or time effect or in both effects but their slop coefficients are constant. This model also allows both the intercepts and slope coefficients to vary over individuals and time effects. The Random Effects Model (REM), the "Error

Components Model (ECM)", considers the intercepts as random variables rather than fixed ones. The Hausmantest(1978) used to decide in choosing whether the Fixed Effect Model or Random Effect Model. Both the FEM and ECM do not solve the problems of simultaneity bias , endogenous problems, serial auto correlation(caused by lag dependent variables) and reverse causations especially if the study used control or instrumental variables so that Two Stage or Robust Analyses conducted to mitigate the stated problems (Gujarati(2004) ; Chris Brooks(2008) and E view10(2015)).

The descriptive and econometrics(panel and cross-sectional) tests of multi colllinarity , significance , serial auto correlations, information criteria and trend specification selections, control variable validity , co integration ,unit root, simultaneous bias, causality and related tests conducted to decide the validities of the results.

3.5.2.2 Steps for Panel Model Analyses

i) Step I- Correlation Coefficients Tests

The study tested the correlations among the variables including both dependent and explanatory variables (as percents or logs) at levels for all models. It is an important tool to check/identify : (i) Whether the multicollinearity problems exist among explanatory variables or not; and (ii) The similar natures of the variables to avoid the redundant works. If the variables' correlation coefficients are 0.7 and above, the redundant variables will be excluded since the incorporated variable can explain the redundant variables, and the multicollinearity problems will also be avoided.

ii) Step II- Panel Unit Root Tests

The panel stationary tests are crucial since it is a mixture of both cross-section and time series data, before going for further analyses. The complex nature of the panel data causes to fail to use the usual ADF unit root test , may result in bias estimates. The study conducted Phillips-Perron panel unit-root test(individual effect) by considering asymptotic Chi-square distribution in the presence of individual cross-sectional dependence. The individual cross-sectional dependence tests (Pesaran CD) for all given variables were significant at 1%, detect the presence of cross-

sectional dependence. If the variables are not stationary at level ,go to first order I(1) , if not go to second order I(2) and on wards.

iii) Step III- Testing for Co-integration and Estimating the Long-run and Short Run Estimates

After unit root test, the study continued the process of estimations , con-integration approach. The long -run co integrating relationship needs to verify that all the variables are to be integrated at least at order one i.e. I (1). However , due to insufficient information (caused by differences), Eview could not compute the test so that the estimates would be short runs .The more loss the initial values , the more lead to wrong itepeations (E-View 10, 2015).

3.5.2.2Descriptions, Codes, and Signs of the Parameters

Table 1: Descriptions, Codes, and Signs of the Parameters			
Codes	**Descriptions***	**Expected Sign with the Dependent Variable**	**Remark**
I)	**Panel Analyses**		
	1. Dependent Variable		
TXR_{it}	Annual Tax Revenue by AkakiKalitiWeredas		
	2. Explanatory Variables		
$PENAL_{it}$	Annual Tax Penalty Revenue by AkakiKalitiWeredas	+ve	
$AKNOEXP_t$	AkakiKaliti Sub City Annual Nominal Total Expenditures (income proxy) **	+ve	
$AKREXP_t$	AkakiKaliti Sub City Annual Real Total Expenditures(income proxy) ***	+ve	
POSTA	Annual Political Stability in the Sub City(if Yes=1 ,other wise =0)	+ve	
COV19	Annual COVID 19 impacts in the Sub City(if Yes=1 ,otherwise =0)	-ve	
$AAINV_t$	Annual Addis Ababa Investment	+ve	Control/Instrumental Variable
$AAINF_t$	Annual Addis Ababa General Inflation Rate	- /+ve	"
II)	**Cross-sectional Analyses**		
	1. Tax Administration/Compliances (Dependent Variables)		
VTCD21	Do you believe that there is a voluntary tax compliance or the presumptive tax collection in the Sub city?(Yes=1,No=0)		
VTCDE221	No Tax Compliant=1,Otherwise=0		
VTCDE222	Very Low Value for Tax Compliant=1,Otherwise=0		
VTCDE223	Low Value for Tax Compliant=1,Otherwise=0		
VTCDE224	Moderate Value for Tax Compliant=1,Otherwise=0		
VTCDE225	High Value for Tax Compliant=1,Otherwise=0		
VTCDE22	How do you evaluate the voluntary tax compliance or the presumptive tax collection efficiency in the Sub city ?(Very low(1) to Very high(5))		
PRT23	Did you pay tax last year? How much?		
	2. Explanatory Variables		
	2. 1 Demographic		
GE11	Gender(M=1, Otherwise =0)	- /+ve	
AG12	Age	+ve	
MS13	Marital status (Married =1, Otherwise=0)	+ve	
FS14	Family size	- ve	
ED15	Educational status	+ve	
TB16	1.6 Type of business		
BT161	1.6.1 Type of business-trade	+ve	
BHR162	1.6.2 Type of business-house rent	+ve	
BT163	1.6.3 Type of business-transport	+ve	
BA164	1.6.4 Type of business-advertisement	+ve	
YOB17	For how many years you are in this business	+ve	
	2.2 Social factors		
TED31	Have you ever participated on education by tax authority for tax payers?(Yes=1,No=0)	+ve	
TEFB32	How do you evaluate the feedback of the education/training ?(very low(1) to Very high(5))	+ve	
ETSF411	Ethiopian tax system is fair in general (Strongly Disagree (1) to Strongly Agree(5))	+ve	
HIHTP412	high-income tax payers are subject to tax at higher tax rate than low income-earners(Strongly Disagree (1) to Strongly Agree(5))	+ve	
CITSFS413	I believe that everyone pays their fair share of income under current income tax system (Strongly Disagree (1) to Strongly Agree(5))	+ve	
OTPEV414	As tax payer, do you believe that an organized tax payers are caused to non evading taxes, their commitment to comply will be stronger(Strongly Disagree (1) to Strongly Agree(5))	+ve	
NCNCG415	Do you agree that tax payers including you may commit non-compliance as long as your noncompliance is consistent with in-group expectations and norms(Strongly Disagree (1) to Strongly Agree(5))	+ve	
NCTPN416	The noncompliance of other taxpayers has a negative impact on compliant tax	+ve	

	payers' attitude(Strongly Disagree (1) to Strongly Agree(5))		
	2.3 Institutional factors		
TLSC511	Tax laws are simple and clear(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
RTLCUP512	Rules related to tax law are clear and understandable(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
MTLES514	Misunderstanding regarding tax law are easily solvable (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
SCDTO515	I have smooth communication and clarity with tax laws while discussing with tax officials(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TTSEU516	The terms used in tax return forms are very simple and easy to understand (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
SDG517	Service delivery is good (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TCEP518	Tax collection efficiency is poor (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TRPE519	Tax registration process is easy(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TAFA5110	Tax assessments is fairly applied (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TLEA5111	Tax law enforcement is appropriate (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TAFTT5112	Does the tax administration fairly treat the taxpayers?(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
ACTLR5113	Awareness creation such as flaying papers, updated notices and tax laws /regulations for tax payers is regularly undertaken or posted on a visable places(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
	2.4 Economic factors		
CTARH61	Current tax Assessment rate on your business income is high(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
AHTRDA612	If Assessment rate is high, tax payers take different actions to reduce tax liability they owe(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
GEAUTR613	Government of Ethiopia is appropriately utilizing tax revenue (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
PEBTR614	Public expenditure of our country balanced with revenue collected in the form of tax (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
GISMCIT615	I believe that government improperly spending the money collected from income tax (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
NPNT331	If there is no penalty, there is possibility that I may not pay tax (Strongly Disagree (1) to Strongly Agree(5))	+ve	
NPET332	Because of I am fearing the penalty, I will not evading tax (Strongly Disagree (1) to Strongly Agree(5))	+ve	
TLNS333	I feel that the penalty rate for not complying tax law is not strong than other penalties for other crimes(Strongly Disagree (1) to Strongly Agree(5))	- ve	
PFCD34	Do you have any personal financial constraints?(Yes=1,No=0)	- ve	
AESPY36	Total expenditures +saving(proxy of income) per year	+ve	
AIPY711	Average of your income per year	+ve	
	2.5Personal attitudes		
TLRC71	Tax liability is the responsibility of citizenship (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
MTLTP72	I always pay my tax liability on time by declaring correct amount without enforcement (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TAHPIDIT73	I believe that, if tax assessment is too high, it possible inflate deductions from income tax (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
NPTR74	Not paying tax is wrong but some reasons that leads to this action (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
NPTRA75	Not paying tax is wrong action(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
NPTRAP76	Not paying tax is wrong and punishable (Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
TLR77	Tax law should be respected(Strongly Disagree (1) to Strongly Agree(5))	- /+ve	
COVIDD79	Do you believe that COVID-19 pandemics affect(negatively) many small and medium-sized business taxpayers?(Yes=1,No=0)	- ve	
COVIDEAD710	How do you evaluate the affect ?(very low(1) to Very high(5))	- ve	

* Log(L),Differences(D),Lag(-) ,Ratios and other as necessary derived from the original data.
**Computed based on CSA survey and NBE Report(2019/19) , by considering the annual Nominal GDP growth rate of the nation .
***Computed based on CSA survey and NBE Report(2019/19) , by considering the annual Real GDP growth rate of the nation .

3.6 Data Presentation, Reliability & Validity Tests and Analyses

The data collection procedures for the conducted survey were preparing questionnaire/ checklist, feedbacks by senior researchers, pre- test survey, conducted final survey, organized the information in the note book, and the findings summarized and analyzed. The Statistical Application Softwares such as Eview –Version 10, SPSS ,Excel and related ones used for data organizations, descriptive(tabulation, basic statistics ,and graphs) and econometric panel and cross-sectional analyses.

The data presented by three major analyses ie descriptive, econometrics and qualitative analyses. The data collection procedures for the first two techniques were from the secondary and primary sources. Encodingthe data using Excel or SPSS software in panel ,cross section and time series data formats ; editing ,verification and data cleaning done and exported to E-view 10 ; data organizations; derive some variables such as ratio ,percent, log, lags and related ones; and finally make ready the data for descriptive and econometric analyses. Time series analyses , tabulations ,trend analyses, descriptive(percent, range, ratio and others) ,figures ,and pearson correlation(tests) conducted to show the influencing factors on tax collections. Panel and cross sectional descriptive outputs (observations, maximum ,minimum, range ,mean, median, Std. Dev.,CV(%), and others) also used for the analyses. In general, the appropriate reliability &validitytests conducted, as tostated in 3.5.2 and 4.2.1.2, to decide the validities of the results.

CHAPTER IV: DATA ANALYSES AND INTERPRETATIONS

The chapter consists of responses, respondents' demographics and related profiles, descriptive and qualitative analyses, appropriate reliability and validity tests and different econometrics findings visa vis focusing on the research objectives or hypotheses. The outputs presented using tables, figures, descriptive statistics, equations, and narrativesofillustrations.

4.1 Responses, Demographic and Related Profiles

Table 2: Survey Responses

Particulates	Plan	Actual			% (performance)
	Total	**M**	**F**	**Total**	
1.Key Informants	27	12	17	29	107%
1.1Expeianced tax office heads	9	4	7	11	122%
1.2 Representative/experienced tax payers	18	8	10	18	100%
2. Respondents of the survey/Interviews	100	66	29	95	95%

Source : Own survey (2021)

The planned to contact for key informant discussions were: - (i) 9 experienced Tax Office heads, one from each Wereda and (ii) 18 representative/experienced tax payers found in the sub city, two from each Wereda. Besides, the study also conducted tax experts (2) found at the Sub city level. Actually, 29(107%) key informants contacted.

The planned to be respondents in the survey had been 100, actually conducted 95(29 females), five house renting businesses excluded due to unwilling.Majority of the respondents for qualitative and quantitative surveys werefemale (58.6%) andmale (70%), respectively. Thus, mostofthe tax office heads found at sub city/wereda levels are femalesiedue to currently the females' enrollments at government power positions increased. On the other hand , most of the tax payers, as to the study observations, found in the sub city are male ie most of the businesses controlled by male. The surveyed businesses, as to stated their, 60% Small trading, 16.8% Home renting, 12.6% Transport, and 10.5% Advertisement and related ones. The major mean values/percentages of , as of open ended questions, (table 3) ,the demographic profiles were age(36)/60% are below or equal to 36/, family size(4), education (grade 11)/Degree and above(15.8%), High School(67.3%), Elementary and Junior Schools(13.7%),and

illiterate(3.2%)/, and married (54.7%). From the above facts, the study understands that majority of the respondents who engaged in business of category" C" tax payers are youth , married/owned family , and literate.

4.2 Results or Discussions

The findings of the paper classified by two major components ieQuantitative(descriptive and econometrics) and qualitative analyses.

4.2.1 Quantitative (Descriptive and Econometrics) Analyses

Most of the variables incorporated in this section consider the theoretical/empirical literatures, variables/significant/ included in the econometrics models (4.2.1.2), and narratives or illustrations given during the survey or qualitative discussions.

4.2.1.1 Descriptive Analysis

The descriptive analysis usedtoevaluate the performances of major influencing factors in presumptive income tax such as the tax compliance, tax administration/institutional, personal attitudes, economic and social factors.

Table 3: Cross sectional Descriptive Analyses

Descriptions	CODE	Mean	Median	Max.	Mini.	Std. Dev.	Obse.	CV%	Jarque-Bera (prob,000)
I) Cross sectional Parameters									
1. Demographic									
Gender(M=1, Otherwise =0)	GE11	0.7	1.0	1.0	0.0	0.5	95.0	68.3	17.4
Age	AG12	35.5	34.0	62.0	20.0	9.8	95.0	27.5	7.1
Marital status (Married =1, Otherwise=0)	MS13	0.5	1.0	1.0	0.0	0.5	95.0	91.4	15.8
Family size	FS14	3.5	4.0	10.0	1.0	1.9	95.0	54.5	8.6
For how many years you are in this business	YOB17	5.5	4.0	26.0	2.0	4.2	94.0	77.5	398.2
2. Tax Administration/Compliances (Dependent Variables)									
Do you believe that there is a voluntary tax compliance or the presumptive tax collection in the Sub city?(Yes=1(70%),No=0)	VTCD21	0.7	1.0	1.0	0.0	0.4	93.0	61.0	20.1
How do you evaluate the voluntary tax compliance or the presumptive tax collection efficiency in the Sub city ?(Very low(1)/3.2%/ ,Low Value(2) /15.8%/, Moderate Value(3) /46.3%/, High Value(4) /6.3%/ and Very high(5) /0%/)	VTCDE22	2.8	3.0	4.0	1.0	0.7	68.0	24.0	6.4
Did you pay tax last year? How much?	PRT23	6806.2	4700.0	72000.0	1000.0	9217.2	87.0	135.4	3140.8
3. Social factors									
Have you ever participated on education by tax authority for tax payers?(Yes=1,No=0), , 80% no participate on education/ training.	TED31	0.2	0.0	1.0	0.0	0.4	95.0	201.1	35.9
Educational status	ED15	11.4	12.0	18.0	0.0	3.3	95.0	28.8	47.8
Ethiopian tax system is fair in general (Strongly Disagree (1) to Strongly Agree(5)).	ETSF411	3.2	4.0	5.0	1.0	1.0	95.0	32.1	10.2
High-income tax payers are subject to tax at higher tax rate than low income- earners (Strongly Disagree (1) to Strongly Agree(5)).	HIHTP412	2.6	2.0	5.0	1.0	1.0	94.0	36.2	10.2

Do you agree that tax payers including you may commit non-compliance as long as your noncompliance is consistent with in-group expectations and norms(Strongly Disagree (1) to Strongly Agree(5)).	NCNCG415	2.7	2.0	5.0	1.0	1.0	95.0	35.8	13.0
The noncompliance of other taxpayers has a negative impact on compliant tax payers' attitude(Strongly Disagree (1) to Strongly Agree(5)).	NCTPN416	3.3	4.0	5.0	1.0	1.0	94.0	29.5	10.9
4. Administration/ Institutional factors									
Tax laws are simple and clear(Strongly Disagree (1) to Strongly Agree(5)).	TLSC511	3.1	4.0	4.0	1.0	1.0	95.0	33.4	10.4
Misunderstanding regarding tax law are easily solvable (Strongly Disagree (1) to Strongly Agree(5)).	MTLES514	2.9	2.0	4.0	1.0	1.0	95.0	35.0	10.9
I have smooth communication and clarity with tax laws while discussing with tax officials(Strongly Disagree (1) to Strongly Agree(5)).	SCDTO515	3.5	4.0	5.0	2.0	0.9	95.0	26.9	12.6
The terms used in tax return forms are very simple and easy to understand (Strongly Disagree (1) to Strongly Agree(5)).	TTSEU516	3.0	3.0	4.0	1.0	0.9	94.0	29.8	8.9
Service delivery is good (Strongly Disagree (1) to Strongly Agree(5)).	SDG517	2.3	2.0	5.0	1.0	1.0	95.0	43.8	7.8
Tax collection efficiency is poor (Strongly Disagree (1) to Strongly Agree(5)).	TCEP518	2.6	2.0	4.0	1.0	0.9	94.0	35.5	9.2
Tax registration process is easy(Strongly Disagree (1) to Strongly Agree(5)).	TRPE519	3.3	3.5	4.0	1.0	0.8	94.0	25.5	9.8
Tax assessments is fairly applied (Strongly Disagree (1) to Strongly Agree(5)).	TAFA5110	2.1	2.0	5.0	1.0	1.0	95.0	46.6	13.5
5. Economic factors									
Current tax Assessment rate on your business income is high(Strongly Disagree (1) to Strongly Agree(5)).	CTARH61	3.5	4.0	5.0	1.0	1.0	95.0	28.1	8.9
If Assessment rate is high, tax payers take different actions to reduce tax liability they owe(Strongly Disagree (1) to Strongly Agree(5)).	AHTRDA612	2.6	2.0	5.0	1.0	0.9	95.0	34.6	18.5
Public expenditure of our country balanced with revenue collected in the form of tax (Strongly Disagree (1) to Strongly Agree(5)).	PEBTR614	3.7	4.0	5.0	1.0	0.8	90.0	21.2	41.8
If there is no penalty, there is possibility that I may not pay tax (Strongly Disagree (1) to Strongly Agree(5)) .	NPNT331	2.2	2.0	5.0	1.0	1.0	94.0	44.7	16.5
I feel that the penalty rate for not complying tax law is not strong than other penalties for other crimes(Strongly Disagree (1) to Strongly Agree(5)).	TLNS333	2.4	2.0	5.0	1.0	1.0	94.0	42.1	15.4
Do you have any personal financial constraints?(Yes=1,No=0)	PFCD34	0.5	0.5	1.0	0.0	0.5	92.0	100.5	15.3
Total expenditures +saving per year'000 birr	AESPY36	87.4	54	420	0.0	91	95.0	104.9	78.1
Average of your income per year'000 birr	AIPY711	101.3	72	360	0.0	93	66.0	91.8	28.7
6. Personal attitudes									
Tax liability is the responsibility of citizenship (Strongly Disagree (1) to Strongly Agree(5)).	TLRC71	4.1	4.0	5.0	1.0	0.7	95.0	16.4	695.2
I believe that, if tax assessment is too high, it possible inflate deductions from income tax (Strongly Disagree (1) to Strongly Agree(5)).	TAHPIDIT73	2.6	2.0	5.0	1.0	0.9	95.0	35.6	17.0
Not paying tax is wrong but some reasons that leads to this action (Strongly Disagree (1) to Strongly Agree(5)).	NPTR74	2.7	2.0	4.0	1.0	1.0	93.0	35.5	13.8
Not paying tax is wrong action(Strongly Disagree (1) to Strongly Agree(5)).	NPTRA75	4.0	4.0	5.0	1.0	0.6	95.0	14.0	676.5
Tax law should be respected(Strongly Disagree (1) to Strongly Agree(5)).	TLR77	3.9	4.0	5.0	1.0	0.5	95.0	13.5	866.2
How do you evaluate the affect ?(very low(1) to Very high(5)).	COVIDEAD710	4.4	5.0	5.0	0.0	1.1	95.0	24.6	292.1

Source : Computed based on the survey data(2021)

I) Descriptions of Dependent Variables

The description of the dependent variable was selected by considering ($\overline{x}$, and σ).The tax compliance level of tax payers computedbased on the mean values of category of low = 1.00 to 2.25; medium = 2.26 to 3.75 and high = 3.76-5 (Wolella (2016), Daba (2017), and Abdu(2019)). The mean value of theordered tax compliance/ VTCDE22/ is 2.8, suggesting that the tax compliance is medium, 52.6% of the total respondents put their values of the tax compliances as moderate and high values. It shows that the level of tax compliance is at border of normal, needs further works on the awareness byconsidering more influencing variables on the tax compliancesoftaxpayers.Wollela A. and Odd –H.(2016) indicated that there were significant compliances of businessmen towards taxpaying.

According to the sub city tax office, the total numbers of Category "C" tax payers /19,377/ is high compared to the sum of Category "A" and Category "B" /7,464/. However, its contribution to the estimated tax revenues of the sub city in 2012 EC was very low, estimated to be 1.8% of the total expenditure (proxy of income) of the sub city. On the other hand, the share of Category "C" from total tax revenues of the sub city in 2012 EC was small, 15.5%[3].

II) Descriptions of the Main Independent Variables/Factors

The descriptions of the major independent variables chosen in this section by considering ($\overline{x}$, σ , and CV%). Based on the responses to the statements in the questionnaire that range from 'strongly disagree' = 1 to 'strongly agree' = 5 or/and from 'very low value' =1 to 'very high value' = 5 ; see more in the table above. The mean values adjusted for the purpose of easily interpretations; 1 - 1.8= Strongly Disagree, 1.81 – 2.6 = Disagree, 2.61 – 3.4= Neutral, 3.41 – 4.20= Agree and 4.21 – 5 = Strongly Agree (Daba (2017), and Abdu(2019)).

1.Tax administration/institutional factors

The respondents agree that on smooth communication with tax officials ($\overline{x}$(σ) =3.5(0.9)), 72 % respondents agree and above.It needs further clarifications or awareness/trainings for tax payers. There is a smooth communication but still needs more improvements.

The respondents are neutral that on the issues of tax laws/rules/terms/ tax registration/ appropriateness of tax law enforcement / awareness creation/ understandings tax law/ are simple and clear/ understandable ($\overline{x}$(σ)found between 2.9(1) and 3.3(0.8)). The results showed that

[3] Computed by assuming conservatively that the total tax collection of the sub city from the total expenditure (proxy of income) of the sub city in 2012 EC was 11.6%, the nation tax revenue to GDP ratio of the 2011 EC.

most of the tax administration/institutional factors are indifference by the tax payers, 60% respondents agree. It needs furtherclarifications or awareness/trainingsfor tax payers.

The respondents disagree that on good service delivery,inefficiencytax collection , andfairtaxadministration (treat equally) ($\overline{x}(\sigma)\leq 2.6(0.9)$). The service delivery and fair tax administration are at poor status. However, the tax collection efficiency is significant though the tax payers complain on high tax assessment rates. Therefore, it needs the capacity buildings for tax officers and further researches on in house services including revisiting tax rates.

2. Social factors

The respondents disagreeonthat fair trainings/education given by the tax authority and high-income tax payers subject to high tax rate($\overline{x}$ $(\sigma)\leq 2.6(1.00)$). The majority respondents (87%) give low value for trainings/education given by tax offices, which may lead to non compliances. Awareness/training is mandatory for changing the tax payers' perceptions toward compliances so that the tax authority should be engaged in extensive trainings so as to change tax compliance behaviors. Similarly the respondents strongly believe that high-income tax payers do not subject to high tax rate,andremark to be given attention on high-income tax payers to raise the tax revenues rather than small tax payers.

The respondents are neutral on that of Ethiopian tax system is fair ,everyone pays fair tax share,organized tax payers leadtonon evading taxes ,tax payers influenced by their peer groupand the noncompliance has a negative impact on the compliant tax payers($\overline{x}(\sigma)$ found between 2.7(1) and 3.3(1)),68% respondents agree. These showed that the stated social factors are indifference by the tax payers. It indicates that further improvements expected from the tax office.

3. Economic factors

The average estimated expenditure (proxy of income)percapita of the sub city and sampled survey in 2012 EC were 33,401 birr and 24,980 birr , respectively.

The respondents agree that on high tax assessment rate ($\overline{x}(\sigma) = 3.5(1)$), 84.2% respondents agree. It shows that the respondents strongly oppose the existing tax assessment rates, suggest to be revised the assessment rates. The respondents agree that on public budget/expenditure balanced with the tax revenue ($\overline{x}(\sigma) = 3.7(0.9)$), 75.8% respondents agree. The majority believe that on public budget/expenditure balanced with the tax revenue.

The respondents disagree that on the high tax assessment rate may lead to take different actions to reduce it ($\overline{x}(\sigma) = 2.6(0.9)$), 66.4% respondents disagree. The respondents believe that

whatever tax assessment is high, the tax payers should respect the government law. However, it may need immediate solutions to protect from devastating situations.

The respondents disagree on that no penalty leads to no tax paying, tax penalty reduces tax evading, and tax penalty rate is lower than that of other crimes ($\overline{x}(\sigma)\leq 2.6(0.9)$). The respondents believe that on teaching/advises rather than penalty , strongly insist that the existing penalty rate is enough. Financial constraints($\overline{x}(\sigma)=0.5(0.5)$), 50% respondents say yes.The average annual tax penalty (14.3% oftotal tax revenue) has been increasing, in the past five years, on average, by 25.9%.

4. Personal attitudes

Respondents agree that tax liability is the responsibility of the citizenships , correct tax amount should be paid on time without enforcement, not paying tax is wrong action, not paying tax is wrong and punishable , and tax law should be respected($\overline{x}(\sigma)\geq 3.9(0.5)$), 94% respondents agree. They also neutral that on the possibility of deductions of the inflated ones from the high income tax assessment ($\overline{x}(\sigma)=2.7(0.5)$), . The respondents disagree onthat not paying tax is wrong but some reasons that lead to this action ($\overline{x}(\sigma) =2.6(1.00)$). In general, the respondents may have good personalities and seem willing to obey rules and regulations.

4.2.1.2 Econometrics Analyses

It ,here, consists of Panel Two-Stage Estimations of Generalized Least Square(PTSEGLS) , Robust OLS and Robust logit (binary and ordered).PTSEGLS solves the problems of multicolinarity, hetoscadicity ,simultaneity bias , endogenous problems, serial auto correlation(caused by lag dependent variables) and reverse causations especially in case of control or instrumental variables. Hausman Test, Chi-Sq. Sta.< Chi-Sq(prob) conducted, NoCorrelated Random Effects, ECM accepted(see section 3.5.2.1 and 3.5.2.2).

Robust models corrects the famous problems such as hetoscadicity ,multi collinearity , and serial correlation. The study use both Robust OLS and TSEGLS for estimating marginal and elasticity effects. On the other hand, Robust logit (binary and ordered) models used, here, to see the significant levels and relations of the results because of two reasons: (i) Eview computes the coefficients by considering weighted values to minimize the occurrence of hetroscadicity. The odds interpretations can be computed the percent change in the odds for a unit increase in the i^{th}regressors. By un weighting the weighted binary/ ordered logit , the marginal effects can be computed but it may lead to hetroscadicity(Gujarati,2004), and (ii) The study takes simply the

significant levels and directions of the results for interpretations for the study uses both robust OLS and TWS panel models to show the elasticity and marginal effects.

I) The Different Kinds of Econometrics Tests

Correlation matrix(>=0.7)/multicolinarity test/ , panel unit root(stationery test) [4] , cross-sectional dependence [5] , causality [6] ,co integration(long run test) [7] , hetroscadicity , coefficient , functional and other tests conducted. Walden tests for ordered logit are Wald Ch2 (16)=32.8(prob, 0.01) and Wald F-test=2.05(prob, 0.05), and Pseudo R-squared (0.53). Walden tests for binary logit(VTCD21) are Wald Ch2 (12)=370(prob, 0.00) and Wald F-test=30.9(prob, 0.00).

Table 4: Panel Unit Root Tests and Multicollinarity Indicators

Variables	**Phillips-Perron panel unit-root test(individual effect) (significance)**		**High Correlation (>=0.7)**
	Level,/I(0)/ (Significance)	**First level,/I(1)/ (Significance)**	
AAINF	65.0(0.00)*		Included in the panel model
LOG AAINF	65.5(0.00)*		"
DAKNOEXP		0.04(1.00)**	"
DLOGAKNOEXP		0.6(1.00)**	"
LOG_PENAL_	60.5(0.00)*		"
LOG_TXRV_	60.5(0.00)*		"
PENAL	54.7(0.00)*		"
TAXR	54.7(0.00)*		"
AKNOEXP	0.00(1.00)**		Excluded due to multicollinarty
LOGAKNOEXP	0.003(1.00)**		"
AAINV	7.8(0.98)**		"
DAAINV		3.8(1.00)**	"
LOGAAINV	2.6(1.00)**		"
DLOGAAINV		11.6(.87)**	"
AKREXP	5.2(0.99)**		"
LOGAKREEXP	14.6(0.69)**		"
POSTA	40(0.01)**		"
COV19	27(0.07)**		"

Source : Computed based on Collected Data(2013EC)
*Significant and **Insignificant

The above conducted tests confirm that the validity and reliability of the results. Thus, the final explanatory variables chosen for panel short run, robust OLS and robust logit (binary and ordered) estimates presented in the tables below.

[4] The study conducted Phillips-Perron panel unit-root test(individual effect) by considering asymptotic Chi-square distribution in the presence of individual cross-sectional dependence.

[5] The individual cross-sectional dependence tests (Pesaran CD) for all given variables were significant at 1%, detect the presence of cross-sectional dependence.

6 Granger causality test conducted in the robust OLS ,Logit, and Panel models, most of variables do not homogeneously cause to the others or the reverse, indifference each other. Income tax does not the homogenous cause to Income (proxy expenditures) (one direction, significant).

7Eview could not compute the test due to insufficient information (caused by differences) so that the estimates would be short runs.

II)Descriptions of Econometric Analyses

Table 5:Short Runs Panel Two-Stage EGLS[+] (Period random effects[++]) Outputs			
Dependent Variable: TXRV(Tax Revenue)		Dependent Variable: LOGTXRV(Tax Revenue)	
Independent Variables	Coefficients (Marginal Effects)	Independent Variables	Coefficients (Elasticity)
C	2339514	C	4.3*
DAKNOEXP	0.005***	DLOGAKNOEXP	5*
AAINF	73872	AAINF	0.008
PENAL	2.23***	LOGPENAL	0.36*
t-Statistic: Significant at 0.1*** , Significant at 0.05** and Significant at 0.01* + Panel Two-Stage Estimations of Generalized Least Square(EGLS) solves the problems of simultaneity bias , endogenous problems, serial auto correlation(caused by lag dependent variables) and reverse causations especially if the study used control or instrumental variables. ++ Hausman Test, Chi-Sq. Sta.< Chi-Sq(prob) ,No Correlated Random Effects, ECM , accepted			
Source : Own computation(2013EC)			

Table 6:Robust OLS Models[+]		
Dependent Variables (Tax Paid in 2012EC, 15PRT23)	**Linear Model**	**Log Model**
Independent Variables	**Coefficients(Marginal Effects)**	**Coefficients (Elasticity)**
GE11	1788.8**	0.34
AG12	45.16	0.01
MS13	-1127	-0.53**
FS14	-439.8**	-0.18*
ED15	-77.8	-0.02
BHR162	-1844.8	-0.53
BT163	-1291	-0.55
TED31	-779.4	0.01
NPNT33	2.7	-0.05
TLNS333	191.6	0.06
PFCD34	276.8	0.00
AESPY36	0.008**	0.42*
ETSF411	896.4**	0.16
CITSFS413	110.2	0.05
NCNCG415	-70.2	-0.01
TLSC511	301.4	-0.03
MTLES514	6.6	-0.07
SCDTO515	-1082.9*	-0.17
TTSEU516	56.8	0.10
SDG517	-808.2***	-0.17
TCEP518	415.4	0.13
TRPE519	904.4**	0.37*
TAFA5110	1301.2*	0.44*
TAFTT5112	806.3	0.17
CTARH61	297.5	0.21*
AHTRDA612	-543.1	0.02
GISMCIT615	-325	-0.14
TLRC71	1854.8*	0.31
TAHPIDIT73	-943.2**	-0.15
NPTR74	1028*	0.20
NPTRA75	-811.6	0.00
TLR77	-2613.8*	-0.30
COVIDEAD710	877.9*	0.30*
z-Statistic: Significant at 0.1*** , Significant at 0.05** and Significant at 0.01* + Eview computed using MM-estimation, it addresses the outliers in both the dependent and independent variables, corrects hetroscadicity.		
Source : Own computation(2013EC)		

Table 7: Robust Binary and Ordered Logit Models[+]

	Robust Binary Model(Logit)[++]				Robust Ordered Logit Model	
	VTCD21(For Tax Compliant(Yes =1, No=0)	VTCDE221(No Tax Compliant=1,Other wise=0)	VTCDE223(Low Value for Tax Compliant=1,Other wise=0)	VTCDE224(Moderate Value for Tax Compliant=1,Otherwise =0)	VTCDE22(For Tax Compliant Very Low value=1,Low value=2,Moderate Value=3,High Value=4 and Very High Value =5)	
Variables	Coefficients				Variables	Coefficients
GE11	8.25***	-6.4***	-0.92	8.69*	GE11	-0.77
AG12	0.05	-0.01	-0.08	0.026	AG12	-0.10***
MS13	-1.79	1.23	-5.93*	5.23**	MS13	2.81**
FS14	-1.72	1.15	1.8*	-2.41**	FS14	-0.66***
ED15	-0.09	0.03	-0.15	0.28	ED15	-0.47***
BT161	-28.81	27.6***	-0.87	-25.15	TED31	1.11
BHR162	-38.08	35.49*	-0.81	-30.31	NPNT33	-0.32
BT163	-34.28	31.77***	5.36	-32.60	TLNS333	0.89**
BA164	-30.69	29.24***	3.11	-28.77	PFCD34	-0.79
YOB17	0.51***	-0.20	0.30	0.003	AESPY36	0.00
PRT23	-0.0004	0.0002	-0.0009*	0.0003	ETSF411	1.20**
TED31	9.67*	-6.81*	0.47	6.18	OTPEV414	0.64
NPNT33	-0.75	0.53	-1.22*	1.035***	NCNCG415	-0.34
TLNS333	2.17	-2.6**	1.48	1.004	SCDTO515	0.35
PFCD34	-1.52*	1.37***	2.04*	-4.62**	TTSEU516	-1.09***
AESPY36	0.0001	-00001	0.0001	0.0001	SDG517	-0.77
ETSF411	0.03	-0.18	-1.77*	0.52	TCEP518	-0.87
HIHTP412	3.81*	-2.58*	-0.65	2.50**	AHTRDA612	1.67**
CITSFS413	-0.42	0.63	0.27	-0.023	PEBTR614	2.63*
OTPEV414	0.99	-1.20	-0.77	1.27	GISMCIT615	-0.24
NCNCG415	-0.87	1.13	1.33	-2.95**	TLRC71	2.12*
NCTPN416	-3.23*	2.70*	0.0002	-3.73*	TAHPIDIT73	-1.78*
TLSC511	-2.45*	2.47*	0.065	-1.94*	NPTR74	0.60
MTLES514	1.78	-1.57	1.47*	0.29	NPTRA75	-2.50*
SCDTO515	1.69**	-1.70*	-1.06	2.25	NPTRAP76	-1.25
TTSEU516	0.2	-0.37	2.56*	-1.29***	TLR77	1.90
SDG517	-2.85	2.57	-1.76	-1.67	PRNCTLNS78	0.34
TCEP518	2.09	-0.94***	0.79	-0.026	COVIDEAD710	-0.96**
TRPE519	3.08*	-2.41*	2.46*	0.57		
TAFA5110	0.58	-0.16	2.39*	-1.93**		
TLEA5111	0.46	-0.5	0.09	-0.23		
TAFTT5112	2.27	-1.92	-0.46	2.06		
CTARH61	0.34	-0.25	1.40	1.064		
AHTRDA612	-0.44	-0.14	-0.24	1.64		
GEAUTR613	-1.46	1.28***	-0.43	-0.008		
PEBTR614	2.52	-2.64**	1.10	2.88**		
GISMCIT615	0.15	-0.01	-0.31	0.31		
TLRC71	-1.24	1.36	-0.71	-0.55		
TAHPIDIT73	0.37	-0.65	2.55*	-1.11		
NPTR74	-2.73***	2.11***	-0.64	-2.34		
NPTRA75	1.23	-0.58	-2.75***	1.01		
TLR77	6.03**	-5.11**	-1.67	5.6***		
PRNCTLNS78	-0.87	-0.09	-3.83*	1.72		
COVIDEAD710	-1.00	0.72	0.38	-1.89		
AIPY711	0.000	0.00	-0.0003*	-0.0005		

+ Eview computed by considering weighted values to minimize the occurrence of hetroscadicity. The study takes simply the significant levels and relations of the results for interpretations since the study uses robust OLS and Tow Stage panel models to show the elasticity and marginal effects.

++ Eview could not compute due to insufficient number of observations so that strongly low , high and very high values are excluded.

Z-Statistic(t distribution converges to the normal distribution): Significant at 0.1*** , Significant at 0.05** and Significant at 0.01*.

Walden tests for ordered logit are Wald Ch2 (16)=32.8(prob, 0.01) and Wald F-test=2.05(prob, 0.05), and Pseudo R-squared (0.53). Walden tests for binary logit(VTCD21) are Wald Ch2 (12)=370(prob, 0.00) and Wald F-test=30.9(prob, 0.00).

II) Descriptions of Econometric Analyses

The study chooses the significant variables for illustrations, at least significant at 5%. The first two models(panel short run and robust OLS)explain their significant, relations and magnitudes where as the Robust logit models (binary and ordered) show their significant and relations.

1.Tax administration/institutional factors

Smooth communication and clarity with tax officials (SCDTO515)

The robust OLS model explains that respondents' smooth communication and clarity with tax officials (SCDTO515) have a negative and significant impact on the actual paid tax (15PRT23) . This means a unit increase in smooth communication and clarity with tax official causes to decrease the actual paid tax by 1083 birr, the more communications, the more actual tax reduction occur. This may be most of tax payers consult the tax officials when they encounter high tax estimation.

Binary(VTCD21) Logit shows that respondents' smooth communication and clarity with tax officials(SCDTO515) have a statistically significant positive impact on the compliance of tax payers, 76.7% of the respondents agreed.

By both models, effective smooth communication/clarity with tax officials has significant impacts on tax compliances, and should improve more the relation with tax offices such as revisiting the assessed /imposed taxes and others.

Simple and clear tax law(TLSC511)

Both Binary(VTCD21) and Moderate Value(VTCDE224)Logit Models indicate that simple and clear tax law(TLSC511) has a statistically significant negative impact on the compliance of tax payers. The dominant respondents (64%) agreed on the clarity/simple; however, the results showed that either they do not want to obey the laws or the laws are not clear as they said. So they need more awareness/trainings to improve the compliances of tax payers. On the contrary, Abdu Mohammed A. and Wondimu S.(2019) and Netsanet S. and Biniam T.(2020) indicated that tax compliances significantly (positive) affected by tax simplicity of the system.

Misunderstanding regarding tax law are easily solvable(MTLES514)

Low Value Logit(VTCDE223) explains that misunderstanding regarding tax law are easily solvable(MTLES514) hasa statistically significant positive impact on low value compliance of tax

payers. Majority (60%) of the respondents disagreed on the statement; however, majority of low taxcompliance (in value) found in the remaining agreed, the same illustrations as of the above.

Tax return forms are very simple and easy to understand (TTSEU516)

Low Value Logit(VTCDE223) explains the terms used in tax return forms are very simple and easy to understand (TTSEU516) has a statistically significant positive impact on the low compliance of tax payers ie either they do not want to obey the laws or the laws are not are very simple/easy as they said. So they need more awareness/trainings.

Easy tax registration process (TRPE519

The robust OLS model explains that easy tax registration process (TRPE519) has a statistically significant positive impact, marginal(904.4) and elasticity(0.37), on the actual paid tax (15PRT23). This means a unit and a 10 percent increase in the easy tax registration process cause to increase the actual paid tax (15PRT23) by 904.4birr and 3.7% respectively, the more easy tax registration process, the more the actual paid tax. Both Binary(VTCD21) and Low Value(VTCDE223)Logit Models indicate that easy tax registration process (TRPE519) has statistically significant positive impacts on the compliance and the low value of compliance of tax payers. The dominant respondents (77%) agreed that on the easy tax registration process; however, the result of Low Value showsthat either they do not want to obey the laws or the laws are not clear as they said. So they need more awareness/trainings.

Fair tax assessment (TAFA5110)

The robust OLS model explains that fair tax assessment (TAFA5110) hasa statistically significant positive impact , marginal(1301.2) and elasticity(0.44), on the actual paid tax (15PRT23). This means a unit and a 10 percent increase in the fair tax assessment cause to increase the actual paid tax (15PRT23) by 1301.2 birr and 4.4% respectively, the more fair tax assessment,the more the actual paid tax.

Moderate Value(VTCDE224) and Low Value(VTCDE223) Models indicate that fair tax assessments (TAFA5110) have statistically significant positive and negative impacts on the low and moderate compliances of tax payers, respectively. The dominant total respondents (79%) disagree on the fair tax assessment applied by the government. Therefore, for moderatevalue,government should do such as in-house capacity buildings, revisit the assessment manuals and control corruption. Similarly, Abera(2019) indicated that the presumptive of income tax collections had significant relations with the equity and fairness of the tax system.

2. Social factors

Educations/trainings by the tax authority for tax payers (TED31)

Binary(VTCD21)Logit indicates that participating on educations/trainings/awareness given by the tax authority for tax payers (TED31) has a statistically significant positive impact on the compliance of tax payers. However, 80% of the respondents do not participate on any trainings/educations. Wollela A. and Odd –H.(2016),Abdu Mohammed A. and Wondimu S.(2019)and Netsanet S. and Biniam T.(2020) explained that education/training/awareness were statistically significant in explaining tax compliances.

Ethiopian tax system is fair (ETSF411)

The Low Value Logit (VTCDE223) explains that the Ethiopian tax system is fair (ETSF411) has a statistically significant negativeimpact on the low compliance of tax payers, the more fair tax system aggravates low compliance of tax payers. Low Value shows that either they do not want to work with the system or the system is not clear as they said. So they need more awareness/trainings.Ayele et al.(2017) concluded that in general the tax system is hardly understandable to the taxpayers.

High-income tax payers are subject to higher tax rate (HIHTP412)

Both Binary(VTCD21) and Moderate Value(VTCDE224)Logit Models indicate that high-income tax payers are subject to higher tax rate (HIHTP412) has statistically significant positive impacts on both compliance and moderate compliance of tax payers. In short, the more high-income tax payers are subject to higher tax rate, the more compliance of tax payers.

Peer non-compliance group

Moderate Value(VTCDE224)indicates that peer non-compliance group may cause the noncompliance of other tax payers (NCNCG415) has a negative significant impact on the moderate compliance of tax payers. The more peer non compliance group, the lesscomplianceoftax payers.Daba(2018) result, referent group, also consistent with the study finding.

Negative impact of noncompliance on the compliant tax payers' attitudes (NCTPN416)

Both Binary(VTCD21) and Moderate Value indicate that the negative impact of noncompliance on the compliant tax payers' attitudes (NCTPN416)have statistically significant negative impacts

on the compliance and the moderate compliance of tax payers, 68% of the respondents agreed on the negative impact.

3. Economic factors

The short run TSLS panel econometric result shows that annual expenditure (income proxy) has asignificantelastic(5) impact on thetax revenue ie a 10 percent increment in annual expenditure (income proxy) causes to increase the annual tax revenue by 50%. This indicates that the Category "C" tax payers, as to the theory of tax elasticity, on average, tax rate is more than that of their incomes' growing rate in the 2009-2012 EC. Thus,most of the respondents disagree for the inefficiency tax collection (60%) , fair tax assessment applied (79%) ; and 87.4% of the respondents agree on high current tax assessment rate. However, the robust OLS result indicates that theannual expenditure (income proxy)/ AESPY36/ has a statistically significant positive impact on the paid tax /15PRT23/ ,marginal(0.008) and 0.42(inelastic). A 1000 birr and 10 percent increment in annual expenditure (income proxy) cause to increase the annual tax to be paid by 8 birr and 4.2%, respectively. This indicates that, in 2012 EC, the current tax rate is 4.2% where as the growth rate of their income is 10% ie the paid tax rate, as to the tax elasticity theory, is below their existing income growth rate. This understated result may be due to the respondents told their household expenditures rather than business expenditures (proxy of turnovers).

Current tax assessment rate is high (CTARH61)

The robust OLS model explains that current tax assessment rate is high (CTARH61) hasa statistically significant positive impact , elasticity(0.21), on the actual paid tax (15PRT23). This means a unit increases in the current tax assessment rate is high causes to increase the actual paid tax (15PRT23) by 0.21%, the more high tax rate , the more the actual paid tax that may lead to significant complains. In such case, the government should do such as in-house capacity buildings and revisiting the assessment manuals.

If the assessment rate is high, tax payers may take different actions to reduce (AHTRDA612)

The ordered logit indicates that the view of if the assessment rate is high, tax payers may take different actions to reduce (AHTRDA612) has a statistically significant positive impact on the tax compliance ie the action may be discussing with the tax officials since 66.3% of the respondents disagreed on its own actions and 76.7% of the respondents prefer to smooth communication with the tax officials.

Sectors

The robust binary and ordered logits indicate that all sectors (small trading, house renting, transport and advertisement) except house renting have insignificant impact on the compliances of tax payer and actually tax collected. The nonvaluelogit indicates that house renting has a statistically significant positive impact on none tax compliances. The more house renting business, themorenoncompliances of tax payer.

Public expenditure of our country balanced with the revenue collected in the form of tax

The None Value Logit (VTCDE221) explains that the public expenditure of our country balanced with the revenue collected in the form of tax (PEBTR614) has a statistically significant negative impact on the none compliance tax payers, the more balanced public expenditure with revenue aggravates none compliance tax payers. Tadesse&Goitom (2014) indicated that it has insignificant impact on tax compliance.

Tax penalty is lower than that of other crimes (TLNS333)

The ordered logit indicates that the view of tax penalty is lower than that of other crimes (TLNS333) hasa statistically significant positive impact on the tax compliance , the better agree, the better tax compliances. It has also a statistically significant negative impact on the none value for the tax compliance (non valueLogit), the lower agree, the higher non tax compliance.Wollela A. and Odd H.(2016) showed that punishments are statistically significant in explaining tax compliances.

No penalty may lead to no tax payment (NPNT331)

The short run panel output also indicates the elasticity of the penalty up on the tax revenue is 0.36 ie a percent increment in the penalty causes to increase the annual tax revenue by 0.36%. The binary logit indicates that no penalty may lead to no tax payment (NPNT331) has positive and significant impact on the tax compliances, the better agree, the better tax compliances. In general, the above findings indicate that tax penalty has its own role inraising the tax revenue and in reducing thenon tax compliance. Dinku&Alamirew(2018) and Mesele(2018) showed that

the level of voluntary tax compliance was significantly related with tax investigation and penalty.

Personal financial constraints (PFCD34)

Both Binary(VTCD21) and Low Value(VTCDE223)Logit Models indicate that personal financial constraints (PFCD34) have significant negative and positive impacts on the compliance and low compliance of tax payers in their corresponding order. In short, the more financial constraints, the lesser tax complaints or the more low compliance tax payers. Netsanet S. and Biniam T.(2020) , Daba(2019)andMesele(2018) results, financial constraints, also consistent with this study.

4. Personal attitudes

Tax liability is the responsibility of citizenship

The robust OLS model explains that tax liability is the responsibility of citizenship(TLRC71) has a statistically significant positive impact , marginal effect (1854.8 birr), on the actual paid tax (15PRT23). This means a unit increases in the citizen tax liability causes to increase the actual paid tax (15PRT23) by 1854.8 birr.

The ordered logit indicates that the view of tax liability is the responsibility of citizenship (TLRC71) has a positive and significant impact on the tax complaints, 96.8% of the respondents agreed.

If the tax assessment is too high, it is possible deduction of inflated from the income tax (TAHPIDIT73)

The OLS model explains that if tax assessment is too high, it is possible inflate deductions from the income tax has a negative and significant impact, marginal effect (943.2 birr), on the actual paid tax (15PRT23). This means a unit increases in the if tax assessment is too high, it is possible the inflated to be deducted from the income tax causes to decrease the actual paid tax (15PRT23) by 943.2 birr.

The ordered and Low Value Logit indicate that the view of if the tax assessment is too high, it is possible deduction of inflated from the income tax (TAHPIDIT73) has a negative and positive significant impacts on the tax compliance and low tax compliance respectively ie in the case of

ordered logit model, majority of tax compliances (67.4% respondents disagree) do not trust on the government to be deducted the inflated ones,the reason is similar to stated in the OLS. The low value compliance may believe that to be deducted the inflated ones by discussing with the concerned body.

Not paying tax is wrong but some reasons that leads to this action (NPTR74)

The OLS model explains that not paying tax is wrong but some reasons that leads to this action (NPTR74) has a statistically significant positive impact, marginal effect (1028 birr), on the actual paid tax (15PRT23). This means a unit increases in the not paying tax is wrong but some reasons that leads to this action causes to increasethe actual paid tax (15PRT23) by 1028 birr.

Respecting the tax law

The OLS model explains that respecting the tax law has a negative and significant impact, marginal effect (2613.8 birr),on the actual paid tax (15PRT23). This means a unit increases in the respecting tax law causes to decrease the actual paid tax (15PRT23) by 2613.8 birr. The respondents (93.7%) agreed on respecting tax law; however, actually less role in paying tax.

On the contrary, Binary(VTCD21)Logit indicates that respecting tax law (TLR77) has a positive and significant impact on the compliance of tax payers ie the more agree on respecting tax law, the more compliance tax payers.

COVID19 impacts

The OLS model explains that COVID19 as a positive and significant impact, marginal effect (877.9 birr), on the actual paid tax (15PRT23). This means a unit increases in the COVID19 impacts causes to increase the actual paid tax (15PRT23) by 877.9 birr. The higher the affected tax payers (90% of the respondents), the higher tax payment, this is may be the deduction/exempted taxes due to COVID19 has similar pattern for all tax payers. On the contrary, Ordered Logit indicates that the COVID19 has a negative and significant impact on the compliance tax payers ie the more agree on the negative impact, the less compliance tax payers.

5. Demographic and related factors

Gender (male)

The OLS model explains that gender(male) has a positive and significant impact , marginal effect (1788.9 birr), on the actual paid tax (15PRT23). This means a unit increase in gender value causes to increase the actual paid tax (15PRT23) by 1788.9 birr since most of the respondents, business men, are male.Both ordered and moderate logit indicate that gender haspositive and significant impacts on the tax compliances. On contrary, Tadesse&Goitom (2014) and Wollela A. and Odd H.(2016) indicated that female are more compliant.

Marital status

The marital status, OLS , has a negative and significant impact (elasticity,-0.53) on the actual paid tax (15PRT23) ie a unit increase in marital status causes to decrease the actual paid tax (15PRT23) by 0.53%, the more married(may be due to financial constraint) , the less the actual paid tax.Both ordered and moderate logit indicate thatmarital status has positive and significant impacts on the tax compliances.

Family size (FS14)

The OLS model explains that family size (FS14) have a negative and significant impact, marginal(439.8 birr) and elasticity(0.18), on the actual paid tax (15PRT23). This means a unit increase in the family sizes cause to decrease the actual paid tax (15PRT23) by 439.8 birr and 0.18% respectively , the more family size(may be due to financial constraint) , the less the actual paid tax

Moderate and low value logit indicate that family sizes have negative and positive significant impacts on moderate and low tax compliances, respectively. The higher family size ,the more financial consternates that lead to the low tax compliances in general. .

4.2.3 Qualitative Analyses

The major findings of key informants' discussions presented as follows:-

- There are significant number of the tax payers complain on the poor services (unfair tax assessment (unfair tax shares), significant corruptions, high tax rate and others) , eroded their trust on tax offices/officers. On the other hand, the tax payers appreciate the computerized systems, dissemination of information using flying papers, and banners/announces for reminding the date of taxpaying.
- Most of the tax payers respect tax laws and rules; however, no recognition forwarded from the tax office even no one says thanks.

- Most of the tax payers say that we paid tax but the government nothing do or unfair government spending for instance no street light, no market facilities including sheds,as the third huge open market next to Merkato and Kolfe in terms of total collected tax revenue.No training and technical supports such as developing business plan, feasibility study and financial recording. No access to credit services, and market facilities, and
- We small business pay our maximum taxes , the tax office would rather to focus on better tax payers categories(Category "A" and "B") and new tax payers.

CHAPTER V: SMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter winds up of the research works with summary of the findings, conclusion and recommendations.

5.1 Summary of the Findings

The role of the income(proxy of expenditures) growth for efficient tax collection is very significant. The majority of the respondents, 52.6%, on average, put the tax payers as moderate and high compliances of tax payers. The dominant factors of economic,social, institutional/ administration and demographic factors have significant and positive impacts on the compliances of tax payers /income tax. Personal financial constraint, peer non-compliance, Covid19 and family size have significant negative impacts. All sectors including small trading, house renting, transport and advertisement would have insignificant impact. Poor services (unfair tax assessment (unfair tax shares) , significant corruptions, high tax rate and others) , weak trust on tax offices/officers, no recognition of the small tax payers by the government, and no training and technical supports(focus only tax revenue) are also forwarded to be improved.

5.2 Conclusion

Category “C” consists of the majority of taxpayers though their contribution to the tax revenue of thesub city is very low, 15.5%.The averages of binary and ordered values of tax compliances are 0.7 and 2.8, respectively. Both of the tax compliance measures are above average, 52.6% of the respondents put as moderate and high values of tax compliances.

Economic factors such as a significant tax collection efficiency observed in the sub city Category “C” tax payers though significant complains. The short run panel estimate indicates that the tax elasticity of income is 5(elastic) ie a 10 percent increase in the expenditure (income proxy) causes to increase the tax revenue by 50%.

High tax assessment rate has a significant positive impact on the actual paid tax , may lead to significant complains. In such case, the government should do such as in-house capacity buildings and revisiting the assessment manuals. Almost all sectors (small trading, house renting, transport and advertisement) would have insignificant impact on the compliances of tax payer and actually tax collected. The public expenditure balanced with the tax revenue hasasignificant

negative impact on the none compliance of tax payers. No penalty may lead to no tax payment has positive and significant impact on the tax compliances, the better agree on, the better tax compliances. Personal financial constraint has a significant negative impact on the compliance of tax payers.

Of administration or institutional factors simple and clear tax law has a significant negative impact on the compliances of tax payers. This is due to either they do not want to obey the laws or the laws are not clear as they said. Effective smooth communication/clarity with tax officials has significant positive impacts on tax compliances and in revisiting the assessed /imposed taxes. Easy tax registration process has a significant positive impact on both the actual paid tax and compliance of tax payers. Fair tax assessments have significant positive and negative impacts on the actual paid tax and moderate compliance of tax payers. To resolve the negative impact, government expected to conduct in-house capacity buildings, revisit the assessment manuals and control corruption.

Of social factors, education/training by the tax authority has a significant positive impact on the compliance of tax payers. High-income tax payers are subject to higher tax rate has a significant positive impact on the compliance of tax payers. The negative impact of noncompliance on the compliant tax payers' attitudes has a significant negative impact on the compliance of tax payers.

Personal attitudes such as tax liabilities are the responsibilities of the citizens have significant positive impacts on the compliance of tax payers and actual paid tax. Respecting tax law has a positive and significant impact on the compliance of tax payers.

Gender and marital status have positive and significant impacts on the tax compliances. Family size and Covid 19 have negative and significant impact on the tax compliances/income tax.

The qualitative findings also indicate that poor administrative services (unfair tax assessment (unfair tax shares) , significant corruptions, high tax rate and others) , weak trust on tax offices/officers, no recognition by government, and no training and technical supports(focus only tax revenue) mentioned as major problems.

5,3 Recommendations

The study recommends the following basic issues:-

- The sub city administration/government together with taxpayersshould update the tax assessment rate on scientific research base,
- The tax offices focus, for short run, on new tax payers and the higher category groups as the existing category "C" tax payers have been paying at their maximum,
- The government should acknowledge the category "C" tax payers as of the higher tax groups,
- Awareness/ trainings should be given for the tax payers such as updating tax law, systems and others based on the need assessment,
- Part of the collected taxes are advisable to be re invested on basic open market(majority tax payers use it) infrastructures and others, and
- The tax office should focus on in house capacity building, revising the tax assessment manual and peer control corruptions so as to reduce the significant complains by tax payers.

References

Abera, A., (2019). Factors Affecting Presumptive Tax Collection in Ethiopia: Evidence From Category "C" Taxpayers in BahirDar City, Journal of Tax Administration Vo.15:2 2019.

Abdu,M. &Won,S. (2019). Analysis of Tax Compliance and Its Determinants: Evidence From Kaffa, Bench Maji and Sheka Zones Category B Tax Payers, SNNPR, Ethiopia

Addison, T. et al (2011). The determinants of tax revenue in sub-Saharan Africa. Journal of International Development.

Alabede, J. et al (2011). Tax Service Quality and Compliance Behavior in Nigeria: Do Tax Payers Financial Condition and Risk Preference Play Any Moderating Role.

ALPHA-UCODS Alpha University College of Distance Studies: Introduction to Tax Accounting Book note,pp 28-36.

Andreon ,J. et al (1998). Tax Compliance: Journal of Economic Literature, Vol.36.

Ayele, B. et al (2017). Effectiveness on Tax Assessment and Collection Practice of Category "C" Taxpayers: The Case of HalabaCity Administration: International Journal of Research in Management, Science and Technology.

BayuTadele (2015). Analysis of Tax Buoyancy and Its Determinants in Ethiopia (Co-integration Approach). Journal of Economics and Sustainable Development. ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online) Vol.6, No.3, 2015

Bird, R. and P, Gondr(2005). VAT Revisited: A New Look at the Value Added Tax in Developing and Transitional Countries, Paper Presented at the USAID Workshop for Practitioner on Tax.

Bijiga, G.(2020). Factors Affecting Perception of Taxpayers Towards the Seriousness of tax Evasion in Bale Robe Town Administration Oromiya, ,Ethiopia. International Journal of Finance and Accounting 2020, 9(2): 21-30.

Botlhole, T. D. (2010). Tax Effort and The Determinants of Tax Ratio in Sub-Sahara Africa. In International Conference on Applied Economics–ICOAE.

CTPA OECD (2001). Center for Tax Policy And Administration: OECD,GAP001, Principle of Good Tax Administration Practice not. Issued: 25 June 1999,Amended: 2 May, 2001.

Chris(2008). Econometrics Brooks 2008.

Daniel, M. ,andShaik, A. (2017). Factors Affecting Voluntary Compliance of Category "C" Tax Payers Attitude of Arbaminch, SNNPR, Ethiopia : International Journal of Scientific and Research Publications, Volume 7, Issue 6, June 2017 ISSN 2250-3153.

Daba, G. (2017). Factors Affecting Rental Income Tax Payers Compliance with Tax System: In Case of Hawassa City Administration, SNNPRS, Ethiopia. Research Journal of Finance and Accounting. Vol.8, No.7.

D'Arcy, M. (2011). Why do Citizens Assent to Pay Tax? Legitimacy, Taxation, and the African State, Afrobarometer ,Working Paper No. 126.

Dejen, M. et al (2014). Evaluation of Ethiopian Tax Administration System: Emphasis on Taxpayer Compliance, JBAS Vol.6 No. 2 December201446

Dinku,T.,and,A. (2018). External Factor Affecting Voluntary Tax Compliance: The Case of Amhara National Regional State Revenue Authorities. Journal of Business and Financial Affairs.

Ebeke, C. and H, Her. (2011). Tax Revenue Instability in Sub-Saharan Africa: Consequences and Remedies, Journal of African Economies, doi: 10.1093/jae/ejr026.

(ECSU, 2017) Ethiopia Civil Serves University Manual.

Emrata ,A. (2010). The Underground Economic and Tax Evasion in Ethiopia Economic Association**.**

Eric ,M. Zolt(2008). Public Finance for Poverty Reduction: Concepts and Case Studies from Africa and Latin America, International Bank for Reconstruction and Development/ World Bank/, Washington, DC, USA.

E View ,10(2015). Econometrics Software.

FDRE(2002). Value Added tax Proclamation no.285/2002,AddisAbaba, Ethiopia NegaritGazetta.

FDRE(2002). Income Tax Regulation 78/2002, FDRE: Addis Ababa, BSPE. NegaritGazetta.

FDRE(2016). Income Tax proclamation no.979/2016,AddisAbaba, Ethiopia: NegaritGazetta.

Fjeldsta., O-H.et al (2012). People's Views of Taxation in Africa: A Review of Research on Determinants of Tax Compliance, ICTD Working Paper 8, Brighton: International Centre for Tax And Development.

Gambela,BoFED (2008). GambelaPeople'sRegional State Bureau of Finance and Economic Development. Socioeconomic Survey Report.

Grandcolas, C.(2005). The Occasional Failure in VAT implementation: Lessons For The Pacific. Accessed. http://www.adb.org/documents/events/2004/fourtinth Tax Conference/text-grandcolas.pdf.

Gujarati, D. (2004). Basic Econometrics. Fourth Edition. McGraw-Hill Companies.

Habtamu, D. et al (2015). Challenges of Value Added Tax Administration: The Case of East Wollega. Vo 1.6,No 2,2015.

Jack.,B. and Milli, V. (1986). Tax Compliance Research : Findings Problem and Prospects, Journal of Accounting Literature Volume 5,Pp.125-165.

James, and Abiola(2012). Impact of Tax Administration on Government Revenue in a Developing Economy: ACase Study of Nigeria: Business School De Montfort University Department of Accounting and Finance Leicester, UK International Journal of Business and Social Science Vol. 3 No. 8 .

Jants,M. . et al (1990). Administering the VAT' in M. Gillis, C.S. shoup and G.P. Sicat (eds) Value Added Taxation in Developing Countries, World bank, Washington DC.

Kirchler, E. (2007). The Economic Psychology of Tax Behavior.

Lemessa, B. (2005). Federal Income Tax Administration in Ethiopia: The Case of Employment and Business Income Taxes, Msc Thesis, Addis Ababa University.

Loo, E.(2006). The Influence of The Introduction of Self Assessment on Compliance Behavior of Individual Tax Payers in Malaysia, PHD Thesis, University of Sydney.

Manchilot, T. (2018). Economic and Social Factors Of Voluntary Tax Compliance: Evidence fromBahir Dar city: International Journal of Accounting Research , volume 6.issue 2, 182.

Mesele, K. (2018). Determinants of Taxpayers' Voluntary Compliance with Taxation: The Case of WolaitaSodo and Tercha Town in Dawuro Zone, Volume 18 Issue 3 version 1.0 (2018).

MC Barnett, D. (2003). From Changes in Law to Change in Attitude : In V. Braithwaite Tax Democracy : Understanding Tax Avoidance and Evasion, Alder Short Ashgate Publishing Ltd.

Mikesell, L. (2007). Developing Options for the Administration of Local Taxes: An International Review: Public Budgeting and Finance 27(1): 41–68

M. Moses Antony R. (2016) Tax and Public Finance: Ethiopian System for Promotional Activities. ECOFORUM Volume 5.

Mulualem E.(2017). Analysis of Tax System Productivity in Ethiopia: An Econometric Approach ,www.nbe.gov.et.

Netsanet. andBin.T(2020). Determinants of Voluntary Tax Compliance (The Case Category A and B Taxpayers in Dire Dawa Administration), International Journal of Scientific and Research Publications, Volume 10, Issue 6, June 2020 982 ISSN 2250-3153.

Palil, M , (2010). Tax Knowledge and Tax Compliance Determinants in Self Assessment System in Malaysia: A Thesis Submitted To The University of Birmingham for The Degree of Philosophy, The University of Birmingham.

Tadesse, & G., A. (2014). Factors Influencing Taxpayers' Compliance with The Tax System: An Empirical Study In Mekelle City, Ethiopia. E. journal of Tax Research, 12(2), 433–452.

Taklu, K, (2011). Challenge of tax administration in Arada sub- city of Addis Ababa city Administration: Unpublished Thesis: Addis Ababa university.

UNDP Ethiopia(2016). Performance and Prospects of Tax Collection In Ethiopia:

WollelaA(2008). Value Added Tax Administration in Ethiopia: A Reflection of Problems:

Wollela A. and .H.(2016). Business people's views of paying taxes in Ethiopia. ICTD. Working Paper 43 , 2016.

Annex1: Questionnaire for Tax Administration Practice

Addis AbebaUniversityCollage of Graduate Studies
Department of Accounting and Finance
MSC program

Questionnaire for FACTORS AFFECTING TAX COMPLIANCE OF CATEGORY ' C ' TAXPAYERS, THE CASE OF AKAKE KALITY SUB CITY.

Dear respondents

This study is conducted in partial fulfillment of the requirements for the MSc Degree. I am carrying out a study on the **FACTORS AFFECTING TAX COMPLIANCE OF CATEGORY ' C ' TAXPAYERS, THE CASE OF AKAKE KALITY SUB CITY.** The purpose of this questionnaire is to obtain your perceptions and views regarding the existing Tax administrative activities of the Sub City and its main constraints against effective tax administration. This study will help the Sub City to identify its problems and improve its Tax administration.

The information you will give will enable me to critically analyze the subject matter. Therefore, please answer all questions.

Confidentiality

I hereby assure you that all information obtained through this questionnaire shall be used for academic purposes only and will be handled and stored with the highest order of confidentiality. Please do not write your name anywhere on the questionnaire(Teklu, 2011).

Data collector's name----------

Thank you in a advance your cooperation!!

Part - One: demographic information of tax payers:

1. Gender:

    1. M 2. F

2. Age: --------

3. Marital status

    1. Single 2. Married

4. Educational status: ----------

5. Type of business:

    1. Merchandise 2. Rent 3. Transport 4. Printing & Advertisement

6. For how many years you are in this business----------

Part – Two: Tax Administration/Compliances (Dependent Variables)

1. Do you believe that there is a voluntary tax compliance or the presumptive tax collection in the Sub city?

    1. Yes 2. No

2. If "yes " for Q1, how do you evaluate the voluntary tax compliance or the presumptive tax collection efficiency in the Sub city ?

    1. Very low 2. Low 3.Moderate 4.High 5. Very high

3. Did you pay tax last year? How much? ----------

Part - Three: Individual factors affecting tax compliance of taxpayers

1. Have you ever participated on education by tax authority for tax payers?

    1. Yes 2. No

2. If " yes " for Q1, how do you evaluate the feedback of the education/training ?

    1. Very low 2. Low 3.Moderate 4.High 5. Very high

3. Questions related to awareness of the penalties

Please your agreement or disagreement to the statement listed in the following table

No	Items	**1. Strongly disagree**	**2. Disagree**	**3. Neutral**	**4. Agree**	**5. Strongly agree**
1	If there is no penalty, there is possibility that I may not pay tax					
2	I fear the penalty for evading tax					
3	I feel that, the penalty rate for not complying tax law is not strong than other penalties for other crimes					

4. Do you have any personal financial constraints?

1. Yes 2. No

5. Average expenditure per month ----------birr

6. Average saving per month ---------- birr

Part –Four: Questions related social factors

1. Express your agreement to perception on fairness and equity of tax system

No	Item	**1. Strongly disagree**	**2. Disagree**	**3. Neutral**	**4. Agree**	**5. Strongly agree**
1	Ethiopian tax system is fair in general					
2	high-income tax payers are subject to tax at higher tax rate than low income- earners					
3	I believe that everyone pays their fair share of income under current income tax system.					

2. Express your agreement to peer influence related question

NO	Item	**1. Strongly disagree**	**2. Disagree**	**3. Neutral**	**4. Agree**	**5. Strongly agree**
1	As tax payer, do you believe that an organized tax payers are caused to evading taxes, their commitment to comply will be weaker.					
2	Do you agree that tax payers including you may commit non-compliance as long as your noncompliance is consistent with in-group expectations and norms					
3	The noncompliance of other taxpayers has a negative impact on compliant tax payers' attitude					

Part –Five : Questions related to institutional factors influencing voluntary compliance

1. Express your agreement on statements about simplicity of tax system

No	Item	**1. Strongly disagree**	**2. Disagree**	**3. Neutral**	**4. Agree**	**5. Strongly agree**
1	Tax laws are simple and clear					
2	I can easily understand tax law					
3	Rules related to tax law are clear and understandable					
4	Misunderstanding regarding tax law are easily solvable					
5	I have smooth communication and clarity with tax laws while discussing with tax officials					
6	The terms used in tax return forms are very simple and easy to understand					

2. Express your opinions about the tax authority efficiency

No	Item	1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
1	Service delivery is good					
2	Tax collection efficiency is poor					
3	Tax registration process is easy					
4	Tax assessments is fairly applied					
5	Tax law enforcement is appropriate					
6	Does the tax administration fairly treat the taxpayers?					
7	Awareness creation for tax payers is regularly undertaken					

Part – Six ; Questions related to economic factors

1. Express your agreement perception on tax rate structure

No	Statement	1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
1	Current tax Assessment rate on your business income is high					
2	If Assessment rate is high, tax payers take different actions to reduce tax liability they owe					

2. Express your agreement perception on taxrate structure

No	Statement	1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
1	Government of Ethiopia is appropriately utilizing tax revenue					
2	Public expenditure of our country balanced with revenue collected in the form of tax					
3.	I believe that government improperly spending the money collected from income tax					

Part – Seven: Questions related to the attitudes on voluntary tax compliance and income

No	Statement	1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
1	Tax liability is the responsibility of citizenship					
2	I always pay my tax liability on time by declaring correct amount without enforcement					
3	I believe that, if tax assessment is too high, it possible inflate deductions from income tax					
4	Not paying tax is wrong but some reasons that leads to this action					
5	Not paying tax is wrong action					
6	Not paying tax is wrong and punishable					
7	Tax law should be respected					
8	I feel that, the penalty rate for not complying with tax law is not so much strong than other penalties for other crimes					

9. Do you believe that COVID-19 pandemic affect as many small and medium-sized business taxpayers?

   1. Yes 2. No

10. If "yes " for Q10, how do you evaluate the affect ?

    1. Very low 2. Low 3.Moderate 4.High 5. Very high

11. Average of your income per month _____Birr.

Thank you!!