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Factors Affecting Voluntary Tax Compliance: The Case of Fafen Zone, Somali Regional State

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**FACTORS AFFECTING VOLUNTARY TAX COMPLIANCE: THE
CASE OF FAFEN ZONE, SOMALI REGIONAL STATE**



A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT
FOR THE MASTERS DEGREE IN ACCOUNTING AND FINANCE

**DEPARTMENT OF ACCOUNTING AND FINANCE
COLLEGE OF BUSINESS AND ECONOMICS
BAHIR DAR UNIVERSITY**

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JANUARY, 2023

BAHIR DAR, ETHIOPIA

Declaration

This is to certify that the thesis entitled '*Factors Affecting Voluntary Tax Compliance: The Case of Fafen Zone, Somali Regional State*' submitted in partial fulfilment of the requirements of the masters of science in accounting and finance of the department of accounting and finance, Bahir Dar University, is a record of original work carried out by me in line with the regulations of the university and meets an accepted standards with respect to originality and quality.

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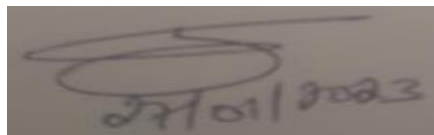
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COLLEGE OF BUSINESS AND ECONOMICS
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Approval of Thesis

I hereby certify that I have supervised, read, and evaluated this thesis entitled '*Factors Affecting Voluntary Tax Compliance: The Case of Fafen Zone, Somali Regional State*' by IFRAH ABDIKEREM AHMED prepared under my guidance and I recommend the thesis be submitted for defense.

A rectangular box containing a handwritten signature in dark ink. Below the signature, the date '27/01/2023' is written in the same ink.

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Approval of Thesis for Submission

As members of the board of examiners, we have examined this thesis entitled '*Factors Affecting Voluntary Tax Compliance: The Case of Fafen Zone, Somali Regional State*' by IFRAH ABDIKEREM AHMED. We hereby certify that the thesis is accepted for fulfilling the requirements for the award of the degree of Master of Science in Accounting and Finance.

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Abstract

The main issue faced by all tax authorities in developing countries is securing sufficient revenues to finance various governmental expenditures. Taxpayers who comply voluntarily with the tax system are paramount contribution for state building. Hence, the main aim of this study was to examine determinants that affect taxpayers' voluntary compliance level. The study used a cross-sectional survey design that employed a quantitative research approach with explanatory research type. In the current study dual-media surveys, paper based and online survey, were implemented. Category "A" and "B" taxpayers were the target population of the current study. Three Woredas of Fafen Zone were selected purposefully. However, the ultimate samples of the study were selected on random basis using stratified and simple random sampling techniques. Primary data obtained from 229 respondents were analyzed through descriptive and econometrics methods. Given the ordered nature of the dependent variable, the study employed an Ordinal Logistic Regression model. Stata Version 14 and the Statistical Package for Social Science (SPSS) Version 23 were used to manage and analyze the data. The result of this study revealed that tax knowledge and perception of fairness have a significant and positive effect on voluntary tax compliance. While, corruption, complexity of tax system and compliance costs have a significant and negative effect on voluntary tax compliance level. Thus, tax authorities before implementing any tax compliance strategies and policies, they should understand clearly factors that motivate and deter taxpayers' voluntary tax compliance level. So, to achieve sustainable, efficient and cost effective high voluntary tax compliance level, tax authorities should concentrate on fighting corruption, building easy and less costly tax system, educating taxpayers about tax and improving the fairness of the tax system.

Keyword: Enforced Compliance, Odds ratio, Category "A and "B" Taxpayers, tax evasion

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CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Securing high tax compliance has got greater priority in developing countries that are facing large revenue needs (IMF, 2015). To build sustainable economic growth and development, countries need to rise adequate financial resources (OECD, 2018; Besley & Persson, 2014). Hence, taxpayers who pay their tax voluntarily are crucial for rising adequate tax revenues (Richardson & Sawyer, 2017). Tax compliance is conforming to the requirements of the tax system (IMF, 2015). Voluntary tax compliance is a taxpayers' willingness to comply with tax laws, declare the correct income, claim the correct deductions and exemptions, and pay all taxes on time (Kirchler, 2007).

Tax compliance can be achieved either voluntarily by creating conducive environment for taxpayers or through coercive enforcement strategies like using penalties and rigorous auditing (Kirchler & Wah, 2010). However, high level of tax compliance will not be achieved entirely by using enforcement techniques. (Torgler & Schneider, 2005). Noncompliance taxpayers create burdens on the compliant taxpayers and on the government (Richardson & Sawyer, 2017). Thus, according to Richardson & Sawyer (2017), enabling taxpayers to comply voluntarily with the tax system is fundamental for both the government and the whole taxpayers in the system.

Tax-to-GDP ratio is one of measurement approach that helps to measure the countries' tax mobilization (tax compliance) (Tilahun & Yidersal, 2014). Tax-to-GDP ratio measures the amount of tax collected by the country versus the amount of income that the country is generating from the overall economic activities (MoFEC, 2018)

Developed countries have mobilized high tax revenue and achieved high tax-to-GDP ratio (OECD, 2019). Developed nations like France, Denmark had the highest Tax-to-GDP ratio of 46.1% and 45.7% respectively in 2017 (OECD, 2019). However, developing countries particularly African nations have faced challenges in arising adequate domestic revenues from taxes and are forced to depend on external resources (OECD, 2018). The Africa Tax-to-GDP average was 17.2%, which is below the Latin America and the Caribbean's average of 22.8% and the OECD average of 34.2% (OECD, 2019).

Recently Ethiopia has showed high economic growth which puts the country at the forefront from developing nations and has also made encouraging progress in mobilizing more

revenues from domestic sources, particularly in tax revenue (MoFEC, 2018). Despite its growth performance, the country has one of the lowest Tax-to-GDP ratios in the world, even by Sub-Saharan standard. In 2016/17 as a share of GDP, the total domestic revenue collection accounts only about 14.8% while the share of tax revenue was 11.4% (MoFEC, 2018).

According to Palil (2010), different countries have been carried out different measures in order to raise tax revenue. Among different measures, changing from direct assessment to Self-Assessment Systems (SAS) for direct taxes is the major one. In SAS, however, it is taxpayers' obligation to accurately calculate and declare their tax liabilities, deductible expense, submit their essential documents to the tax authority, which inherently lead to unintentional non-compliance (Palil, 2010). Though the aim of implementing SAS were to improve tax collection, to reduce the cost of collecting taxes, and thereby to have better voluntary compliance, however, as the responsibility for assessing tax liability has shifted from tax authorities to tax payers, the implementation of SAS will increase compliance burden and associated costs significantly on tax payers (Abdul-Jabbar & Pope, 2008).

Under SAS, it is taxpayers' duty to report a tax return containing detailed information and calculations of their taxable income and the competency, honesty, capability and readiness of taxpayers affect the accuracy of the tax returns (Palil, 2010).

Current Ethiopian Federal Income Tax Proclamation No. 979/2016, classified taxpayers into three categories, namely category "A", category "B", and category "C", based on their sales volumes and the ways in which their businesses are set up. According to Federal Income tax proclamation No. 979/2016, Category "A" and "B" taxpayers are required to prepare financial statements as well as to keep proper book of account. Thus, implementation of SAS could encourage taxpayers to engage in unintentional non-compliance behavior and could increase tax gaps (Palil, 2010). Therefore, SAS is applicable only for category "A" and category "B" taxpayers and that is why this study considered only these categories.

Therefore, the current study aimed at examining determinant factors of taxpayers' voluntary compliance level: what factors motivate taxpayers to comply voluntarily with the tax system or what factors influence taxpayers not to comply voluntarily with tax rule requirements in Ethiopia the case of FAFEN Zone. The results obtained from this finding will be useful for policy makers and stakeholders who will require amending laws and policy in order to motivate taxpayers' voluntary tax compliance.

1.2 Statement of the Problem

It is not clear why, despite greater enforcement efforts by tax authorities, non-tax compliance is continuing as major problem in the world (Devos, 2008). Various literatures of tax compliance have provided evidence suggesting that compliance is influenced by numerous factors. Scholars identified these factors as economic, social and psychological (Devos, 2008; Kirchler, 2007; Torgler & Schneider, 2005).

Tax compliance can be achieved either voluntarily by creating conducive environment for taxpayers (i.e. voluntary compliance) or through coercive enforcement strategies like using penalties and rigorous auditing (i.e. enforced compliance) (Kirchler & Wah, 2010; OCED, 2010). However, coercion enforcement techniques are not effective strategies in attaining high-level tax compliance (Torgler & Schneider, 2005).

Ethiopia is one of fast growing nation in the world (World Bank, 2019). The economy has been growing at a rate averaging 9.9% since 2007/08 to 2017/18, which was the highest when compared to the African average of 5.4% (World Bank, 2019). By 2025, the country also aspires to achieve lower-middle- income status country (MoFEC, 2018).

Despite the fact that Ethiopia has made advancements in increasing domestic revenue, the country still lags countries in the East Africa and other Lower Income Countries (LIC) (MoFEC, 2018). The domestic revenue growth also declined over the recent years and depicts an annual growth of about 10% in 2016/17 compared to an average growth of 34% between the years 2009/10-2014/15 (MoFEC, 2018). Since 2015/16, the government of **Ethiopia** has also executing the second phase of Growth and Transformation Plan (GTPII) (MoFEC, 2018). The government in its five-year GTPII (2015/16–2019/20) has set a goal of increasing domestic revenue by improving the tax administration system (MoFEC, 2018). Thus according GTPII aspiration the share of tax revenue to GDP is expected to increase from 13.7 percent in 2014/15 (base year) to 17.2 percent in 2019/20 (MoFEC, 2018).

However, despite the projection (17.2 percent of GDP at the end GTPII), the countries' tax revenue mobilization has declining since fiscal year 2014/15 (MoFEC, 2018). In addition, achieving the target of 17.2 percent of GDP by 2019/20 will be difficult due to low tax mobilization rate (IMF, 2018).

Low level of tax compliance is the major obstacle for weak tax revenue mobilization in Ethiopia (IMF, 2015). This also manifested in regional state. According to Somali Revenue Bureau 2020 annual report, the tax noncompliance is the major problem in the region. According to the report, from 27, 000 total taxpayers in the region, only 10.97% of taxpayers

were full compliant. The other 54.6% taxpayers were engaged in unintentional noncompliance practices (Table 1). According to the report, 5 % taxpayers were found tax evaders. (Somali Revenue Bureau, 2020).

Table 1: Somali region taxpayers' compliance behavior

No	Full compliant tax payers	Unintentionally noncompliant taxpayers	Engaged in both compliance and noncompliance activities	Tax Evaders	Total
Total	2,984	14,853	7,990	1,373	27,000
Percent	10.97%	54.6%	29.4%	5.04%	100

Source: Somali Revenue Bureau (2020), p. 40

According to Mckerchar (2002), complexity of the tax system and lack of awareness about taxation are major factors for unintentional tax noncompliance practices. Unintentional noncompliance problems, however, can be eliminated easily by introducing simpler tax system (Mckerchar, 2002). Thus, complexity of the tax system might be the major cause for high unintentional tax noncompliance in Somali region.

There are various studies conducted in Ethiopia to understand the factors behind this low level of tax compliance practices. Many reviewed studies that were conducted in Ethiopia were, however, identified and recommended coercive factors like auditing Frehiywot & Lemma (20189, Mesele (2018), Niway & Wondwossen (2015), tax investigation, detection and penalty Manchilot (2018), Dinku & Alamirew (2018) as a strategy to improve voluntary tax compliance. Another study by Tadesse & Goitom (2014) and Ahmed & Kedir (2015) also have discussed auditing and penalty to improve voluntary tax compliance. From these findings, it is possible to infer that most tax compliance studies in Ethiopia recommend coercion factors as a strategy to influence taxpayers' voluntary tax compliance.

However, the aforementioned tax compliance strategies forwarded by Ethiopian researchers are in contrary to many voluntary tax compliance theories and to international tax compliance literatures. For example, studies by Ahmed, Chetty, Mobarak, Rahman, & Singhal (2012) and Braithwaite (2002) found enforcement through audits and penalty strategies often very costly and such threats may be effective only in the short run. On the other hand, the

coercion-based enforcement methods to be effective, tax officials must have provided continuous training and incentives to tax auditors and tax investigators which are difficult and costly for developing countries (Ahmed et al., 2012). Enforced compliance may motivate taxpayers to reduce their contribution within the legal range of the law and engage in tax avoidance (Kirchler & Wah, 2010). Even enforced strategies encourage more evasion and corruption as evading taxpayers benefit from weak auditors and prefer corrupt officials to escape penalties (Ahmed et al., 2012). Voluntary tax compliance is achieved by building a simple, fair, reliable and efficient tax system (Augustine & Enyi, 2020). According to Augustine & Enyi (2020) rule of law and lack of corruption can be also seen as a good characteristic of a good and efficient tax system.

As per the researchers' knowledge, it might be due to misunderstanding of voluntary tax compliance determinants that tax voluntary tax compliance level in Ethiopia is still at a low level. For example, tax authorities in Somali Revenue Bureau are implementing enforced strategies as a means to mobilize tax revenue. According to Somali Revenue Bureau 2019 annual report, the authority audited 11,841 taxpayers; performed special investigations for 2096 financial statements and prosecuted 124 taxpayers. As per the report, the authority also achieved 70.24% audit productivity in 2018/19 fiscal year. This shows the authority is implementing more coercive enforcement strategies as a means to influence taxpayers' tax compliance. However, as can be inferred from Table 1, not all the enforcement strategies followed were effective.

Additionally, tax compliance studies conducted in Ethiopia, that collected ordinal data through survey have implemented Ordinary Least Squares (OLS) analysis techniques by considering the ordinal scale variable as a continuous variable. For example, Mesele (2018); Desta, (2010) employed OLS Models to analyse their ordinal data. However, discarding the ordinal nature of the variable would expose the analysis to lose some useful information that could lead to misleading results (Liu, 2009; Hosmer & Lemeshow, 2000)

Although the implementation of Self-Assessment System (SAS) for taxpayers was intended to improve voluntary tax compliance (Palil, 2010), the amount of compliance cost involved, taxpayers' tax knowledge, simplicity of tax forms are determinant factors that influence voluntary tax compliance (Jenkins & Forlemu, 1993; Kirchler, Muehlbacher, Kastlunger, & Wahl, 2010; Kirchler & Wah, 2010; Saad, 2011). Similarly, Kirchler & Wah (2010) found in

their study, trustworthy authorities are likely to be important factors in determining voluntary tax compliance level.

Therefore, in the current study factors suggested by Jenkins & Forlemu (1993), Kirchler et al. (2010), Kirchler & Wah (2010), and Saad (2011) for improving voluntary tax compliance were included whether they are also determinant factors currently in the study area.

To date, no study has been conducted to identify determinants that motivate voluntary tax compliance with appropriate estimation technique in Ethiopia particularly in Fafen zone of Somali Regional State. Thus, this study has emerged to fill up such knowledge gaps of understanding voluntary tax compliance determinants that are estimated with appropriate estimation method. In addition, the current study also propose more effective, efficient (i.e. would have lower administrative costs to tax authorities) strategies to improve better and sustainable voluntary tax compliance. This study is also differ from the previous studies by employing Logistic Regression Method/ Proportional Odds Model to examine the determinants of voluntary compliance level which is appropriate for ordinal data.

1.3 Objectives of the Study

1.3.1 General Objectives of the Study

The major objective of this study was to identify factors influencing taxpayers' voluntary compliance level in Fafen zone, Somali Regional State.

1.3.2 Specific Objectives

The specific objectives of this study were:

1. To investigate the level of voluntary tax compliance in Fafen Zone.
2. To examine the effect of perception of corruption on voluntary compliance level of taxpayers.
3. To investigate the effect complexity of tax system on voluntary tax compliance level of taxpayers.
4. To examine the effect of tax knowledge of tax payers on voluntary tax compliance level of respondents.
5. To test whether the cost of compliance has an impact on voluntary tax compliance level of taxpayers.
6. To investigate the influence of perception on fairness and equity of tax system on voluntary compliance level of taxpayers

1.4 Research Hypothesis

After carefully reviewing various theories and empirical studies of voluntary tax compliance, the researcher developed general hypotheses as discussed in literature review section of this study. Theory-inspired research hypotheses to guide this research were formulated as follow:

- H1: Perception of corruption has a negative and significant impact on voluntary tax compliance level of taxpayers.
- H2: Complexity of the tax system has a negative and significant effect on voluntary tax compliance level of taxpayers.
- H3: Tax knowledge has a positive and significant effect on voluntary tax compliance
- H4: Cost of compliance has a negative and significant effect on voluntary tax compliance level
- H5: Fairness and equity of tax system has a positive and significant influence on voluntary tax compliance level.

1.5 Significance of the study

Understanding tax compliance determinants has tremendous advantages for government for tax levying, public spending, and providing public goods (Batrance, Nichita, & Batranicia, 2012).

Hence, the findings of this study are capable of providing specific voluntary tax compliance strategies that are efficient and effective. This study will contribute for the tax authorities in selected Woredas, to gain a better understanding about the factors that determine voluntary compliance behavior. Additionally, the results of this study will enable tax authorities to implement efficient compliance strategies. The study also identifies chief determinants of voluntary tax compliance from the identified variables and provides material contribution to the existing literature in uncovered areas.

This study is a pioneer study in implementing online survey in the area. Researchers from all area of discipline may get insight about conducting large coverage studies using online survey.

In addition, this study also responds to some important calls made by Marandu & Mbekomize (2015) “A good number of the reviewed studies used students as respondents. Future researchers are advised to use actual taxpayers rather than students who may not adequately understand and display actual behavior of tax compliance” (Marandu & Mbekomize, 2015, p.16).

1.6 Delimitations

Undertaking research, particularly data collection practices was very challenging during the Pandemic. It demanded great sacrifice form the researcher.

This study was delimited conceptually, geographically, and the participants involved. Conceptually the study was confined itself on identifying determinant factors that affect taxpayers’ compliance while they pay their tax voluntarily (i.e. without using coercion mechanisms). Geographically the study covered three Woredas of Fafen zone, Somali Regional State, which were selected purposively by the researcher. This is due to two reasons: first, it is convenient area for the researcher. Second, the area is surplus area in Ethiopia, which is expected to contribute large tax revenue. In the current study, unincorporated category “A” and “B” individual business entities in their annual tax return were considered for the study. Category “C” taxpayers and incorporated entities were not included in this study. This study, rather than including open-ended questions, only Likert-type closed-ended

questions were included which might make some people willing to complete the survey. The study also implemented online survey design, in which traditional paper survey was difficult during the pandemic.

1.7 Organization of the paper

This thesis is organized in to five chapters. Chapter one comprises of the background of the study, the statement of the problem which tells about the research gap and justifies the need for the research, objectives of the research, hypotheses, the significance, delimitation of the study. Chapter two reviews the theoretical backgrounds and empirical literatures related to voluntary compliance. Chapter three outlines the methodology applied in the study, whereas the results and main findings of the study are presented in Chapter four. Discussions and implications of the study are also presented in Chapter Four. Finally, conclusions, recommendations, limitations and further research directions are summarized in Chapter five.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This chapter reviews theoretical foundations of tax compliance and previous empirical findings in the field. The chapter discusses about definition of tax and taxation, brief presentation of Ethiopian taxation system, tax compliance concepts theoretical foundation. Finally, reviews of prior literatures on possible determinants of voluntary tax compliance are discussed.

2.2. Definition of Tax and Taxation

Tax is defined as “a monetary charge levied by the government on persons, entities, transactions or properties to yield revenue” (MoFEC, 2018, p.3). Tax is the principal source of government revenue that used to spend on expenditures and developments (OECD, 2019). The OECD (2010) defines the term tax as the compulsory, unrequited payments to the government.

Taxation is a system used by the governments to generate revenue through tax (Misrak, 2014). Tax systems are designed for various purposes like generating revenues for the government, discouraging certain activities and protecting the environment and local industries from foreign competition (Palil, 2010)

2.3. Ethiopian Tax System

2.3.1. Business Categories in Ethiopia

Federal Income Tax proclamation of Ethiopia no. 979/2016 classified the business income tax payers in Ethiopia in to three major categories based on legal personality and annual gross income. These are:

1. Category “A” Taxpayers
2. Category “B” Taxpayers
3. Category “C” Taxpayers

2.3.1.1. Category “A” tax payers

This category of taxpayers includes:

- a) A body incorporated under the laws of Ethiopia or in a foreign country
- b) Any other business having an annual turnover of Birr 1,000,000 or more

As per the proclamation, tax assessment for category “A” taxpayers are based on the profit and loss statement prepared in conformity with the Accepted Accounting Standards and Principles and required to submit to the Tax Authority, at the end of the year, a balance sheet and profit and loss statements.

These taxpayers should prepare authorized vouchers and receipts for any transaction. Any voucher and receipts however, should be authorized by authorities before use (Misrak, 2014)

2.3.1.2. Category “B” Taxpayers

Category “B” taxpayers are those whose annual gross income is birr 500,000 or more but less than 1000,000. This category of taxpayers should submit to the Tax Authority profit and loss statement at the end of the year (MoFEC, 2018)

2.3.1.3. Category “C” Taxpayers

Category “C” tax payer include any other business which are not already classified under category “A” or “B” business and having annual gross income of less than birr 500,000. (MoFEC, 2018).

2.3.2. Declaration of Business Income and Assessment

In accordance with income tax proclamation no 979/2016, category “A” tax payers shall prepare and submit balance sheet, profit and loss statement within four month from the end of the tax payers’ tax year. Category “B” tax payers also shall prepare and submit balance sheet, profit and loss statement within two months after the end of their tax year which is the Ethiopian fiscal year. Category “C” taxpayers declare their annual income from all sources within a month after the end of Ethiopian fiscal year.

According to the proclamation, Tax Authority may assess the business tax return by Estimation if the business fails either of the following.

1. No records and books of accounts are maintained;
2. The records and books of accounts are unacceptable to the Tax Authority;
3. If the taxpayer fails to declare his or its income within the time prescribed by the proclamation.

In accordance of the Ethiopian income tax proclamation no 979/2016, individuals and bodies are not free to follow their tax year differ from Ethiopian fiscal year. However, bodies may

change their tax year but only with written approval of the tax authorities and compiles with any condition that may be attached to the approval.

2.3.3. Tax Laws and Regulations in Ethiopia

There are a number of proclamations, regulations and tax reforms dealing with taxes in the country. The following tax laws and regulations are enacted to implement the tax policy of Ethiopia: (MoFEC, 2018, p.5)

- Federal Income Tax Proclamation No. 979/2016; gross profit and the manner in which it is computed
- Federal Income Tax Regulation No 410/2016;
- Tax Administration Proclamation No. 983/2016;
- Value Added Tax Proclamation No. 285/2002 and its Amendment
- Proclamation No 609/2008;
- Excise Tax Proclamation No 307/2002 and its Amendment
- Proclamation No. 610/2008;
- Turn Over Tax Proclamation No. 308/2002 and its Amendment
- Proclamation No. 611/2008;
- Council of Ministers VAT Regulations No. 79/2002; and
- Customs Duty and Tariff Regulation 80/2002

2.4. Tax Compliance

Tax compliance is conforming to the requirements of the tax system (IMF, 2015). James &Alley (2002), who defined tax compliance as the degree to which the taxpayers obey with the tax laws, forward a simple definition of tax compliance. James &Alley conceptualized tax compliance along the continuum of two ends. One end of the continuum, which is the narrow one, is depicted as noncompliance, which is a tax gap. The other end of the continuum is full voluntary compliance that tax authorities seek to achieve (James & Alley, 2002).

Compliance with basic obligations of taxation can be achieved with free will of tax payers (i.e. voluntary compliance) or by coercion mechanisms (i.e. enforced compliance) (OCED, 2010)

2.4.1. Voluntary Tax Compliance

Voluntary tax compliance refers to the willingness of taxpayers to act willingly and in accordance with the tax law without any legal coercion (OCED, 2010). It is defined as taxpayers' willingness to comply with tax laws, declare the correct income, claim the correct deductions and exemptions, and pay all taxes on time (Kirchler, 2007). More comprehensively, voluntary tax compliance is defined as taxpayers' willingness to obey tax rule requirements, submit their correct income, claim the correct deductions, and rebates and pay all taxes on time, which can be achieved through better taxpayer service, tax simplification, and mutual understanding (Kirchler, 2007). Voluntary approach for tax compliance also called persuasive collaborative, cooperative, or carrot-based approach and less expensive and more effective for administering and enhancing voluntary tax compliance (Akhand & Hubbard, 2016).

2.4.2. Enforced/ Coercive Tax Compliance

Enforced compliance is a tax compliance strategy corrected by verification/enforcement actions carried out by the revenue bodies (OCED, 2010). This tax compliance approach, it is also called stick-based approach, attempts to promote tax compliance through a mix of penalties, tax audits and imprisonments (Akhand & Hubbard, 2016). However, this approach for compliance found costly for tax administration and enforcement threats such as audits and penalty may be effective only in the short run (Ahmed et al, 2012).

2.4.3. Tax Noncompliance

Non-compliance is failure to comply with tax laws and/or report incorrect income, the act of claiming incorrect deductions and exemptions and/or paying the incorrect amount of tax beyond the stipulated period (Kirchler, 2007). Tax noncompliance and tax compliance can be considered the opposite of each other (Palil, 2010)

2.5. Tax avoidance and Evasion

James & Alley (2002) in their research noted that non-compliance is manifested on both tax evasion and some form of tax avoidance. Tax avoidance is a legal reduction in tax liabilities by practices that take full advantage of tax law loopholes, such as income splitting, postponement of taxes and tax investing in different areas to get a different tax intervention (Devos, 2014). According to Misrak (2014, p. 101) "tax evasion is a method of saving the true of tax liability of a taxpayer but by dishonest and fraudulent actions like omission of

income subject to tax, inflating deductible expenses and claiming tax deductions in factious transaction”

2.6. Theory of Voluntary Tax Compliance

2.6.1. Economic Deterrence Theories

The Traditional Economic Deterrence Model of tax compliance assumes individuals as utility maximizers who evaluate the cost and benefits of paying and evading taxes (Kirchler, 2007). The Economic Deterrence analysis of the evasion assumes individuals would evade if they were ‘rational’ (Devos, 2008). Thus, according to this approach, taxpayers will prefer to comply with tax only when the gains of compliance exceed the costs of non-compliance (James & Alley 2002). However, this model neglected various factors that affect taxpayers’ behavior (Devos, 2008). Behavioral theories on other hand explain the importance of personal and social norms in explaining taxpayers’ behavior (Devos, 2008). ,

The Economic Deterrence (Traditional theory of Tax compliance) analysis of compliance suggests that rational individuals are utility maximizes who weight the cost and benefits of paying taxes and likely to comply if the cost of comply is low (Alm, McClelland, & Schulze, 1992)

Thus, according to this approach, taxpayers will prefer to comply with tax only when the gains of compliance exceed the costs of non-compliance (James & Alley, 2002). Audit probabilities, penalties, and sanctions are among factors determine taxpayers’ compliance from the economic point of view (Devos, 2014). According to this theory, a tax payer will fail to comply when he or she perceives that the cost of evading tax is too low, believing he or she is unlikely to be detected or audited ((James & Alley, 2002; Das-Gupta, 2004).

In their model, Allingham & Sandmo (1972) proposed that the higher deterrence is the higher compliance. Traditional models of tax compliance have focused on audit-based enforcements strategies like penalties, tax rate, audit probability, fines, penalties and imprisonments as important parameters to affect taxpayers’ compliance (Kirchler., 2007). Advocators of The Economic Deterrence Model assumes that a taxpayer is a gambler or a thief, so, increasing the penalties imposed for any deficits, or increasing administrative expenses (audit rates, which in turn will increase the probability of detection).will minimized noncompliance (Smart, 2012; Allingham & Sandmo, 1972).

However, Economic Deterrence Theories enjoy eminent in taxpayers' compliance literature, it have been criticized due to the limitations in representing the relevant behavioral aspects of tax compliance behavior (Smart, 2012).

2.6.2. Behavioral Theory for Tax Compliance

This approach of tax compliance is based on a voluntary willingness of taxpayers to act in accordance with the spirit as well as the intent of tax law (James & Alley, 2002). The wider approach of compliance behavior assumes individual are not simply independent selfish and utility maximizes, but also interact with tax authorities according to differing attitudes, beliefs, norms and roles such that the success of the tax effort depends on co-operation to tax compliance view tax payers is presented (Devos, 2014).

2.6.3. Fiscal Exchange Theory

Fiscal exchange theory, which evolved from the Economic Deterrence and the Social Psychology models focuses on the relationship between public provision of goods and services and taxpayers compliance and suggests government expenditure that is valued by citizens may motivate compliance by taxpayers (Ali, Fjeldstad, & Sjursen, 2013). Thus, taxpayers will be encouraged to comply voluntarily when government provisions satisfy them (Torgler, 2003)

Conversely, compliance will be reduced when taxpayers are dissatisfied with services provision from the government; the system of taxes is perceived to be unjust, or even when they disfavor the way their taxes are spent (Palil, 2010)

2.6.4. Comparative Treatment Theories

According to this theory, individuals will perceive the tax system as fair and continue complying with rules if the benefits received from the government for tax paid is an equitable ratio. If the ratio is not equitable, taxpayers resent to comply with taxation voluntarily (Saad, 2011). Mutual trust and cooperation between tax bodies and the taxpayers, which subsequently enhances voluntary compliance, can be achieved by establishing fair tax system (Kirchler, Hoelzl, & Wahl, 2008).

The major premise in this theory is that individuals tend to comply voluntarily when they perceive the entire tax system is fair (OCED, 2010). There are three levels of fairness in taxation. These are distributive fairness, which is about the taxpayers' perception that the

government play in the way that tax revenue is spend wisely. Procedural fairness, on the other hand relates to the perception of taxpayers that tax bodies act in accordance with existing procedures, and are fair in dealing with taxpayers; retributive fairness is relates to taxpayers' perceptions that punishments to violating tax laws are fair. (OCED, 2010)

2.6.5. Political Legitimacy theory

Political Legitimacy is a belief on the authorities, institutions, and social arrangements to be appropriate, just and work for the common good (Ali et al., 2013). The extent to which citizens trust their government influences tax compliance and sense of willingness to obey authorities power (Robbins & Kiser, 2018). To increase voluntary compliance tax authorities must ensure that the taxes are invested in the public welfare rather than filling the pockets of tax administrators or other government officials (Alm, 2012). As citizens trust their government and social institutions, they are more likely to be voluntarily compliant (OCED, 2010).

2.6.6. Theory of Planned Behavior (TPB)

The Theory of Planned Behavior is an extended version of the Theory of Reasoned Action that emerged with major premises that the person's intention to perform or not perform a behavior is an immediate determinant of behavior (Marandu & Mbekomize, 2015). "Intention is the cognitive representation of a person's readiness to perform a given behavior and is considered to be the immediate antecedent of behavior" (Marandu & Mbekomize, 2015, p. 213). According to this theory, the persons' intention influences the person to perform or not perform an action (Saad, 2011). The intention itself also determined by three factors, attitude, subjective norms and subjective control toward the specific behavior (Saad, 2011). More specifically, the Theory of Planned Behavior attempts to provide an account of the way in which attitude, subjective norms, subjective control and intentions combine to predict behavior of taxpayers (Marandu & Mbekomize, 2015).

2.7. Application of Theories in Current Study and Hypothesis Development

Theory-inspired research hypotheses to guide this research were formulated as follow.

2.7.1. Political Legitimacy and Corruption

Corruption is the abuse of public power for personal benefit (Rosid, Evans, & Tran-Nam, 2017). Corruption has many types (Rosid et al., 2017). Petty corruption is small-scale

corruption and takes place at the public services level where the public officials meet the public. On the other hand, political corruption is the abuse of entrusted power by political leaders for private gain, with the objective of increasing power or wealth (Rosid et al., 2017).

According to Political Legitimacy Theory, higher perceived corruption by taxpayers may erode their willingness to contribute their fair share (Ali et al, 2013). Perceptions of corruption have a negative impact upon the way taxpayers behave (Wolela & Fjeldstad, 2016).

H1: Perception of corruption has a negative and significant impact on voluntary tax compliance level of taxpayers.

2.7.2. Economic Deterrence and Cost of compliance and Complexity

Tax compliance costs are the costs bear by taxpayers in discharging their responsibility required by tax law (Eragbhe & Modugu, 2014). According to this theory compliance decreases with both the level of compliance costs and marginal compliance costs (Das-Gupta, 2004). OECD (2004), noted cost of compliance as one of economic factor that taxpayers appear to face while they comply with their tax obligations over and above the actual amount of tax they pay.

Similarly, complexity of the tax system, as discussed by the economic deterrence model, is also a factor that determines voluntary tax compliance level of taxpayers (Ekpulu & Iyoha, 2016).

H2: Complexity of the tax system has a negative and significant effect on voluntary tax compliance level.

H4: Cost of compliance has a negative and significant effect on voluntary tax compliance level

2.7.3. TPB and Compliance Behavior and Tax Knowledge

The Theory of Planned Behavior attempts to provide an account of the way in which attitude, subjective norms, subjective control and intentions combine to predict behavior of tax payers (Marandu & Mbekomize, 2015). In this theory attitude, subjective norms and perceived behavioral control are the antecedents for behavioral intention, that leads to actual behavior (Saad, 2011). Individuals' perceived behavioral control is closely related to his/her skills, knowledge, and assistance from others. (Saad, 2011; Erten, 2003). Saad (2011) in her

study, the intention to comply as a proxy for actual compliance, a common TPB approach, implemented in order to mitigate the difficulty in obtaining information on actual tax compliance behavior (which is regarded as a sensitive issue to taxpayers)..

H3: Tax knowledge has a positive and significant effect on voluntary tax compliance level

2.7.4. Comparative Treatment and Perception Fairness and Equity

To increase voluntary compliance taxpayers need to believe that other taxpayers are also paying their fair share (Alm, 2012). According to this theory, taxpayers are more likely to behave higher tax compliance when they perceive the entire tax system as fair, and vice versa (OCED, 2010).

H5: Fairness and equity of tax system has a positive and significant influence on voluntary tax compliance level.

2.8. Empirical Studies

The researcher found out empirical evidences from different types of sources to build a relationship between each of independent and the dependent variable. The researcher presents the empirical evidences under the separate heading as follows.

2.8.1. Studies on Tax Compliance Behavior

According to Saad (2011), an individuals' perceived behavioral control is closely related to his/ her skills, knowledge and assistance from others. Subjective norms and perceived behavioral control are the antecedents for behavioral intention that leads to actual behavior (Marandu & Mbekomize, 2015). Behavioral intention towards taxpayers' compliance shows a positive and significant influence (Nurwanah, Sutrisno, Rosidi, & Roekhudin, 2018). Nurwanah et al. (2018) and Saad (2011) in their study found that the higher the behavioral intention a taxpayers has the higher the level of tax compliance. However, studies on compliance behavior are less important without identifying the potential factors leading to such behavior (Saad, 2011).

2.8.2. Studies on Perception of Corruption and Voluntary Tax Compliance

Corruption is the abuse of public power for personal benefit (Augustine & Enyi, 2020). Corruption affects many areas of the nation but it affects significantly country's revenue

performance (Rosid et al., 2017). Studies that are conducted about Perceptions of corruption and tax compliance behavior in developing countries found that high levels of perceived corruption appear to have an adverse impact on taxpayers' attitudes and norms toward reporting actual income (Rosid et al., 2017). Similar studies by Wolela & Fjeldstad (2016) and Frehiywot & Lemma (2018), found a negative and statistically significant correlation between taxpayers' voluntary compliance and perception of corruption. Similarly, high perceptions of corruption affect taxpayers' compliance behavior, which is a challenge to state building in developing countries (Rosid et al., 2017). Another recent African study by Augustine & Enyi (2020) discussed the importance of citizens trust on government institutions as a prerequisite to voluntary tax compliance.

2.8.3. Studies on Complexity of the Tax System and Voluntary Tax compliance

Tax complexity has become an important determinant of tax compliance behavior as rules and regulations are becoming more complex (Palil, 2010). Simplicity of the tax system is a precondition of better compliance by taxpayers but complexity tax systems may encourage unintentional non-compliance by creating a problem in filling out the tax form (Torgler , 2003). Richardson & Sawyer (2017) also discovered that tax complexity arises because of the raised sophistication in the tax law. Similarly, complexity of the tax system increases taxpayers non-compliant behavior, and policy makers can build better compliance by s by reducing tax complexity of the tax system (Torgler, 2003). Similarly, Niway & Wondwossen (2015), discussed that simplified tax system will motivate taxpayers to complete the tax return on their own as the main feature of SAS. Another study by Saad (2011, 14) found that high complexity of the tax system obliged taxpayers to not comply with their tax obligations either intentionally or unintentionally.

However, some previous studies found that when tax law complexity increases cautious taxpayers might be more likely to be compliant (Hite & McGill, 1992). Hite & McGill (1992), in their study suggested that tax law complexity might increase compliance by inducing caution on taxpayers.

To summarize, most empirical studies on that complexity of tax system shows that complexity of the tax system have negative impact on voluntary compliance.

2.8.4. Studies on Tax knowledge and voluntary Tax compliance

Tax knowledge is a prerequisite to understand tax laws and regulations, and assist to comply with tax law requirements (Palil, Akir, & Ahmad, 2013). Saad (2014), studied that better tax knowledge can boost tax compliance level. In order to build strong tax system developing tax knowledge of taxpayers is an important action (Palil, 2010). Another study by Loo (2006) and Niway & Wondwossen (2015) found that taxpayers' tax related knowledge is the most influential factor to determine taxpayers' compliance behavior. Kerchler (2007), also document possessing tax knowledge will lead to higher voluntary tax compliance. Similarly, lack of tax knowledge may contribute either intentional or unintentional non-compliance behavior among taxpayers (Kiow, 2017)

However, studies by Manual & Xin (2016) indicated that tax knowledge are insignificant to compliance behavior. Their claim is that taxpayers who possesses higher tax knowledge is well-know loophole in tax regulation and system and aware the legal way to reduce or even avoid tax.

2.8.5. Studies on Cost of Compliance

Tax compliance costs plays a key role in determining taxpayers willingness to pay tax (Eragbhe & Modugu, 2014). These costs are inherent with in the nature of tax and could be avoided if taxes was abolished (Eragbhe & Modugu, 2014). Tran-Nam, Evans, Walpole, & Ritchie (2000) indicated that tax compliance cost influences tax compliance behavior significantly and negatively. Frehiywot & Lemma (2018), in their study also found compliance cost as adeterminant factor that influence voluntary compliance level.

2.8.6. Studies on perceived Equity and Fairness of the Tax system

Fairness is considered as one of the characteristics of good tax system (Kirchler., 2007). Fairness refers to a situation where taxpayers are taxed according to their ability (Richardson, 2006). Garboua, Montmarquette, & Masclet (2006) discovered that a high level of fairness perception leads to a high level of voluntary tax compliance. Taxpayers' information about fairness perceptions are positively associated with compliance behavior taxpayers (Saad, 2011). A study conducted by Tilahun & Yidersal (2014) and Niway & Wondwossen (2015) also found postive fairness perception of tax payers about the tax system motivate them to comply voluntarily.

2.9. Knowledge Gaps

Though, there are a few studies conducted in Ethiopia, particularly in the study area, to understand tax payers' voluntary compliance level. For example, studies conducted by Desta (2010), Amina (2015), Ahmed & Kedir (2015), Dinku & Alamirew(2018), Frehiywot & Lemma (2018), Mesele (2018), Manchilot (2018), Niway & Wondwossen (2015), Tadesse & Goitom (2014), incorporated different explanatory variables in their study to understand voluntary tax compliance determinants. They also forwarded different suggestions to motivate voluntary compliance including the use of coercive strategies (i.e. auditing, penalties and punitive measures) to improve voluntary compliance. However, it is hard to achieve voluntary tax compliance using coercive strategies (Ahmed et al., 2012). These shows, none of these studies understand correctly voluntary compliance and coercive compliance factors. The aforementioned studies also neglected the motivating factors behind taxpayers' voluntary compliance behavior. Many of past studies reviewed in this paper have been focused on recommending the of coercive strategies to influence taxpayers' compliance behavior (i.e. auditing, fines and penalties and imprisonment). However, these enforced approach have been found costly and audit based interventions are not effective in increasing compliance behavior instead discourage taxpayers' intrinsic motivation to comply (Hallsworth, 2014). Hence, the current study is different from the previous studies by incorporating variables that are supposed to be influence taxpayers' voluntary compliance.

Previous studies on tax compliance behavior have mostly focused on developed countries context. For instance studies such as Allingham & Sandmo (1972); Torgler (2007); Devos (2014); Kirchler & Wah (2010) conducted in developed countries. Because of different economic, social, and political and cultural contexts, it is unlikely that the determinants of tax compliance in developed nations will be the same in Ethiopia.

Similarly, previous studies on tax compliance have also mostly used students as a respondent. For example, Fjeldastad & Semboja (2001) and McGee (2007) conducted their studie on student respondents. Studing tax complisnce using student as a subjects is appropraite for tax compliance studies, studentas are not awar about more the real situations in the tax system as real tax payers (Marandu & Mbekomize, 2015). The current study, however, incorporated real taxpayers as a subject of the study.

The major problem of tax compliance studies reviewed are the presence of many determinant factors that are hypothesized to influence tax compliance behavior (Marandu & Mbekomize, 2015). For example, Marandu & Mbekomize (2015) reviewed several studies and found more

than 70 explanatory variables that made it difficult to compare results of the different studies because of lack of commonality among the variables used. In this study, it has been tried to generate few explanatory variables that potentially influence voluntary tax compliance.

The advancement of technology have brought new challenges to data collection approaches (face-to-face, postal or telephone survey) (Aborisade, 2013; Regmi, Waithak, Paudyal, Simkhada, & van, 2016). With the expansion of internet and social media platforms, various studies have reported that response rates are declining (Van Gelder, Bretveld, & Roeleveld, 2010). The expansion of mobile phones and growing use of internet has made traditional sampling challenging (Carley-Baxter, 2010). In this study it has tried to use online data collection technique as a major data collection way.

Many tax compliance studies in Ethiopia that were reviewed in this study have some methodological issues. Ordinary Least Squares Regression requires that outcome variables have interval or ratio level measurement (Williams, 2016). On the other hand, regression analysis with categorical dependent variable uses none linear regression methods like logistic regression methods (Liu, 2009; Hosmer & Lemeshow, 2000). To be specific most tax compliance studies, like Mesele (2018); Desta, (2010), Ahmed & Kedir (2015) done their study using multiple regression analysis, which was appropriate for logistic regression analysis.

Thus, the aforementioned problems motivated the researcher to carried out the current study with the case in Fafen Zone of Somai Regional State, and the researcher believes that it is timely to fill the above listed research gaps.

2.10. Conceptual Framework

Base on different theoretical and empirical reviews on voluntary tax compliance (Kirchler & Wah, 2010; Jenkins & Forlemu, 1993; Saad, 2011) the following conceptual framework have been developed.

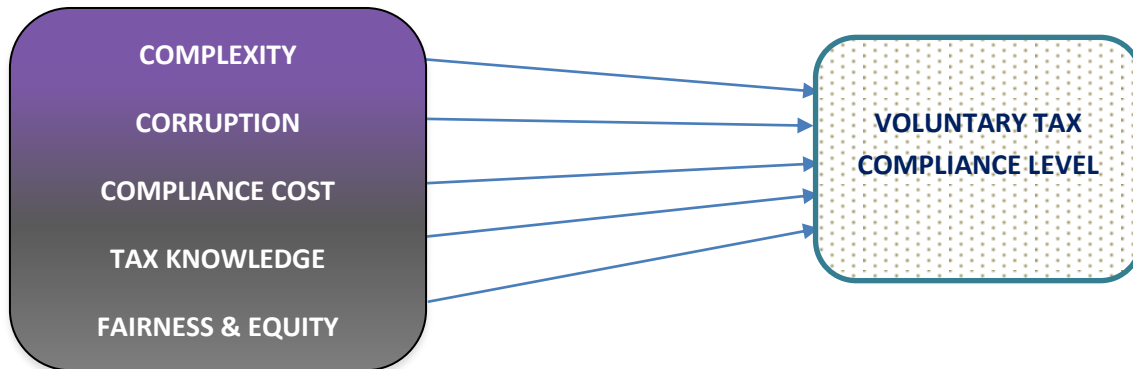


Figure 1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

A research paradigm is way of understanding the reality of the world and studying it (Rehman & Alharthi, 2016). It is a fundamental belief and theoretical framework with assumptions about ontology, epistemology, methodology and methods (Rehman & Alharthi, 2016). The most common paradigms according to Rehman & Alharthi (2016) are post-positivism, constructivism or interpretivism and pragmatism. The post positivism, an epistemological position, approach views the world as objective realism and provokes knowledge is created by deductive reasoning and positivist researchers focus on quantitative methods like surveys and experiments designs (Clark, 1998). In Post Positivism, the focus is on the importance of objectivity and evidence in searching for truth and the researcher is neutral from any impact on research findings (Al-Saadi, 2014).

3.2. Research Approach

“Research approach is plans and procedures for research that span the step from broad assumptions to detail methods of data collection, analysis and interpretation” (Cresswell, 2014, p.31). Qualitative, quantitative and mixed approaches are the three research approaches that researchers could select in conducting any inquiry (Cresswell, 2014).

3.2.1. Quantitative Research Approach

According to Creswell (2014), quantitative research is the systematic and scientific investigation of quantitative properties and phenomena and their relationship. Quantitative research approach aspires at testing theories, conforming facts, seeking cause and effect relationship between variables, and predicting outcomes (Deriba, 2018). According to Deriba (2018), surveying with closed-ended questionnaires is a common technique applied in this .quantitative research approach. Deriba (2018), also noted quantitative appoache involves the use of statistical methods to generalize findings.

Post positivism is the common research paradigm in quantitative study that rely on singular reality, objective, deductive reasoning (Cresswell, 2014).

3.2.2. Qualitative Research Approach

In qualitative research, the researcher collects data by asking questions that are more general and describes and analyzes these words for themes; and conducts the inquiry in a subjective, biased manner (McKerchar, 2010). This kind of research approach is more of exploratory in

nature (Deriba, 2018). Data collection methods like interviews, open-ended questionnaires, observations, and content analysis and focus groups discussions are employed in qualitative approaches (Cresswell, 2014).

Constructivism is a common research paradigm in qualitative approach that focus on multiple realities; biased judgments and inductive reasoning (Rehman & Alharthi, 2016)

However, the findings are not generalizable to the population because randomization and inferential statistics are not applicable for this approach (Deriba, 2018).

3.2.3. Mixed approach

A mixed approach combines both qualitative and quantitative elements in a single inquiry to understand the problem. This approach involves the collection and analysis of qualitative and quantitative data in a single study (Cameron, 2015; Cresswell, 2014). Techniques like interviews and questionnaires may be employed as a method of data collection technique in a single study (Cresswell, 2014).

The research paradigm for mixed approach is Pragmatism that focuses on multiple viewpoints, biased and unbiased judgments (Cresswell, 2008).

However, this approach of study may demand wider span of time to integrate both qualitative and quantitative aspects in the study (Cresswell, 2014).

3.2.4. Research Approach Adopted

Quantitative approach of study was employed in the current study. This approach is considered as the most valued approach of study (Deriba, 2018). Quantitative approach allow researchers to generalize findings to a large population because the data collection methods involves the use of randomized variables and employ inferential statistics (Deriba, 2018).

The current study focused on identifying determinant factors that influence taxpayers' voluntary compliance level. To achieve this objective, therefore, the quantitative approach of study was appropriate to address the stated research problems.

3.3. Research Design

Depending on the specific objectives of their inquiry, researchers should also select among the three researches types (Bhattacharjee, 2012). These are explanatory, exploratory and descriptive research types. The primary purpose of explanatory type of research is to

determine how an event occur and which ones may influence particular outcomes (Deriba, 2018).

The current study attempted to identify determinant factors that affect taxpayers' voluntary compliance level. Since explanatory studies explain the causative relationship between variables and employed in order to identify the extent and nature of relationship between variables (Saunders & Lewis, 2012), explanatory study was employed. According to Tilahun & Yidersal (2014), tax compliance determinants can be studied best by using quantitative data.

Researchers also need to select a design (procedures of inquiry) within each research approaches (Creswell, 2003). A research design is a strategy of investigation employed to get answers to research problems (Babikir & Abed Wahab, 2009). It is the overall strategy for data collection, measurement and data analysis (Kumar, 2019). In this study, a cross-sectional survey design that used quantitative research approach was employed.

3.3.1. Survey design

Studies on tax compliance issue rely on survey data in which taxpayers are asked to report their compliance behavior (Kirchler & Wah, 2010). Survey research has a number of advantages like measuring a wide variety of unobservable data, such as people's preferences traits, attitudes, beliefs and behaviors of respondents (Bhattacharjee, 2012). The rationale for considering this design was that, survey design is economical to cover large areas and it has better rapid turnaround in data collection.

In the current study dual-media surveys (i.e. Paper based and online survey), was implemented so as get the advantages of respective designs and to allow respondents to select their preferred method of response (Bhattacharjee, 2012).

3.3.2. Online Survey

Further, online surveys were conducted using Google Forms. Online survey is getting popular recently due to expansion of mobile phones and internet access across the globe (Andrews, Assistant, & Preece, 2003). The advancement of technology have brought new challenges in data collection instruments (Aborisade, 2013; Regmi et al., 2016). With the expansion of internet and social media platforms, various studies have reported that response rates in traditional survey methods are declining (Nayak & Narayan, 2019).

The Corona virus pandemic is no doubt affected the globe. This study was conducted during pandemic season. With self-quarantine and lockdown orders in effect across many areas, connectional survey designs found ineffective. It is also obvious that obtaining significant response rates with conventional paper base surveys is difficult during pandemic seasons and respondents were reluctant to receive paper due to fear of contamination. Therefore, in this study it was attempted to use online survey as the main data collection technique. However, no more than 10 percent respondents were responded using conventional questionnaire.

In online survey respondents fill the questionnaire forms online (Andrews et al., 2003). Conducting online survey demand some requirements such as: simplicity of items included, feasibility, appropriateness of online surveys for the target participants, being culturally and ethically sensitive, completeness and neutral (Nayak & Narayan, 2019). Nayak & Narayan concluded that adhering to this principles, online survey ensure methodological soundness.

Google Forms application was used to as a survey tool, which is designed to create forms for data collection purpose (Mondal, Ghosal, & Mondal, 2018). Questionnaires prepared in the Google Form were posted on sample respondents' account using different platforms such as Telegram. The Google Form link also sent through SMS to respondents. According to (Mondal et al., 2018) in Google Form all responses are gathered automatically into a Google Docs Spread sheet, which will appear in owners drive as an Excel Spread sheet, however, in order to secure privacy of respondents, IP addresses which were collected by the survey tool and any identifiers should be deleted from the downloaded data file.

The rationale for using Online survey as a major data collection method over traditional paper based was, in online survey, first, completing a questionnaire online may attract to the busy taxpayer, thus improving the response rate (Zhifeng Gao, 2013). Response rates from traditional surveys method is getting low because most people tend to ignore survey requests (Bhattacharjee, 2012). Second, the data reported by the respondents will be automatically stored in an online database and will become readily available for statistical analyses, thus minimizing both transcribing errors and time losses (Aborisade, 2013; Regmi et al., 2016). Third, online survey can be administered much less expensively and more quickly than a corresponding, paper based survey (Zhifeng Gao, 2013). Thus, the current study implemented online survey that is a pioneer study in tax compliance area in Ethiopia.

However, in online survey there is sampling bias if the survey cannot reach people that do not have Internet access and lack ability to complete such surveys online (Bhattacharjee, 2012).

In this study, to consider all respondents, paper based questionnaires were also administered for those respondents who have no technology accesses.

3.4. Participants of the Study

3.4.1. Target population

Federal Income tax proclamation No. 979/2016 classified the business income tax payers in to three major categories based on legal personality and annual gross income. These are category “A” “B” and “C” taxpayers. as per the Proclamation, Category “A” and “B” taxpayers are required to prepare financial statements as well as to keep proper book of account and assessed based on their financial statements. Therefore, the target population for this study was category “A” and “B” registered taxpayers in selected two Woredas and one city admin of Fafen Zone, including Mulla Woreda, Jijiga city administration and Ararso Woreda.

3.5. Sampling Design

Taking all members of the population is difficult due to time and cost considerations (Kothari, 2004). This lead to the selection of samples which are representative of the total population. Sampling enables the researcher to estimate unknown characteristics of the population and make generalizations about the population (Kothari, 2004)

Due to financial, time and travel constraints during the pandemic, selection of the study sites was done purposively. However, from purposively selected study sites, the ultimate samples were selected on random basis using stratified and simple random sampling techniques.

3.5.1. Sampling Processes and Sample Size Determination

This research targeted both Category “A” and “B” individual business taxpayers operating their business in Fafen zone specifically Jijiga city administration, Mulla Woreda, and Ararso Woreda. Based Revenue Department data, there were a total 1093 registered category “A” and “B” tax payers in in selected Woredas as of January 2021.

The ultimate sample respondents were determined using stratified and simple random sampling techniques. Stratified sampling was applied because the population was divided into two subgroups or strata based on the business category in which taxpayers belongs to. To reduce problem of sample selection bias proportionate stratification based on each stratum’s share of the total population was implemented. To determine the sample size from total taxpayers in the selected Woredas, mathematical formula suggested by Yemane (1967) and used by most tax compliance studies was employed.

$$n = \frac{N}{1+(0.05)^2*N} \dots \dots \dots \text{Equation 1}$$

Where:

n =corrected sample size,

N = population size,

1= 1 is constant,

0.05= margin of error.

$$\frac{1092}{1+(0.05)^2*1092} \approx 293$$

Accordingly, 293 samples were considered for this study. Pampel (2000) suggested sample size for logistic regression analysis not to be less than 100, otherwise the result will be misinforming.

Table 2: Determination of sample size from each category by applying formula

Sample cluster	Woredas	Population of each category	sample size calculation	sample size
category "A"	Jijiga city Ad.	269	=269/1092*293	72
	Mulla Woreda	170	=170/1092*293	46
	Ararso Wereda	93	=93/1092*293	25
category "B"	Jijiga city Ad.	179	=179/1092*293	48
	Mulla Woreda	181	=181/1092*293	49
	Ararso Wereda	200	=200/1092/293	54
Total		1093		293

Source: survey result (2022)

3.6. Data Collection Tools

Questionnaires were prepared both in English and Somali version. Somali language is the official language of the Region and it is medium of communication for the study area. Therefore, Somali version of the questionnaire were delivered to the respondents through direct delivery and through online by using different platforms, mainly via telegram.

The questionnaires employed in this study were adopted from previous similar studies like Falanni, (2015), Saad (2011) Wolela & Fjeldstad (2016), Augustine & Enyi, (2020) and Chattopadhyay & Das-Gupta (2002) with minor modification to suit with the Ethiopian situation.

Questionnaires were prepared in liker-type scale, a well-known scale for rating ordinal data (Bhattacharjee, 2012). In the Likert scale, respondents were asked to indicate the level of

agreement or disagreement on a five-point scale ranging from “strongly agree” to “strongly disagree. In order to avoid forced choice approach, which uses only agree or disagree by dropping the neutral mid-point, this study included neutral mid-point that provide opportunity to respondents to record neutral position.

Tax compliance is a sensitive issue that most taxpayers will be reluctant to declare their compliance status (Ali et al., 2013). However, in order to mitigate this problem the questionnaire were designed using closed ended type. In addition indirectly phrased questions were administered to avoid the implication of ‘wrongdoing’.

The data collected through online survey were downloaded directly from Google Forms to the researchers’ Drive in Excel Worksheet form. Then the data were managed through Statistical Package for Social Sciences (SPSS V-23) and processed using STATA version 14 and software.

3.7. Data Sources

Close-ended structured questionnaire were used for collecting primary data from the respondents. Pre-testing of questionnaire was conducted and the development of the final questionnaire was concluded by introducing necessary changes based on the findings of the pre-test.

Somali version of questionnaire was distributed online and through direct delivery method for 293 target samples. Out of 263 questionnaires distributed online, 240 responses were received. Whereas, 20 responses were received from directly delivered 30 questionnaires. This shows response rate of 91% and 67% for online and traditional survey respectively. This survey finding conforms Nayak & Narayan (2019) who pointed the declining trend of traditional survey response rates.

However, from responses received online, there were only 209 response were found complete. Thus in this study 229 responses were involved for the analysis as other cases are deleted for having missing information. This is again shows 78% valid response rate of targeted sample size, which was appropriate response rate for survey, studies (Ramshaw, 2017).

3.8. Data Collection Method

The researcher contacted directly in person with potential respondents to explain the purpose of the survey study, to inform participants about ethical clearance, and to assist how to fill online forms.

The survey consisted of 55 questions that were measured on a 5-point Likert scale. The aim was to conduct the survey with 293 individual taxpayers in Fafen Zone (one city admin and two Weredas). Because not all questionnaires were fully completed, 229 questionnaires were included in the analysis.

3.9. Method of Data Analysis

Before analysis, the data were prepared and checked for missing and completeness. The data were then managed through SPSS (version 23) and analysed using Stata (version 14) statistical software. Data were described using descriptive statistics such as cross tabulation, frequencies, percentage and analyzed through econometrics models.

In this study similar to Palil et al. (2013), voluntary tax compliance was categorized as low, medium and high compliance level. Given the scaled ranking information of the dependent variable, Ordinal Logistic Regression was applied. Hence, the categories of the outcome variable (voluntary tax compliance) have ordering nature. In ordinal scale the quantitative difference between adjacent categories are exactly not known (Cresswell, 2014)

3.10. Model Specification Procedures

3.10.1. Ordinal Logistic Regression Model

In logistic regression model, there are three models, namely, binary, multinomial and ordinal (Derr, 2013). According to Derr (2013) there are occasions when the scale of a multiple category outcome is not nominal but ordinal. In such a setting, according to Derr, one could use the multinomial logistic model. However, this would not take into account the ordinal nature of the outcome and hence the estimated odds ratios may not address the questions asked of the analysis (Hosmer & Lemeshow, 2000)

In the case of this investigation, as the outcome variable is ordered, level of voluntary tax compliance, Ordinal Logistic Regression Model was employed. Ordinal Logistic Regression entails the relationships between an ordered response variable and a set of predictor variables that can be continuous, discrete, dichotomous, or a mix of any of these. (Hosmer & Lemeshow, 2000)

Hosmer & Lemeshow (2000) pointed out that it is also possible to create ordinal variable via categorization of an underlying continuous variable. In this study, the ordinal outcome variable is taxpayers' voluntary compliance level, which is coded as 1, 2, or 3 (1 = low; 2 = medium; and 3 = high compliance level).

The ordinal regression analysis could be stated as a latent variable model (Agresti, 2010) In this study a latent variable, y^*_i assumed, which is $y_i = x\beta + \varepsilon$, where y_i is the exact but unobserved dependent variable; x is the vector of independent variables, and β is the vector of regression coefficients which the study wish to estimate.

There are three commonly used ordinal Logit models and Proportional Odds Model (POM) is easiest to apply or interpret (Ari & Yildiz, 2014).

1. Proportional Odds Model (POM),
2. Non-Proportional Odds Model (NPOM) and
3. Partial Proportional Odds Model (PPOM).

Because of its appealing features, the proportional odds model is the most popular one (Hosmer & Lemeshow, 2000). However, loosened models of NPOM and PPOM were considered if proportionality assumption is violated because Proportional Odds Model leads incorrect interpretations (Ari & Yildiz, 2014). Therefore, models that consider ordinal structure were used for this purpose.

3.10.2. Proportional Odds Model

The Proportional Odds Model assumes the cumulative logits across each response category to represent parallel linear functions of predictor variables (Hosmer & Lemeshow, 2000) The proportional odds model is an Ordinal logistic Regression model in which we compare the probability of an equal or smaller response, $Y \leq D$, to the probability of a larger response, $Y > D$, for $i = 1, 2, \dots, i-1$. (Agresti, 2010).

Let an ordinal outcome variable D has D categories ($D = 0, 1, 2, \dots, G - 1$), then there will be $G-1$ ways to dichotomize the outcome:

$(D \geq 1 \text{ vs. } D < 1; D \geq 2 \text{ vs. } D < 2, \dots, D \geq G-1 \text{ vs. } D < G - 1)$. ---- Equation 2

The dichotomize of D , the odds that $D < g-1$ is equal to the probability of $D \geq g$ divided by the probability of $D < g$,

Where, ($g = 1, 2, 3, \dots, G - 1$).

$$\text{Then odds}(D \geq g) = \frac{P(D \geq g)}{P(D < g)} \text{-----Equation 3}$$

Where $g = 1, 2, 3, \dots, G - 1$

The model with k independent variables is then shown as:

$$\text{Odds}(D \geq g) = \frac{P(D \geq g|x)}{P(D < g|x)} \text{-----Equation 4}$$

$$\text{Odds} = \frac{P(D \geq 2|x)}{P(D < 2|x)} = \exp(\alpha_2 + \beta_1 x_1 + \beta_2 x_2) \text{-----Equation 5}$$

$$\text{Odds} = \frac{P(D \geq 1|x)}{P(D < 1|x)} = \exp(\alpha_1 + \beta_1 x_1 + \beta_2 x_2) \text{-----Equation 6}$$

$$\text{Where, odds} = \text{prob. event} / (1 - \text{prob. no event}) = p / (1 - p) \text{-----Equation 7}$$

The most widely employed proportional odds model is:

$$Y_i = x_i \beta + \epsilon \text{-----Equation 8}$$

However, since the dependent variable is categorized, we must instead use:

$$\ln \frac{\sum pr(D \leq g|x)}{1 - \sum pr(D \leq g|x)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_g X_g + \epsilon \text{-----Equation 9}$$

$$\ln \frac{\sum pr(event)}{1 - \sum pr(event)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_g X_g + \epsilon \text{-----Equation 10}$$

$$\ln \frac{\sum pr(D \leq g|x)}{1 - \sum pr(D \leq g|x)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_g X_g + \epsilon \text{-----Equation 11}$$

Where, β_0 is the cut points

β_1, β_2 and β_n are the coefficients for the respective set of predictors X_1, X_2 and X_n

The coefficients measure the change in the ratio of the probabilities. Using this basic model, the following short form of ordinal Logit model is presented.

$$\ln \left[\frac{P(D \geq g|x)}{P(D < g|x)} \right] = \ln \left[\frac{\text{prob}_{\text{voluntary compliance}}}{(1 - \text{prob}_{\text{voluntary compliance}})} \right] =$$

$$\beta_g + \beta_1 \text{CORRUPTION}$$

$$+ \beta_2 \text{COMPLEXITY}$$

$$+ \beta_3 \text{COST}$$

$$+ \beta_4 \text{KNOWLEDGE}$$

$$+ \beta_5 \text{FAIRNESS} + \epsilon \text{-----Equation 12}$$

Where:

$g = 1,2$

Voluntary compliance= compliance level coded as 1=low level of voluntary compliance, 2=medium level of voluntary compliance, 3=high level of voluntary compliance

1. CORRUPTION = measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the CORRUPTION; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree
2. COMPLEXITY= measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the COMPLEXITY; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree
3. COST= measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the COST; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree
4. KNOWLEDGE= measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the KNOWLEDGE; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree
5. FAIRNESS= measured by a 5 Likert-type scales: coded as 1 if the respondent disagrees with the FAIRNESS; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree.

3.10.3. Odds Ratio.

In Cumulative Logit Model, odds ratios are calculated to find cumulative probabilities (Ari & Yildiz, 2014). Ari & Yildiz (2014) discussed Odds ratio as a value that indicates the strength of association between each explanatory variable in the model and the response variable. Odds of an event happening is also defined as the ratio of the probability of occurrence of the event to that of non-occurrence and an odds of less than one indicates the occurrence of an event is less likely as compared to non-occurrence, controlling for all other predictors (Williams, 2020). The odd of the event E is given by:

$$odds(E) = \frac{pr(E)}{pr(notE)} = \frac{pr(E)}{1-pr(E)} \text{ -- Equation 13}$$

3.11. Reliability and Validity Test

Questionnaires are commonly employed in research to obtain relevant, reliable and valid information (Taherdoost, 2016). Thus, the accuracy and consistency of questionnaire are a critical part of research methodology, which are known as validity and reliability (Taherdoost, 2016). Reliability is the degree to which a research instruments are produce

stable and consistence results (Bhattacharjee, 2012). It is about obtaining the same answer using the same instruments more than once (Kothari, 2004). For this study Cronbach's alpha was used to assess the internal consistency of variables in the research instrument.

On the other hand, validity is related to the extent to which a test measures what a researcher actually wishes to do (Deriba, 2018). It refers to how well a test measures what it is purported to measure (Kothari, 2004)

The reliability and validity of the questionnaires adopted and modified were tested through pilot study. Instruments were distributed to 20 randomly selected respondents before final questionnaires were administered. Then, to test the reliability level of the questionnaire, a Cronbach's alpha coefficient was calculated.

3.12. Variables Description

Table 3: Variables Descriptions

Variable	Symbol	Unit of measurement	Expected sign
Dependent variable	COMPLIANCE	(1-3) ordinal	
<ul style="list-style-type: none"> Level of voluntary compliance 			
Independent variables			
<ul style="list-style-type: none"> Perception of Corruption 	CORRUPTION	(1-5 Likert Scale) ordinal	- (High corruption, low voluntary compliance level)
<ul style="list-style-type: none"> Complexity of tax system 	COMPLEXITY	(1-5 Likert Scale) ordinal	- (high complexity, low compliance)
<ul style="list-style-type: none"> Tax knowledge 	KNOWLEDGE	(1-5 Likert Scale) ordinal	+ (high tax knowledge, high compliance)
<ul style="list-style-type: none"> Compliance cost 	COST	(1-5 Likert Scale) ordinal	- (high compliance cost, low compliance)

- **Fairness and equity Perception** FAIRNESS (1-5 Likert Scale) ordinal + (good perception, high compliance)

3.13. Ethical Consideration

In undertaking any research endeavor in human subjects, it is important to engage in ethical practices and anticipate what ethical issues will likely occur (Cresswell, 2014). In the current study, preliminary consent was achieved with every respondent before administering the questionnaires.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1. Introduction

In this study, five determinants were analyzed whether they are significant determinants of voluntary tax compliance or not. These were perception of corruption, perception complexity of tax system, tax knowledge, cost of compliance and perception of fairness and equity.

This chapter covers the following sub sections: The first section covers the results of the study. In this section descriptive and econometric analysis are discussed. The second section covers discussions and implications of the study.

4.2. Results

4.2.1. Descriptive statistics

4.2.1.1. Respondents General Background

This section describes respondents' general information such as gender, age, educational level, business sector, and business category and business experience of the respondents.

Table 4: Respondents Demographic Data

Item	Demographic business Characteristics		Freq.	Percent
1	Gender	Female	77	33.62
		Male	152	66.38
2	Age	Below 21	4	1.75
		21-30	30	13.10
		31-40	85	37.12
		41-50	75	32.75
		Over 51	35	15.28
4	Educational level	Can't read write	5	2.18
		Grade 10/12 incomplete	58	25.33
		Grade 10/12 Complete	75	32.75
		Diploma	50	21.83
	Degree	41	17.90	

Source: Survey result (2022)

For this study gender, age and education distribution of respondents are summarized in Table 5 Item 1 shows that there were more male respondents (66.82%) than female respondents (34.18%) for the current study.

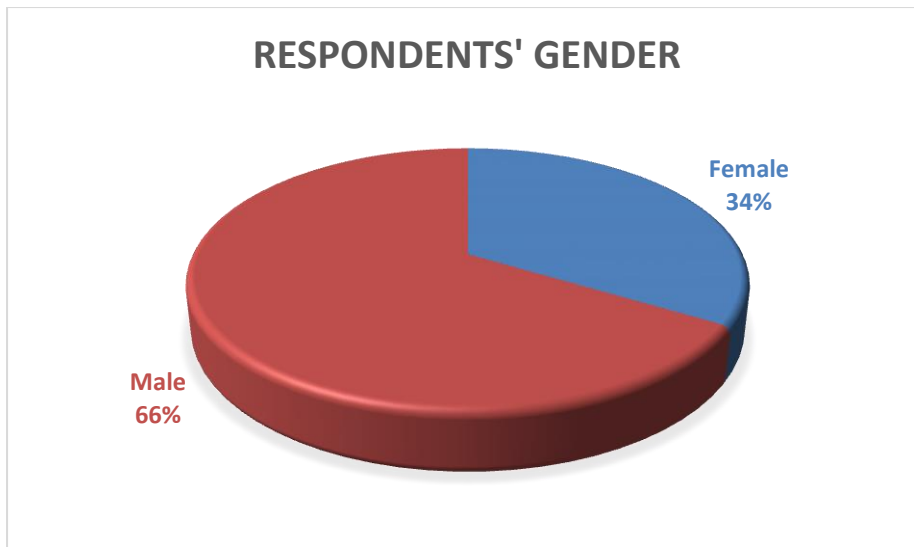


Figure 2: Respondents' gender

Source: Survey result (2022)

Similarly, age of the respondents was classified in to five age groups as indicated in Table 5. The age distribution of the respondent was below 21 (1.75%), 21-30 (13%), 31-40 (37.12%), 41-50 (32.75%), and 51 and above (15.28%) years of old. This shows that majority of respondents were at the range of 31-40 (37.12%), years of age.

The respondents' maximum level of education they attained were categorized in to four categories in item 4 in Table 4. It shows, out of the total respondents 32.75%, had completed grade 10/12. Whereas, 25.33% of respondents were not completed grade 10/12. In this study, 21.83% and 17.90 of respondents were held college diploma and degree respectively. No respondents were found holding master or above educational level. Therefore, the findings indicate that the majority of business taxpayers were not achieved better higher educated level.

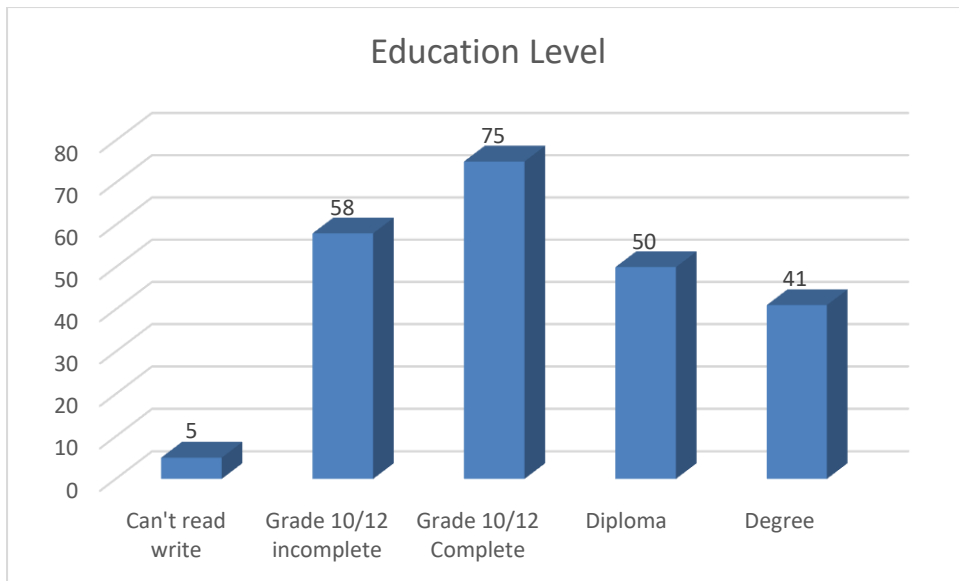


Figure 3: Educational Level of Respondents

Source: survey result (2022)

4.2.1.2. Business characteristics

The Figure 5 shows the distribution of respondents' business sectors. It shows that 109 (45.60%) of the respondents were operating in general merchandizing and trade, 76 (33.19%) were employed in service sectors and the remaining 28(12.23%) and 10 (4.37%) are engaged in construction and manufacturing sectors respectively. This shows that the majority of category "A" and "B" businesses in Fafen zone are engaged in merchandizing and trade businesses.

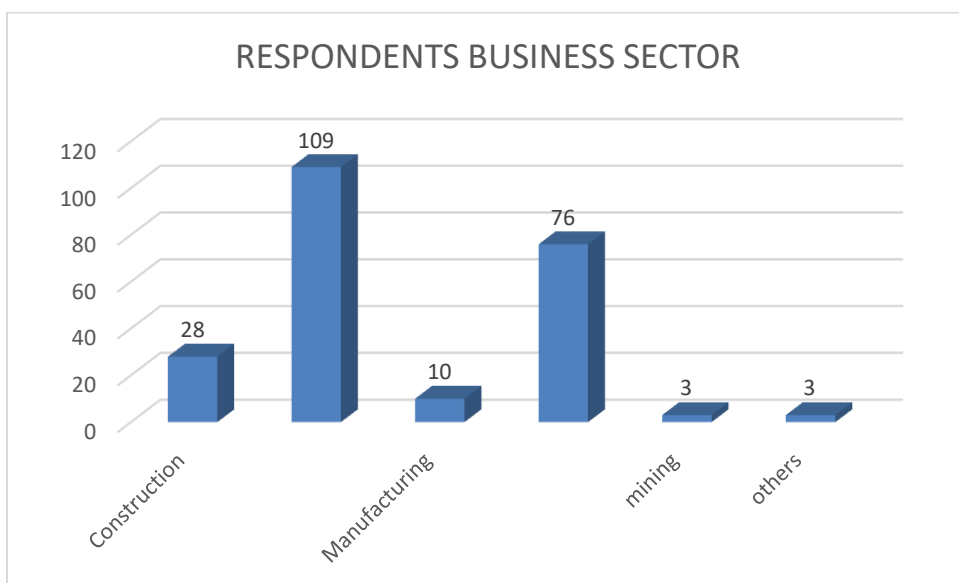


Figure 4: Respondents' Business Sector

Source: Survey result (2022)

4.2.1.3. Tax Category of Respondents

The chart Figure 6 shows category “A” business constituted 40.61% of the respondents while the rest is category “B” which comprises 59.39 percent.

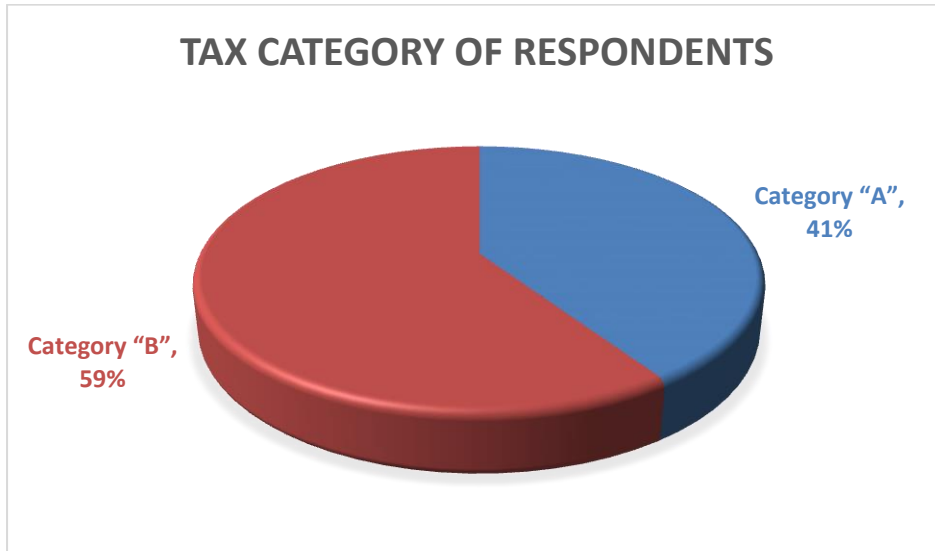


Figure 5: Tax Category of Respondents

Source: Survey result (2022)

4.2.1.4. Business Experience of Respondents

Respondents are also grouped in to four based on the number of years they have been in business. As depicted in the Figure 7, majority of the respondents, 41.48% were characterized by doing business for years 6-10. On the other hand, 35.81% respondents were characterized by doing business for about more than 10 years. While the respondents comprising of 20.96% and 1.75 % have 1-5 years, less than one-year business experience respectively. This shows most respondents business experience was at 6-10 years.

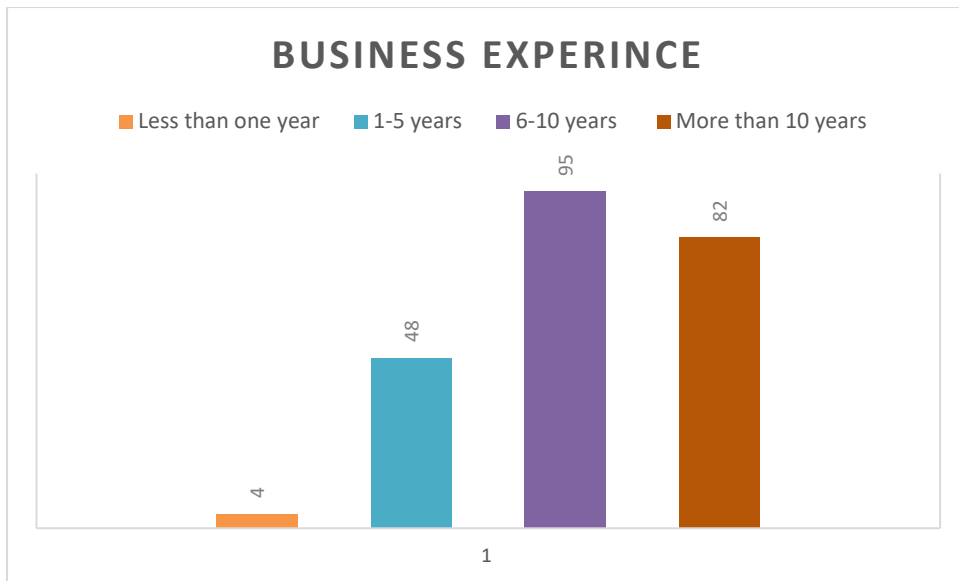


Figure 6: Business experience of taxpayers

Source: survey result (2022)

4.2.1.5. Descriptive Analysis of voluntary Tax Compliance and Determinants.

This section provides descriptive analysis of the variables of the study. These include voluntary tax compliance, corruption, complexity of the tax system, tax knowledge, cost of compliance and perception of fairness and equity.

As discussed earlier, tax compliance is a sensitive issue that most taxpayers tend to be reluctant to state their actual compliance status (Ali et al., 2013). In this study both indirect questions and hypothetical scenarios were administered so as get genuine data. The use of hypothetical questions can increase reliability of results and minimizes respondents' dishonesty when answering the questionnaire related to sensitive issues (Falanni, 2015). In this study non-compliance scenario developed by Falanni (2015) was used. Indirectly phrased questions adopted from Wolela & Fjeldstad (2016) were employed in the current study so as get true none compliance behavior, as questions were implicitly include respondents themselves.

4.2.1.6. Hypothetical Tax Noncompliance Scenarios

Tax noncompliance scenario related to none reporting of total income and under-reporting of partial income were presented to the sample respondents. In the case, the respondents were expected to rate each hypothetical scenarios as a taxpayer and what actions they would undertake if they face the same situation. The level of agreement with none reporting of total income and under-reporting of income was measured through a five-point Likert scale 1(strongly Agree) to 5 (Strongly disagree)

Hypothetical Tax Noncompliance Scenario adopted from Falanni (2015) was employed in this study. This scenario was modified to suit with Ethiopian situation. Respondents were requested to read and responded the following tax compliance scenario according to the scale given.

Mr. SAEED, a self-employed businessman is considering not disclosing a cash sale of ETB 100,000 as business income in his 2018/19 tax return. Legally, the cash receipts of ETB 100, 000 should be included as a business income. However, he is almost certain that the tax authority will not audit him and would not know if the amount is not disclosed.

Respondents were asked about “To what extent do you agree with Mr. SAEED’s possible action of not reporting that cash sale of ETB 100, 000 as his business income?” and “To what extent do you agree with Mr. SAEED’s possible action if he reports only part of the ETB 100,000 as business income?”

Table 5: Tax None Reporting Scenario 1

To what extent do you agree with Mr. SAEED’s possible action of not reporting that cash sale of ETB 100, 000 as his business income?						
COMPLIANCE	Strongly disagree	Disagree	Neutral	agree	Strongly agree	Total
LOW	27	28	0	3	0	58
MEDIUM	60	53	1	1	4	119
HIGH	35	17	0	0	0	52
Total	122	98	1	4	4	229
Percent	53.28	42.79	0.44	1.75	1.75	100

Source: survey result (2022)

As shown in Table 6, 53.28% and 42.79 respondents responded strongly disagrees and disagree with income none reporting scenarios respectively. Moreover, the rest responses, (agree, neutral and strongly agree) constitute only 3.93 %. This shows that more than 96% of respondents showed compliant behavior with this scenario.

Table 6: Tax under reporting scenario 2

To what extent do you agree with Mr. SAEED’s possible action if he reports only part of the ETB 100,000 as business income?						
COMPLIANCE	strongly	Disagree	Neutral	Agree	Strongly	Total

	disagree				agree	
LOW	31	25	2	0	0	58
MEDIUM	60	54	2	1	2	119
HIGH	35	17	0	0	0	52
Total	126	96	4	1	2	229
Percent	55.02	41.92	1.75	0.44	0.87	total

Source: survey result (2022)

Similarly, as shown Table 7, 55% and 41.92% respondents responded strongly disagree and disagree with income under reporting scenarios respectively. Moreover, the rest responses, (agree, neutral and strongly agree) constitute only 3.6%.

4.2.1.7. Tax compliance Level

To measure the voluntary tax compliance level of sample respondents indirectly phrased questions adopted from Wolela & Fjeldstad (2016) were administered. These are: “How frequently do you think taxpayers evade taxes?”, “How frequently do you think taxpayers under report their income?”, “How frequently do you think taxpayers overstate their deductible expenses? And “How frequently do you think taxpayers submit their declaration late?” implying themselves. Similar to Palil, Akir, & Ahmad (2013), mean score of responses tested in this study were divided into three categories as follows: four indirect questions adopted from

1.00 to 2.25 = Low voluntary compliance

2.26 to 3.75 = Medium voluntary compliance

3.76 to 5.00 = High voluntary compliance

As can be seen from the Figure 8, about 22.71 % of respondents were high compliant, 51.97 % were medium complaint and the rest 25.33 % were low compliant. The result indicates that most of Fafen Zone tax payers’ voluntary tax compliance level was medium and low during the time of these study.

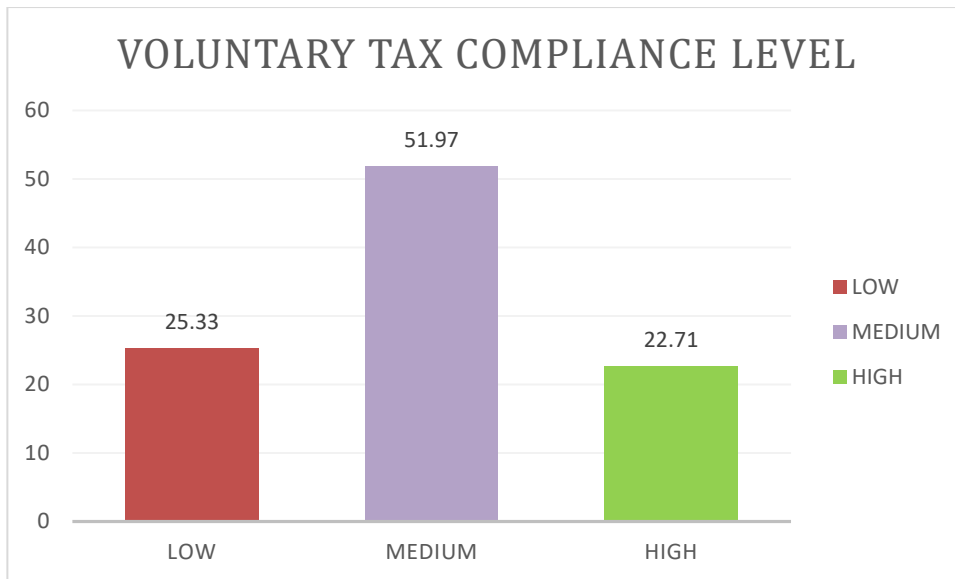


Figure 7: Voluntary Tax Compliance Level.

Source: survey result (2022)

4.2.1.8. Descriptive Statistics of Variables

A five-point Likert-type scale, with values ranging from 1 (strongly disagree) to 5 (strongly agree), were used to measure all explanatory variables. Tax knowledge and tax fairness and equity items were scaled in the way that a higher number reflects a higher tax knowledge and fairer perception, respectively, whilst, corruption, tax complexity and cost of compliance were scaled in the way that a higher number corresponds to a higher corruption, high level of tax complexity and high cost of compliance respectively. Predicted variable are described as follow:

1. CORRUPTION = measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the CORRUPTION; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree.
2. COMPLEXITY= measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the COMPLEXITY; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree
3. COST= measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the COST; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree
4. KNOWLEDGE= measured by a 5 Likert-type scales: coded as 1 if the respondent strongly disagrees with the KNOWLEDGE; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree.
5. FAIRNESS= measured by a 5 Likert-type scales: coded as 1 if the respondent disagrees with the FAIRNESS; 2 if disagree; 3 if neutral, 4 if agree and 5 if strongly agree.

Table 7: Descriptive Statistics for Demographic and Business Characteristic

Item	Variable	Response category	Voluntary compliance level						Total	
			Low		Medium		High			
			Fre q.	%	Fre q.	%	Fre q.	%	freq.	%
1	Gender	Female	26	34%	37	48%	14	18%	77	34%
		Male	32	19%	82	50%	38	31%	169	66%
	Age	below 21	1	25%	3	75%	0	0%	4	2%
		21-30	6	20%	19	63%	5	17%	30	13%
		31-40	25	29%	40	47%	20	24%	85	37%
		41-50	17	23%	40	53%	18	24%	75	33%
		Over 50	9	26%	17	49%	9	26%	35	15%
2	Education	Can't read & write	1	20%	3	60%	1	20%	5	2%
		Grade 10/12 incomplete	16	28%	30	52%	12	21%	58	25%
		Grade 10/12 complete	16	21%	38	51%	21	28%	75	33%
		Diploma	12	24%	29	58%	9	18%	50	22%
		Degree	13	32%	19	46%	9	22%	41	18%
3	Business category	Category "A"	28	30%	44	47%	21	23%	93	41%
		Category "B"	30	22%	75	55%	31	23%	136	59%

Source: survey result (2022)

Table 8 shows the percentage of demographic, business experience and business category characteristics in relation for each level of voluntary compliance.

From the total number of female respondents (77), 18% were found at high tax compliance level in the current study, and 48% and 34% of female respondents were medium and low compliant respectively. Similarly, from the total number of male respondents 25% were found high compliant, while, 54% and 25% of male respondents were medium low compliant respectively. As can be seen from the Table 8, about 24% of respondents from age group 31-40, were high compliant, 47 % were medium and the rest 29% were found low complaint.

Education level and voluntary compliance also described in the Table 8. From respondents who had completed grade 10/12, 28% of them were high compliant, whereas 51% and 16% respondents were medium and low complaints respectively.

From the Table 8, it is also possible to see the description of taxpayers' tax category and compliance level. Accordingly, 23% of category "A" respondents were high compliant in this study. While, 47% and 30% category "A" respondents were also found at medium and low voluntary compliance level. Similarly, 23% of category "B" respondents were found at high compliant level. The remaining 55% and 22% respondents were also found medium and low level complaints. This shows, from category "A" category "B" respondents most of them were found at medium compliance level.

Table 8: Descriptive Statistics for Variables with Compliance Level

Item	Variable	Response category	Voluntary compliance level						Total	
			Low		Medium		High		freq.	%
			Freq.	%	Freq.	%	Freq.	%		
4	Corruption	Strongly disagree	12	11%	61	58%	32	30%	105	46%
		Disagree	15	25%	32	54%	12	20%	59	26%
		Neutral	8	32%	14	56%	3	12%	25	11%
		Agree	9	47%	7	37%	3	16%	19	8%
		Strongly agree	14	67%	5	24%	2	10%	21	9%
5	Complexity	Strongly disagree	4	6%	34	52%	28	42%	66	29%
		Disagree	15	30%	28	56%	7	14%	50	22%
		Neutral	18	28%	37	58%	9	14%	64	28%
		Agree	17	46%	14	38%	6	16%	37	16%
		Strongly agree	4	33%	6	50%	2	17%	12	5%
6	Knowledge	Strongly disagree	14	35%	21	53%	5	13%	40	17%
		disagree	28	31%	53	58%	10	11%	91	40%
		Neutral	8	15%	26	48%	20	37%	54	24%
		Agree	4	22%	7	39%	7	39%	18	8%
		Strongly agree	4	15%	12	46%	10	38%	26	11%
7	Cost of compliance	Strongly disagree	4	15%	8	30%	15	56%	27	12%
		disagree	3	10%	22	73%	5	17%	30	13%
		Neutral	4	18%	15	68%	3	14%	22	10%
		Agree	14	24%	35	59%	10	17%	59	26%

		Strongly agree	33	36%	39	43%	19	21%	91	40%
8	Fairness and equity	Strongly disagree	17	45%	13	34%	8	21%	38	17%
		disagree	18	24%	47	64%	9	12%	74	32%
		Neutral	11	19%	33	58%	13	23%	57	25%
		Agree	5	15%	17	50%	12	35%	34	15%
		Strongly agree	7	27%	9	35%	10	38%	26	11%

Source: survey result (2022)

4.2.2. Ordinal Logistic Regression Analysis

Ordinal Logistic Regression is effective model to describe the effect of independent variables on a categorical response variable (Josephat & Ismail, 2012). Due to the order nature of the response variable, the current study employed the Ordinal Logistic Regression. The rationale for using Ordinal Logistic Regression for this study was that the dependent variable of the study, voluntary tax compliance, is a categorical and ordered variable. The dependent variable, voluntary tax compliance has three ranked levels - *low, medium and high voluntary tax compliance levels*.

4.2.3.1. Assumptions of Ordinal Logistic Regression

Assumptions related to linear regression, like linearity of relationship between the dependent and independent variables, normality of the error distribution, homoscedasticity of the errors, and measurement level of the independent variables are not applicable in Logistic Regression (Park, 2013).

1. Assumption of Ordered Dependent and Independent Variable

In Ordinal Logistic Regression Model there should be at least three orders in the response variable and at some ordinal explanatory variable (Hosmer & Lemeshow, 2000; Agresti, 2010). The dependent variable in this study, voluntary tax compliance is ordered variable; this assumptions of ordinal regression method have been already met. In the current study determinant factors for voluntary compliance level are also ordinal in nature.

2. Assumptions of Parallel Regression

The Parallel Regression assumption is one of the most important assumptions in ordered logistic regression analysis that underlies the relationship between each pair of outcome groups is the same across all response categories (Liu, 2009; Schreiber-Gregory, 2018). A significant test statistics indicates the proportional odds assumption is violated (Liu, 2009;

Schreiber-Gregory, 2018). In the current study, this important assumption was checked as follow:

Table 9: Brant Test of Parallel Regression Assumption

Variable	chi2	p>chi2	Df
All	8.47	0.132	5
CORRUPTION	3.38	0.066	1
COMPLEXITY	1.19	0.275	1
KNOWLEDGE	3.51	0.061	1
COST	0.02	0.892	1
FAIRNESS	0.88	0.349	1

- A significant test statistic provides evidence that the parallel regression assumption has been violated.

Source: stata 14 Extract (2022)

Testing the assumption of proportionality

Let, H_0 : assumption holds

Therefore, inferring from the table (Table 10), there is no enough evidence to reject the null hypothesis for general model.

Decision: fail to reject the null

This assumption fundamentally means that the relationship between each pair of outcome groups has to be the same (Ari & Yildiz, 2014). In this study, there is only one set of coefficients (only one model) exists. The model assumes identical effect of explanatory variables for every “cutpoints” (Agresti, 2010). Thus, the coefficients (other than the constants) should be the same for each logistic regression, i.e. the regression lines will be parallel, differing only in their intercepts (Agresti, 2010).

This test is also an important test to check the validity of models (Ari & Yildiz, 2014). Thus, this model, Proportional Odds Model, is the valid model for the current study.

4.2.3.2. Model Fitting Information

Before employing the model, it was convenient to find out if the model gives adequate predictions. There are various ways to check the fitness of the ordinal logistic regression model. For example, a chi-square test is used to show how well the Ordinal Logistic Regression model fits the data (Josephat & Ismail, 2012; Liu, 2009). As suggested by Liu (2009), the log likelihood ratio Chi-

Square test, LR $\chi^2(5) = 232.75$, $p = 0.000$, indicates the full model with five predictor provided a better fit than the null model with no independent variables in predicting cumulative probability for voluntary tax compliance.

In the current study the model chi-square is 232.75 with a P-value of 0.000 tells that the model as a whole is statistically significant. Which means that all explanatory variables have a significant effect on the voluntary compliance level of respondents. All independent variables together are significantly affect the dependent variable which is represented by Prob>chi2 which is less than 1% and concluded that all independent variables together are determinant factors.

4.2.3.3. Chi-Square Test of Association

To determine whether the association between the response and each independent variables are statistically significant, the p-value is compared to the significance level to assess the null hypothesis.

Ho: No association between the independent variable and the response.

Table 10: Chi-Square Test Statistics

Variables	Pearson Chi-Square	Df	Sig
Corruption* compliance	159.4116	8	0.000
Complexity * compliance	120.2577	8	0.000
Knowledge * compliance	69.4793	8	0.000
Cost * compliance	59.5867	8	0.000
fairness * compliance	62.3298	8	0.000

Source: stata 14 Extract (2022)

Hence, in the current study, since the P-value $< \alpha$, for all predictor variable, it can be concluded the association is statistically significant

Table 11 shows that compliance levels of respondents have a significant association with perception of corruption, Complexity of the tax system, Knowledge tax payer, cost of compliance and Perception of fairness and equity. The full model with five predictor provided a better fit than the null model with no independent variables in predicting cumulative probability for voluntary compliance level.

4.2.3.4. Goodness of Fit Measures

The coefficient of determination, R^2 , in the linear regression model summarizes the proportion of variance in the dependent variable associated with the independent variables, with higher values showing that more of the variation is explained by the model (Elamir & Sadeq, 2010). However, in Ordinal Regression Model with ordinal dependent variable, it is not possible to calculate a single R^2 statistic that has similar characteristics of R^2 in the Linear Regression Model (Elamir & Sadeq, 2010). There is no exact analog of the R-squared found in OLS for Ordinal Logistic Regression (Hemmer, Schons, Wieseke, & Schimmelpfennig, 2018). Instead, Log-likelihood-based pseudo- R^2 s is

calculated. However, unlike ordinary least square- R^2 do not represent the proportion of explained variance, but rather the improvement in model likelihood over a null (Adeleke & Adepoju, 2010)

Pseudo- R^2 s in Logistic Regression Model value always ranges between zero and one (Hemmert et al., 2018). McFadden (1979, as cited by Hemmert et al., 2018), has recommended values between 0.2 to 0.4 indicate good model fit and values beyond 0.4 indicate excellent fit. In this study, McFadden's Pseudo- R^2 value of 0.52 implies the model is excellent fit the data.

Pseudo- R^2 s is interpreted as a measure of improvement over the null model and give an indication of goodness of fit (Hemmert et al., 2018). Pseudo R-square with a value of 0.52 implies that about 52.3% of the changes in tax voluntary compliance attitude could be explained by explanatory variables. Which indicates also, all independent variables have the power to explain the dependent variable that shows a good fit model.

Ordinal Logistic Analysis of Determinants of Voluntary Tax Compliance

Out of 260 respondents about 229 were involved in modeling as other cases are discarded for having missing information. This is 78% of targeted sample size, which was appropriate size to run logistic analysis.

Table 11 : Parameter Estimates Stating the Odds Ratio

Ordinal Logistic Regression		Number of obs. = 229					
	LR chi2(20)	=	246.72				
	Prob > chi2	=	0.0000				
	Log likelihood = -111.27557		Pseudo R2	=	0.5258		
COMPLIANCE	Odds Ratio	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]	
CORRUPTION							
Disagree	0.099873	-2.30386	0.05291	-4.35	0.000	0.035359	0.282094
Neutral	0.049968	-2.99637	0.033059	-4.53	0.000	0.013663	0.182748
Agree	0.017975	-4.01876	0.013819	-5.23	0.000	0.003984	0.081103
Strongly agree	0.002569	-5.96419	0.002086	-7.35	0.000	0.000523	0.012611
COMPLEXITY							
Disagree	0.158278	-1.8434	0.087712	-3.33	0.001	0.053421	0.468951
Neutral	0.132239	-2.02315	0.070215	-3.81	0.000	0.046709	0.374387
Agree	0.031775	-3.44909	0.024493	-4.47	0.000	0.007014	0.143953
Strongly agree	0.009605	-4.64552	0.007862	-5.68	0.000	0.001931	0.047781
KNOWLEDGE							
Disagree	1.864136	0.622798	1.030082	1.13	0.260	0.631134	5.505967
Neutral	5.346965	1.676529	3.312111	2.71	0.007	1.587966	18.00419
Agree	9.682875	2.270359	6.917752	3.18	0.001	2.387147	39.27621
Strongly agree	6.826113	1.920755	4.450941	2.95	0.003	1.901738	24.5017
COST							

Disagree	0.231075	-1.46501	0.185377	-1.83	0.068	0.047961	1.113316
Neutral	0.322912	-1.13038	0.27331	-1.34	0.182	0.061466	1.696422
Agree	0.191754	-1.65154	0.134672	-2.35	0.019	0.048409	0.759556
Strongly agree	0.151488	-1.88725	0.104325	-2.74	0.006	0.039281	0.584218
FAIRNESS							
Disagree	2.069609	0.72736	1.121659	1.34	0.180	0.715427	5.987028
Neutral	4.460608	1.495285	2.64462	2.52	0.012	1.395503	14.25795
Agree	5.530606	1.710297	3.750979	2.52	0.012	1.463757	20.89664
Strongly agree	6.260904	1.834325	4.616798	2.49	0.013	1.475571	26.56526
/cut1	-6.06529	-6.06529	1.072216			-8.16679	-3.96378
/cut2	-0.30938	-0.30938	0.879339			-2.03285	1.414095

Source: Stata 14 Extract (2022)

Cutpoints are intercepts of the Ordinal Logistic Regression. These cutpoints are represent the threshold and not used in the interpretation of the analysis (Lee, 2019). Two cutpoints show in the in the Table 12 shows where the latent variable is cut to make the three groups (in the current study, high, medium and low voluntary compliance level) (Williams, 2020).

The positive odds ratio in explanatory variables indicates that the likelihood of positive relationship with response variable. On the other hand, negative odds ratios indicate the likelihood of having a negative relationship between variables (Williams, 2020). A positive sign of the logit coefficient for ordinal, independent variables indicates that it is more likely for the group ($x = 1$) to be at or beyond a particular category than for the relative group ($x = 0$) and for continuous predictors, when the value of the predictor variable increases, the probability of being at or beyond a particular category increases. (Liu, 2009)

In this analysis, predictor variable responses “Strongly disagree” were considered as reference points and alpha =0.05 significant level, was set for the analysis.

Perception of Corruption

H1: Perception of corruption has a negative and significant impact on voluntary tax compliance level of taxpayers.

The P-value of all response categories as seen in Table 12 (disagree, neutral, agree and strongly agree) in corruption perception were below alpha value 0.05, which is significant and satisfied interpreting the odds ratio. In addition, all odds ratio in corruption were less than one implying a negative relationship with the dependent variable (Williams, 2020).

As shown in Table 12, the odds ratio of strongly agree responses was 0.002569 (P-value 0.000), which indicates respondents who responded strongly agree with the presence of perception of corruption were 0.002569 times less likely to be high compliant than respondents who responded

strongly disagree, controlling for other variables were held constant in the model. In other words, strongly agree response for corruption decreased voluntary tax compliance by 0.002569 to lower level of compliance.

Similarly respondents who agreed with presence perception corruption (odds ratio 0.017975, P-value 0.000) were 0.017975 times less likely to be high compliant than strongly disagree respondents, holding other factors constant. Additionally, respondent who responded neutral and disagree in the presence of corruption were 0.049968 and 0.099873 times less likely to be high compliant than strongly disagree respondents, controlling for other variables were held constant in the model.

Accordingly, as respondents' agreement level increase with the presence of corruption, their voluntary compliance level is likely low.

Therefore, the ordered logistic regression estimates revealed that perception of corruption found to have a significant and negative influence on voluntary tax compliance level at the time of this study. These establishes hypothesis one (H1) that corruption has a negative and significant effect on voluntary tax compliance level of taxpayers.

Complexity of Tax System

H2: Complexity of the tax system has a negative and significant effect on voluntary tax compliance level.

The P-value of response categories (strongly agree, agree, neutral and disagree) in complexity is below alpha value 0.05 which is significant and satisfied interpreting the odds ratio of these responses. Here, all odds ratio values in the complexity are less than one, which implied tax system complexity has a negative relationship with the voluntary tax compliance level.

As depicted in Table 12, the Ordered Logistic Regression estimates revealed that, the odds ratio of strongly agree response was 0.009605 (P-value, 0.000). This indicates respondents who responded strongly agree with presence of complexity in the tax system were 0.009605 times less likely to be high compliant than respondents who responded strongly disagree for complexity, controlling for other variables were held constant in the model. Similarly, respondents who responded agree with complexity of tax system (odds ratio of 0.031775, p-value 0.000) were 0.031775 times less likely to be high compliant than strongly disagree respondents, holding other factors constant. Additionally, respondent who responded neutral and disagree complexity of the tax system were 0.132239 and 0.158278 times less likely to be high compliant than strongly disagree respondents respectively, controlling for other variables were held constant. This shows that respondents are less likely high compliant as they agree more with the presence of complexity in the tax system.

The above discussion builds hypothesis two (H2) that tax complexity affects voluntary tax compliance level significantly and negatively. The result indicates a significant and negative effect of tax complexity on voluntary tax compliance level.

Tax Knowledge

H3: Tax knowledge has a positive and significant effect on voluntary tax compliance.

The Ordinal Logistic Regression analysis result depicted that the P-value of tax knowledge responses (strongly agree, agree, and neutral) are less than alpha value 0.05, (there is at least three response that is statistically significant) which showed the odds ratios of each response are also statistically significant. The odds ratio of tax knowledge greater than one implied a positive relationship with the voluntary tax compliance level.

Table 12 shows that the odds ratio of strongly agree responses for having tax knowledge was 6.826113 (with P-value 0.003). This implies that respondents who replied strongly agree for having tax knowledge were 6.826113 times more likely to be high compliant than respondents who responded strongly disagree, holding other factors constant. In other words, strongly agree response for knowledge increases voluntary tax compliance to the higher level of voluntary compliance compared to strongly disagree responses by 6.826113 factor.

Similarly respondents who responded agree with tax knowledge (odds ratio 9.682875, p value 0.001) were 9.682875 times more likely to be high compliant than strongly disagree respondents, holding other things constant. Neutral responses for tax knowledge have an odds ratio of 5.346965 (P value 0.007) implying these respondents were 5.346965 times more likely to be high compliant than strongly disagree respondents, others factors remain constant.

This denotes that if taxpayers have better tax knowledge, they are more likely high compliant than those respondents who have less tax knowledge. Consistence with the hypothesis of the study, tax knowledge of taxpayers was a determinant of voluntary tax compliance level. In this study, tax knowledge was discovered to have positive and significant effect on the voluntary tax compliance behavior of taxpayers at less than 5% level of significance.

Cost of compliance

H4: Cost of compliance has a negative and significant effect on voluntary tax compliance level

Table 12 shows odds ratio in cost of compliance are less than one which implies cost of compliance has a negative relationship with the voluntary tax compliance level. Similarly, the P -values of response categories (strongly agree and agree) for the presence of cost of compliance in the tax system was less than 0.05, which is significantly satisfied interpreting the odds ratios, these response.

The odds ratio of strongly agree response for the presence of compliance cost was 0.151488 (with P-value 0.006), which indicates respondents who responded strongly agree with presence cost of compliance were 0.151488 times less likely to be high compliant than respondents who responded for cost of compliance strongly disagree, controlling for other variables were held constant in the model. Again, respondents who responded agree with cost of compliance were 0.191754 (P-value 0.019) times less likely to be high compliant than strongly disagree respondents, holding other factors constant.

For the current study, it was found that cost of compliance has a significant and a negative effect on a voluntary tax compliance level in the study area. The above discussion builds hypothesis four (H4) that cost of compliance affects voluntary tax compliance negatively and significantly.

Perception of Fairness and equity

H5: Fairness and equity of perception of the tax system has a positive and significant influence on voluntary tax compliance level.

The odds ratio of perception of fairness and equity (Table 12) are greater than one that implies perception of fairness and equity has a positive relationship with the voluntary tax compliance. Similarly, the same table (Table 12) shows the P-values of response categories (strongly agree, agree and neutral) for the presence better perception of fairness and equity in the tax system were less than alpha value 0.05 which is significant to interpret the respective odds ratios (Since there is at least three response that is statistically significant)

The odds ratio of strongly agree response in tax fairness and equity was 6.260904 with P-value 0.013, implies that respondents who responded strongly agree for tax fairness and equity were 6.260904 times more likely to be high compliant than strongly disagree respondents, holding other factors constant in the model. Similarly, the odds ratio of agree response for perception of better tax fairness and equity is 5.530606 with P-value of 0.012, implies that respondents who responded agree for tax fairness and equity were 5.530606 times more likely to be high compliant than strongly disagree respondents, holding other things constant. . Additionally, respondent who responded neutral for perception of fairness and equity are odds ratio of 4.460608 with P-value 0.012, implies respondents who responded neutral for perception of fairness and equity were, more likely to be high compliant than strongly disagree respondents, controlling for other variables were held constant.

Accordingly, as respondents' agreement level increase with the better perception of fairness and equity of the tax system, their voluntary compliance level is likely higher.

The result indicates a significant and positive influence of perception of tax fairness equity on voluntary tax compliance level in the study area. This finding is consistence with the hypothesis of the

study, fairness and equity of tax system has a positive and significant influence on voluntary tax compliance.

To summarize, the above findings imply that the significant factors affecting voluntary tax compliance in Fafen zone at the time of this study include corruption (negatively), complexity of tax system (negatively) tax payers tax knowledge (positively), cost of compliance (negatively) and fairness and equity perception of tax payers (positively). (Refer to Table 13). The findings of this study are consistent with the international voluntary tax compliance literatures.

Summary of Result

Table 12: The Summary of Results/ expected and actual signs of explanatory variables

	Explanatory Variables	Expected effect	Actual effect
1	Perception of corruption	Negative and Significant	Negative and Significant
2	Complexity of tax system	Negative and Significant	Negative and Significant
3	Tax knowledge	Positive and Significant	Positive and Significant
4	Cost of compliance	Negative and Significant	Negative and Significant
5	Perception of fairness and equity	Positive and Significant	Positive and Significant

Source: study result (2022)

Discussions and Implications

Survey data obtained from sample individual business taxpayers was analyzed to understand the association between voluntary compliance level and different explanatory variables, such as the perception of corruption, complexity of tax system, tax knowledge of respondents, cost of compliance and fairness perception of respondents with the tax system. The ordered logistic regression results revealed that there is a statistically significant relationship between voluntary compliance level and factors considered in this study.

4.3.1 Perception of Corruption and Voluntary Tax Compliance

The Ordered logistic regression result revealed that perception of corruption was found to have a significant and negative effect on voluntary tax compliance level of respondents at the time of this study. Thus, as respondents perceive high corruption, they are less likely to comply voluntarily with the tax system.

This result is consistent with the theoretical prediction of Theory of Political Legitimacy. According to Political Legitimacy Theory, the higher perceived corruption by taxpayers the lower their willingness to comply voluntarily (Ali et al., 2013).

This finding is also in line with several empirical findings from abroad and Ethiopia. For example, Rosid et al. (2017), Wolela & Fjeldstad (2016) Frehiywot & Lemma (2018) discovered in their research, higher perceived corruption affect voluntary tax compliance significantly and negatively.

The finding this study is also consistent with Augustine & Enyi (2020) who stated that voluntary compliance depends primarily on trust in the state and its authorities.

The implication of this study results with related to corruption perception and voluntary compliance is that, tax payers who perceive high corruption in the country and in the tax system, are less likely to be high compliant tax payers.

4.3.2 Complexity of the Tax System and Voluntary Tax compliance

In the current study, complexity of the tax system was found to have a significant and negative effect on voluntary compliance level of respondents. This finding is consistent with both theoretical foundations and to various empirical studies. According to the Economic Deterrence Theory, voluntary tax compliance decreases in complex a tax system (Ekpulu & Iyoha, 2016). The findings of the current study is also consistent with different empirical studies like Palil (2010), Torgler (2003) and Saad (2011, 14), who discussed complexity of the tax system as a contributing factors for noncompliance behavior among taxpayers.

However, the result found in this study is in contrary with Hite & McGill (1992), who found a positive relationship between tax complexity and tax compliance. Their reason for such relationship was that cautious taxpayers might be more likely to be compliant fearing further mistakes and punishments. Their reason was however, not related with voluntary compliance premises of a full willingness of taxpayers to comply with the tax system without any enforcement action (OCED, 2010). In reality, it is obvious that as the tax system is getting complex, at least, taxpayers will ignore compliant requirements unintentionally.

The implication of this study findings related to tax complexity is that complex tax return forms, length and ambiguous tax rule, sophistication computations and frequent change of tax regulations affect voluntary tax compliance negatively.

4.3.3 Tax Knowledge and Voluntary Tax compliance

With regard to tax Knowledge, in the current study, it was discovered to have a positive and a significant effect on voluntary compliance level of respondents. This result is consistent with the theoretical predictions and findings of several previous studies from abroad and in Ethiopia. For example, Palil et al. (2013) and Kirchler (2007) noted that having general tax knowledge about the tax system has a positive influence on the compliance level of taxpayers. A similar Ethiopian study by Niway & Wondwossen (2015), also found a significant and positive influence of tax knowledge on voluntary tax compliance.

However, this finding is in contrary to Manual & Xin (2016) who found possessing higher tax knowledge by taxpayers' leads lower tax compliance. Their claim is that knowledgeable taxpayers are aware of loopholes in the tax system and know how to reduce tax liability legally, which implies, as tax knowledge increases payers will more likely thefts. However, their claim is against voluntary tax compliance theory and most tax compliance literatures.

The implications of this study findings related to tax knowledge is that, taxpayers' general knowledge like their awareness about the countries tax system increases their voluntary tax compliance level significantly.

4.3.4 Compliance Costs and Voluntary Tax Compliance

In this study, it was discovered that compliance costs has a significant and a negative effect on a voluntary tax compliance level of respondents. This finding is also consistence with both theoretical foundations and various empirical results. Theoretically, voluntary compliance decreases with both the level of compliance costs and marginal compliance costs (Das-Gupta, 2004). This result is also consistent with Eragbhe & Modugu (2014), Tran-Nam et al. (2000) and Frehiywot & Lemma (2018) who indicated tax compliance cost influences tax compliance behavior significantly and negatively.

The implication behind this result is that costs related to cash register machine, stationary, and computer, the time spent to file tax returns and costs paid to personnel hired deter taxpayers to comply with the tax system voluntarily. Thus, when the cost of compliance is getting high, taxpayers will less likely to be high compliant voluntary compliant.

4.3.5 Fairness and Equity Perception of Taxpayers and Voluntary Compliance

Fairness and equity perception of respondents with the tax system was found to have a significant and positive impact on voluntary compliance level of respondents.

The result found in this study, with respect to perception of fairness and equity, is consistent with the theoretical predictions (Comparative Treatment Theory) and other empirical studies. Theoretically, individuals will perceive the tax system as fair and continue complying voluntarily, if the benefits received from the government for tax paid is in equitable ratio (Saad, 2011). This study finding is also consistent with Kirchler (2007), Garboua et al. (2006), Tilahun & Yidersal (2014) and Niway & Wondwossen (2015) who have discovered better fairness perception leads to a high level of voluntary tax compliance. Similarly, Saad (2011)

found taxpayers' information about fairness and equity perceptions are positively associated with compliance behavior taxpayers.

The implications of this study with regarding to fairness and equity perception with is that, as tax payers perceive better fairness and equity tax system, they are more likely to be high compliant than those respondents who have low perception of fairness and equity for the tax system.

Chapter Five: Conclusions and Recommendations

5.1. Introduction

This section deals with conclusions drawn from the findings of the study and recommendations forwarded in order to improve voluntary tax compliance level in Fafen Zone business taxpayers.

The chapter discusses three sections. The first section deals with conclusions which highlight the thesis with major findings; whereas the second section presents recommendations suggested to alleviate the problems identified in the study. The third section discusses about future research directions in the area.

5.2. Conclusions

This study was conducted in examining determinants factors that influence taxpayers' voluntary tax compliance level in selected Woredas and ciy admin of Fafen Zone, Ethiopia. In this study, primary data were collected through online survey and through conventional paper based Likert –type questionnaires. The data were analyzed using both descriptive statistics and using Ordinal Logistic Regression Model. The descriptive analysis for tax noncompliance scenarios indicated that almost all of respondents disagreed with tax these scenarios. This might be due to the sensitive nature of the tax noncompliance scenarios as discussed in the limitation section of this paper. As a result, the scenarios were disregarded for further analysis.

The results of this study suggested that the voluntary compliance level of Fafen Zone selected Woredas at the time of this study were found medium. In this study, five possible determinants of voluntary tax compliance of taxpayers were considered. Namely, corruption, complexity of tax system, tax knowledge, cost of compliance and perception fairness and equity. The result of this study revealed that tax knowledge and perception of fairness have a significant and positive influence on voluntary tax compliance level of tax payers whereas, corruption, complexity of tax system and cost of compliance have a significant and negative effect on voluntary tax compliance level in Fafen Zone selected Woredas at the time of this study.

5.3. Recommendations and Policy Directions

Based on the findings derived from the study and the conclusions made; the researcher came up with the following recommendations and policy directions to enhance voluntary tax compliance level of category “A” and “B” taxpayers in Fafen Zone selected Woredas.

- 1.** As the study findings indicated, perception of corruption influence voluntary tax compliance significantly and negatively. Thus, to achieve high voluntary tax compliance level, the government officials should fight corruption and build transparent tax system. To improve taxpayers’ corruption perception, as discussed in OECD (2010), government officials have to insure the collected tax revenue is spend wisely for basic facilities such as education, health, safety and public transportations; build perception of taxpayers that tax revenues are being utilized properly which ultimately build institutional trust.
- 2.** The study also revealed that complexity of the tax system also affected taxpayers’ voluntary tax compliance level significantly. Thus, tax rules, proclamations and declaration forms should be designed in simpler ways to decrease interpretation and understanding burdens on taxpayers. Difficult or ambiguous tax rules and regulations creates increased opportunities for taxpayers to behave in ways that were unintended by the tax law.
- 3.** In Somali, region unintentional noncompliance taxpayers constitute the highest share (54.6%), (Bureau, 2019). On the other hand, Mckerchar (2002) noted complex tax systems are the major causes for unintentional noncompliance problems and unintentional noncompliance can be eliminated easily by introducing easy tax system. Tax authorities in study Woredas should have implemented simpler tax system. Accordingly, by reducing the complexity of the tax system tax authorities can enhance high voluntary compliance. Generally, It is would not be fair, for example, penalizing taxpayers who make errors due to complexity of the tax system and. Instead, alleviating the complexity of the system should be important policy tool to build sustainable voluntary compliance
- 4.** These study findings provide direct evidence that tax compliance cost is a contributory factor for low voluntary tax compliance level. Hence, tax officials may reduce additional compliance costs incurred by taxpayers, for example, by providing free tax consultation services.
- 5.** From the study findings, there is enough proof to conclude that tax knowledge is associated with high levels of tax compliance. Thus, enhancing taxpayers’ tax knowledge and enabling them to understand their rights and obligations as a taxpayer could improve

voluntary tax compliance. This can be achieved by continues tax education services by that authorities sing different media such as magazines, brochures, radio, TV, etc.,

6. As the study found, taxpayers will be more likely to comply voluntarily if they feel perceive tax system is fair and equity. Therefore, the tax revenue authorities of each Woreda have to ensure fair and equity tax system that is trusted by taxpayers that ultimately enhance voluntary Tax compliance.

As many international voluntarily tax compliance studies suggest, enforcement strategies will not grant consistence voluntary tax compliance, rather, create resentment on the tax system (Murphy, 2008). However, enforcement strategies of tax compliance may be applied in the case of frequent tax evader and none-registered taxpayers (Saw, 2019; Murphy, 2008; Kirchler & Wah, 2010).

In general, tax authorities before implementing any tax compliance policies and strategies, they should understand clearly about factors that motivate deter voluntary tax compliance level of taxpayers. In order to build efficient and sustainable high voluntary tax compliance level, tax authorities should fight corruption, minimize compliance cost, ensure easy tax system and build fair tax system.

5.4. Limitations of the Study

Although this research has been designed carefully, there still exist some limitations. The purposive sampling procedure, which this study was implemented, decrease generalizability of findings. However, from purposively selected study sites, upon determination of the sample size, the ultimate units of the study were selected on random basis using probability sampling. Online survey has some disadvantages like low coverage of population, as well as response error because participants are not familiar with the survey formation. It is difficult to conduct online sampling for all samples due to technology access limitations and knowhow variations among respondents (Andrews, Assistant, & Preece, 2003). However, in this study it has been tried to minimize this problem by reaching personally with respondents to assist how to fill the forms. In addition, Google Forms were designed in the way that everyone with some reading skill could respond easily. Finally, to be flexible, self-administered conventional questionnaires also employed.

Tax compliance is a sensitive issue that most taxpayers will be reluctant to declare their actual compliance status. However, in order to mitigate this problem the questionnaire were designed using indirectly phrased closed-ended type questions that are suggested by many previous studies as best way to avoid the implication of ‘wrongdoing’ by the respondents.

5.5. Implications of the Study for Further Research

The current study focused on voluntary tax compliance determinants, factors that motivate voluntary tax compliance. Future researchers could include enforced/coercive tax compliance determinant factors to examine their effect on tax compliance level of respondents. Future researchers also need to formulate better ways that could minimize the sensitive nature of tax compliance studies.

In addition, the current study was a pioneer study by employing online survey in tax compliance studies in Ethiopia. However, the study was limited to Fafen Zone tax payers. In future, researchers can replicate this type of study to cover the whole country by using technology assisted survey designs.

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Appendix I: Questionnaire- Somali Version

BAHIR DAR UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

Inquiry for Voluntary Tax Compliance

Dear Respondents,

The purpose of this study is to identify determinant factors of voluntary tax compliance of category "A" & "B" tax payers of Jijiga City Administration.

This study will be conducted in partial fulfillment of the requirements for the Master of Science in Accounting and Finance (MSc) in Bahir Dar University.

This research is intended only for academic purpose

You are selected randomly for the study. Your honest and volunteer response in responding to the questions raised is importance to the success of the study. Hence, I request you to fill the questionnaire carefully and at your best knowledge in all regard. Thus, your ideas and comments are highly honored and kept confidential. The outcomes of this study will provide inputs for policy makers in designing tax policy and tax laws.

The confidentiality of any information, name and address of the respondent will be kept secret. The study is conducted by:

IFRAH ABDIKEREM AHMED

Phone +2519120528291

Waxaan Kaaga mahad celinayaa wada shaqayntaada!

Qaybta 1aad: Shaqsiyada Jawaabaha

1. Jinsi Lab Dhedig

2. Da'da a 21-30 31-40

a 41-50 ayn 51

3. 5. Heerka Aqoonta?

1. Fasalka 10 Dahmeyay
2. Ka Hoseeya 10
3. Diploma
4. Bachelor degree
5. Masters or above

4. Maxaad ka ganacsataa?

1. Warshada
2. Ganacsi Guud
3. Adeegyo, (Hotel, Cafateria IWM)
4. Macdan Qodis
5. Dhisme
6. Waxkale, Cadee.....

5. Qaybtee kutirsanyahay ganacsigaada?

1. Qaybta "A" Qaybta "B"

6. Fadlan in ganacsigaadu shaqaynayo?

1. Wax kayar 1 sano

2. 1-5 sano
3. 6-10 sano
4. Inkabadan 10 sano

Qaybta 2aad: Canshurta

Su'aalaha Qaybta 2aad waxaa loo isticmalaya in lagu qiimiyo canshurta darajoyinkeda Qaybaha A iyo Qaybaha B ee canshur bixiyaysha.

2.1. Fadlan akhri kuwan soosocda afkaartadana kumuuji calaamada (v)

n o	Statements	1 Very frequently	2 Frequently	3 Not so often	4 Sometimes	5 Never
1	Intee in la'eg ayay kulatahay in canshur bixiyashu kabaxsadaan bixinta canshurta?					
2	Intee Canshur bixiye ayaa dhiiba reportiyo qaldan?					
3	Intee in la'eg ayaa canshur bixiyayasha beenka kashega hantidooda canshurta kuwajibtay?					
4	Intee in La'eg ayaan dhiibin waxqadaha cadaynaya lacagahoda					

2.2. Fadlan Akhri Dhacdadan sosocota kuna cabir Khimradada.

“Mr. SAEED, oo ah ganacsade shaqsi ah wuxuu jecelyahay faa'idda shirkadiisa oo ah ETB 100,000 ee sanada 2018/19 inuusan usoo banhidigin si uu uga baaqsado canshuur sanadeedka dowlada ugana been sheego Faa'idada shirkadiisa sanad walba.

	Statement	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Maku raacsantahay Fikrada siciid eek u aadan qarinta canshuurta					
2	Maxay kula tahay inuu Lakulmi karo Mar Saeed Cigaab ahaan					

Qaybta 3aad. Waxyaabaha saamaynta kuleh Canshur bisinta

Su'aalaha qaybta 3aad waxay kusabsanaan donaan marxaladaha ku gadaaman canshuur bixinta muwaadinka, Fadlan kajawaab su'aalah soosocda. Adoo siinaya (v).

Aad ugu sohorjeda = 1. Kasohorjeda = 2, iska caadi= 3, Laqabaa = 4, Aad ula qabaa = 5

3.1. Canshuur bixiyaasha ganasiyada gaarka loo'leeyahay

n o	Statement	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Waxay iltahay in dowladu ay samaysay nidaam macquul ah oo casnuur bixin					
2	Waxaan bixiyaa qaybtayda shaqsi ahaaneed ee canshuur bixinta					
3	Marka La'eego nidaamka cusub ee canshur bixinta dadku way bixiyaan					
4	Qoondada dowlada ee nidaamka canshuurta cusub waa mid wanagsan					
5	Dadka uu dhan waxay bixiyaan canshuur isku mid ah oo cadaalad ah					

3.2. Qiimaha Canshuurta ee canshuur bixiyayasha waa mid cadaalad ah.

Fadlan Fikirkaada ku aadan arinkan waxaad kumuujisaa shaxdan hoos kamuuqata:

	Statements	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Qiimaha Mishiinka Cashuurta Jara ayaa Qaali ka dhankanaga					
2	Qaabka Loosoo dhigo Canshuurta sanadlaha ah ayaa qaali ah					
3	Canshuurta shaqaalaha ayaa qaali ah					
4	Qimaha Khadka ayaa qaali ah					
5	Marka Qaar waxaan soo kiraystaa Khuburo iyo Lataliyayaal canshuureed					

3.3. Fahamka Sharciga Canshuurta ee Canshuur bixiyayaasha:

Su'aalahan soo socda Fadlan Goobaab wixii kula qumanaada

no	Statements	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Shar Canshurta Dalka waa aqanaa					
2	Waan ka warqabaa cidaan canshuurta bixinin inuu sharcigu cinqaabo					
3	Waan Fahamsanahay Sharciga canshuurta darajada A iyo B					
4	Si wanaagsan u aqanaa qaabka iyo Goobta Lagu bixiyo Canshuurta					
5	Waan Kaydiyaa Xogta Canshuurta					
6	Waxaan Kolba si Sahlan uhelaa isbadalada sharciyada canshuurta					

3.4. Sharciyada Canshuur bixinta Caqabadaha Kajira

. Su'aalahan soo socda Fadlan Goobaab wixii kula qumanaada

	Statement	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Shuruucda Canshuurta ayaa ah kuwa badan oo wareer ah inta badan					
2	Nidaam Sharci oo Lafahmi karo ayaa haboon in laga dhigo Farimaha canshrta					
3	Shuruucda ayaa aad loo badbadalaa					
4	Foomamka Loo isticmaalo nidaamka canshuur bixinta ayaa ah kuwa adag oo aan si shlan lagu fahmi karin					

3.5. Shakiga Laga qabo musuqa ayaa caqabad ku ah nidaamka canshuur bixinta dalka

Su'aalahan soo socda Fadlan Goobaab wixii kula qumanaada

	Statement	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Waxaan qabaa inaysan dowladu wax badan kaqaban ladagalka musuqa					
2	Hababka Ladagalanka musuqa dowlada ayaan ahayn kuwo hufan					
3	Waxaa Jira awood sheegasho daowladeed oo ah canshuur bixinta					
4	Dadka Canshur baxsha waxay qabaan in Lacagtood mausuqo					
5	Waxaa Jira falal badan kuu saabsan musuqa shaqalaha dakhliyada ah					
6	Wakalada Ladagalanka musuqa ayaan					

ahayn ku hagaag ushaqeeya					
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Appendix I: Questionnaire- English Version

BAHIR DAR UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

Inquiry for Voluntary Tax Compliance

Dear Respondents,

The purpose of this study is to identify determinant factors of voluntary tax compliance of category “A” & “B” tax payers of Fafen Zone.

This study will be conducted in partial fulfilment of the requirements for the Master of Science in Accounting and Finance (MSc) in Bahir Dar University.

This research is intended only for academic purpose

You are selected randomly for the study. Your honest and volunteer response in responding to the questions raised is importance to the success of the study. Hence, I request you to fill the questionnaire carefully and at your best knowledge in all regard. Thus, your ideas and comments are highly honored and kept confidential. The outcomes of this study will provide inputs for policy makers in designing tax policy and tax laws.

The confidentiality of any information, name and address of the respondent will be kept secret. The study is conducted by:

IFRAH ABDIKEREM AHMED

I thank you in advance for your cooperation!

Section I: Respondent’s Background

1. Sex Male female

2. Age from 21-30 from 31-40
 From 41-50 over 51

3. 5. Level of education?

- 6. Grade 10 completed
- 7. Below grade 10
- 8. Diploma
- 9. Bachelor degree
- 10. Masters or above

4. What is your main business sector?

- 7. Manufacturing
- 8. General merchandising & trade
- 9. Services (hotel, maintenance, food & beverage, etc.)
- 10. Mining
- 11. Construction
- 12. Other, please specify.....

5. What is the category of your business?

1. Category “A” . Category “B”

6. Please indicate, how long your company has been in business?

- 5. Less than 1 year
- 6. 1-5 years
- 7. 6-10 years
- 8. More than 10 years

Section II Tax compliance

Questions on section II are used to examine tax compliance level of Category “A” & “B” taxpayers.

2.1. Please read the following and kindly indicate your opinion and put a tick mark (√)

no	Statements	1 Very frequently	2 Frequently	3 Not so often	4 Sometimes	5 Never
1	How frequently do you think taxpayers evade taxes?					
2	How frequently do you think taxpayers under report their income?					
3	How frequently do you think taxpayers over state their					

	deductible expenses?					
4	How frequently do you think taxpayers submit their declaration late?					

2.2. Please read the following scenario and kindly indicate your opinion based your experience.

“Mr. SAEED, a self-employed businessman is considering not disclosing a cash sale of ETB 100,000 as business income in his 2018/19 tax return. Legally, the cash receipts of ETB 100, 000 should be included as a business income. However, he is almost certain that the tax authority will not audit him and would not know if the amount is not disclosed”.

	Statement	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	To what extent do you agree with Mr. SAEED’s possible action of not reporting that cash sale of ETB 100, 000 as his business income?					
2	To what extent do you agree with Mr. SAEED’s possible action if he reports only part of the ETB 100,000 as business income?					

Section III Factors affecting tax compliance

Questions on section III will be used to identify determinant factors of voluntary tax compliance. Please kindly respond to the following statements depending on your degree of agreement or disagreement to each of the statements. (Please tick (√) from the given 5 scale boxes.

Strongly disagree = 1. Disagree = 2, Neutral = 3, Agree = 4, and strongly agree = 5

3.1. Business profit taxpayers’ view of **fairness equity of the tax system** as a factor of tax compliance:

For each question below please tick one using the given scales.

n o	Statement	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	I believe the government utilizes a reasonable amount of tax revenue to achieve social goals such as the provision of benefits for low income families.					
2	I believe that I pay my fair share of tax burden under the current tax system					
3	I believe every one pay their fair share of income tax under the current income tax system.					

4	I receive fair value from the government in turn for my income tax paid. (e.g. benefits)					
5	It is fair for individuals with similar amount of income to pay a similar amount of income tax.					

3.2. Cost of tax compliance as a factor influencing voluntary tax compliance of taxpayers.

Please state your opinion to the statements listed in the following table using the given scales:

	Statements	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Cost of cash register machine, stationary, and computer is high					
2	The time to maintain all my relevant records for the whole year for tax purposes is high					
3	Cost of staff such as accountant & sales man high					
4	Cost of software and internet is high					
5	Most of the time I hire external services (tax consultant and Certified Accountants) to file tax returns and I pay additional costs					

3.3. Business profit taxpayers' knowledge of tax rules as a factor of tax compliance:

For each question below please tick one using the given scales.

no	Statements	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	I am aware of the tax laws of Ethiopia					
2	I am aware that being noncompliant is punishable by law.					
3	I know well schedule "A/B" income tax rates					
4	I am certain about the period and where to pay my tax liability					
5	I can maintain all necessary tax related records appropriately.					
6	I can easily get the necessary tax information & updates					

3.4. Complexity of tax system as a factor of influencing voluntary tax compliance of taxpayers.

Please state your opinion to the statements listed in the following table using the given scales:

Statement	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree

1	Regulations are formulated in ambiguous manner and contain, excessive details, such as numerous rules.					
2	Many and/or sophisticated computations must be performed for tax Purposes (e.g., to prove the applicability of a regulation).					
3	Regulations are subject to frequent changes					
4	The forms/appendices provided by the tax authority for filing purposes are lengthy.					

3.5. Perception of Corruption in the country as a factor of influencing voluntary tax compliance of taxpayers.

Please state your opinion to the statements listed in the following table using the given scales:

	Statement	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	I feel government is not doing enough to control widespread corruption in the State					
2	The strategies of government in controlling corruption are not effective					
3	There is general perception of abuse of entrusted power for personal gain by the government officials in this State.					
4	Taxpayers have the general feeling that there is diversion of public funds for personal gain by government officials in this State.					
5	There is high incidence of extortion from taxpayers by tax officials in this State.					
6	Anti-corruption agencies are not effective in suppressing the level of corruption in this State					

Appendix II: Regression results

Regression Ologit Function

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Brant Test of Parallel Regression Assumption

Variable	chi2	p>chi2	df
All	8.47	0.132	5
CORRUPTION	3.38	0.066	1
COMPLEXITY	1.19	0.275	1
KNOWLEDGE	3.51	0.061	1
COST	0.02	0.892	1
FAIRNESS	0.88	0.349	1

A significant test statistic provides evidence that the parallel regression assumption has been violated.