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Determinant of Voluntary Tax Compliance Behavior In Bahir Dar City þÿ C a t e g o r y   A   a n d   B   T a x p a y e

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DETERMINANT OF VOLUNTARY TAX COMPLIANCE BEHAVIOR IN BAHIR DAR CITY CATEGORY 'A' AND 'B' TAXPAYERS.

BY;

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**Determinant of Voluntary Tax Compliance in Bahir Dar City Category
'A' and 'B' Tax Payers**

By;

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Advisor; Agumas Alamirew (PhD)

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Bahir Dar Ethiopia

Declaration

I, hereby declare that this thesis work entitled 'Determinant of Voluntary Tax compliance Behavior in Bahir Dar city Category "A'' and "B'' Taxpayers'' Is my original work and was not done to fulfill any degree requirements at this or any other university, and all sources used to support this particular study have been recognized accordingly

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Signature

Name of the student

Date of submission

Approval of Thesis for Defense

I hereby certify that I have supervised, read, and evaluated this thesis titled "Determinants of Voluntary Tax Compliance: in Bahir Dar, Ethiopia" by Melese wuletaw prepared under my guidance. I recommend the thesis be submitted for oral defense.

_____ _____ _____

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Approval of Thesis for Defense Result

As members of the board of examiners, we examined this thesis entitled "Determinants of Voluntary Tax Compliance: in Bahir Dar, Ethiopia" by Melese Wuletaw. We hereby certify that the thesis is accepted for fulfilling the requirements for the award of the "Master of science in Accounting and Finance".

Board of Examiners

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Acknowledgment

Abstract

In Ethiopia the tax contribution to GDP ratio remained continuously low and is distinctly shrinking because of low tax compliance. Hence the general objective of the study was to examine the factors that affect voluntary tax compliance in category A and category B taxpayers in Bahir Dar city. Specifically, the study examined the effect of government trust, tax knowledge, fairness and equity on tax system, tax compliance cost and reward and incentives on voluntary tax compliance level in Bahir Dar city category A and B taxpayers. Quantitative research approach was used in this study to examine the relation between factor variables and tax compliance behavior. The target population of the study was category A and B taxpayers in Bahir Dar city, because of heterogeneous group of the study which is category A and B tax payers the researcher used stratified sampling technique. Primary data in the form of closed ended questionaries were distributed to 368 category A and B tax payers in Bahir Dar city and 302 were returned. The data were analyzed by using SPSS version 26 software in ordinary logit regression model. The result of descriptive statistics in the study shows that most of category A and B tax payers in Bahir Dar city were grouped in medium level of compliance. Additionally, outcome of odds ratio in the study tells that government trust, tax knowledge, fairness and equity on tax system and reward had a positive and significant effect on tax compliance behavior in Bahir Dar city category A and B tax payers. However, compliance cost had negative and significant effect on tax compliance level. To enhance the level of voluntary tax compliance government and tax authority should be accountable and transparent, the tax office should create awareness for taxpayers about tax in media, website and preparing of seminars. minimize compliance cost and provide material and non-material rewards for honest tax payers.

Key words; Voluntary tax compliance, government trust, ordinary logit regression, category A and B tax payers.

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List of acronyms / abbreviations

Exp(B);   Exponential beta value

GDP   Growth domestic product

IMF;   international Monitory Fund.

OLR;   ordinary logit regression

OR;   odds ratio

PO;   proportional odds

V,26;   version 26

SPSS;   Statistical package for social science

TPB;   theory of planned behavior

CHAPTER ONE; INTRODUCTION

1.1 Back ground of the study

Taxation is believed to be central to economic, social and political development(Edward, Christian, & Alexander, 2015). They also concluded that strong tax system can play three relevant roles in national development: revenue generation, decrease inequality and promote good governance. Tax is a compulsory payment made by citizens to the government for which they receive no immediate benefit (Parameswaran, 2005), and it is a sources of state revenue which is used for funding the Government's expenditures and development activities (Fauziati, Minovia, Muslim, & Nasrah, 2020).

In recent years, taxation in developing countries has drawn improved attention because of its important role in facilitating sustainable development and possession (Tehulu & Dinberu, 2014). Even the concept of taxation attracts governments' attention the potential tax revenues that countries may receive based on their tax policy are far higher than the actual ones. The gap between potential and actual revenues stems from both difficulties related to a lack of and inefficient tax administration as well as variables that impact taxpayer behavior and contribute to partial tax compliance..(Lois, Drogalas, Karagiorgos, & Chlorou, 2019).

Tax compliance is the willingness of taxpayers to follow tax laws to achieve economic equilibrium in a country. It is the process and procedure for persuading taxpayers to comply with relevant tax laws(Oladipo, Ogunjobi, & Eluyela, 2022).

There is the question whether 'compliance' refers to voluntary or compulsory behavior. If taxpayers 'comply' only because of dire threats or harassment or both, this would not appear to be proper compliance. Instead, it might be argued that successful tax administration requires taxpayers to comply willingly, without the need for enquiries, obtrusive investigations, reminders or the threat or application of legal or administrative sanctions (James & Alley, 2002).

Alm and Maritnez-Vasques cited in (Helhel & Ahmed, 2014)stated that determinant of tax compliance can be classified either internal or external factors. Internal factor is the self- perception and judgement of tax payer compliance behavior for being right, acceptable or moral. External factor is the tax payer' perception of how he or she is treated by the government in areas, such as payment of taxes, return of public services, responsibility of state decisions (Torgler, 2004).

Tax non-compliance is a serious problem for many tax authorities and is not an easy task to convince taxpayers to comply. (James & Alley 2002). It is a continual and growing as a global

problem (Kefela & Ghirmai, 2009). The domestic tax bases in most sub-Saharan African countries are undermined by widespread tax avoidance and evasion, Ethiopia is one of sub-Saharan African countries and face such problems.

According to Shallo (2018) there are many factors that contribute for the low level of tax income but the tax noncompliance is one of the main factors in this respect and number of taxpayers which are important source of revenue for Ethiopian government fail to fulfill income tax requirements and a number of them face prosecution for failing to pay taxes on time. Even if the government advocates voluntary compliance, the tax system in the country mainly stresses on legal enforcement as a remedy to ensure its proper functioning (Shallo, 2018).

In most developed and developing countries, tax revenue accounts for a significant portion of their revenue. However, during the year in 2019 Ethiopian tax revenue contributed 6.7% in GDP of the country, which is lower than some sub-Saharan African countries like Kenya (15.1%) and Sudan (7.4%), and it is below the average percentage contribution 8.4% (IMF, 2021). This lower rate raises the question that did Ethiopian taxpayers paid the correct amount at the right time or not? And why did the government not get the large amount of tax from domestic tax payers?

Tax noncompliance is one of reason that the government did not earn the expected amount of tax from tax payers in the country. As Akalu (2016) mentioned, in Ethiopia the tax contribution to GDP ratio remained continuously low and is distinctly shrinking because of low tax compliance. Taxpayers' resentment and noncompliance can be because of taxpayers' perceptions and attitudes on paying taxes (Yesegat & Fjeldstad, 2016). Subsequently, reports in Bahir Dar revenue office indicates that Bahir Dar city revenue office did not achieve its goal by collecting of required tax revenue according to the plan they provided each year. So, it is essential to de with the issues of voluntary tax compliance and understanding of factors affecting the taxpayer's selection to either pay or stay away from taxes.

1.2. Statement of the problem

The goal of a country's tax system is to efficiently and professionally collect tax revenues to support the government's tax policy. Recent experience shows significant improvements in parts of the world, but claims that achieving this goal is difficult for tax administers. The difficulties to collect the efficient tax revenue in developing countries is due to tax noncompliance of tax payers. (Okpeyo, Musah, & Gakpetor, 2019b).

Tax noncompliance refers the failure to file returns, report income, calculate deduction properly as well as pay on time correctly (Jenkins & Forlemu, 1993), Tax evasion and avoidance are the feature of tax noncompliance (Batrancea, Nichita, & Batrancea, 2012). Tax avoidance and tax evasion bring lot of economic challenges in one country, for instance tax avoidance causes investment distortions and thus companies and individuals would undervalue or even have some of their assets exempted from tax purposes, and tax evasion on the other side would cause distortions in business morals or ethics are destroyed as people look for loopholes in the system thereby making companies record higher dividends and thus take-home profits increase (Dalu, Maposa, Pabwaungana, & Dalu, 2012). Hence this would negatively affect the economy which creates inflation in the country.

Increasing compliance level either voluntary or enforced compliance for tax payers is one of the measurements taken by the government or tax authorities to minimize the rate of evasion and tax avoidance in the country. However, enforcement takes a resource to collect the required tax and resources are scarce, it is valuable to increase voluntary tax compliance behavior for taxpayers. For enhancing the level of voluntary compliance in tax payers, it is essential to identify the determinant factors and their effect on voluntary tax compliance level.

The definition of compliance is usually cast in terms of the degree to which tax payers comply with tax law (James, 2000). It has been said that the degree of non-compliance can be measured in terms of the 'tax gap' and represents the difference between actual revenue and the potential which would be received is zero. there were 100% compliance (James, 2000).

Bahir Dar revenue office annual tax report (2021) indicates that the budget amount for tax revenue had a difference with the actual regular tax revenue. This difference implies that Bahir Dar city revenue office did not collect the potential income with in the required taxpayers in the city due to tax noncompliance behavior of taxpayers, which is supported by the idea difference between actual revenue and the potential which would be received is zero, there were 100% compliance (James,

2000). The report emphasized that the difference is not 0 rather it is negative, which means there is tax noncompliance behavior in the tax payers.

Table 1.1; Planed and actual tax revenue of 2020 and 2021 in Bahir Dar city administration.

Year	Planed or budgeted	Actual tax revenue	Difference
2019\2020	1,742,911,579.00	1,486,671,990.34	256,239,588.66
2020\2021	1,560,083,987.00	1,107,182,787.72	452,901.199.28

Source; Bahir Dar city revenue office tax report 2021.

According to Bahir Dar city Revenue office plan and inspection report (2021) in the fiscal year 2021 achieved 100 percent its goal from category C, taxpayers. However, category A and B taxpayers wait for the final payment period and there is a practice of sneaking out without paying proper fees. The number of complainants is also not small due to the fact that the number of B's taxpayers' do not keep proper account. As the report indicates, the office achieved its plan in category C taxpayers and category A and B have a problem with paying the correct amount of tax at the right time. For this reason, the study focused only on category A and B tax payers in the area.

The other reason for selection of category A and B tax payers is tax collection method, which is the self-assessment system. Self-assessment system is a tax collection method that allows taxpayers to calculate, pay and declare the amount of tax due themselves (Asrinanda, 2018). According Ethiopian 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. So self-assessment system tax collection method is applicable on these categories.

In Ethiopia, the issues of tax compliance behavior have not been significantly investigated. However the study conducted by Tehulu and Dinberu (2014) concluded that perception on government spending; equity and fairness of the tax system; penalties; personal financial constraints; changes on current government policies; and referral group (friends, relatives etc.) as factors that significantly affects the tax compliance behavior, and gender and probability of being audited have no significant impact on tax compliance behavior.

According to Ademe and Simret (2020), audit rate, attitude, perception of equity of the tax system, benefit and education, tax rate, audit probability, social norm, compliance cost and sex are identified to have statistically a significant effects on tax compliance behavior. Penalty rates, perception of government spending, training to enhance tax knowledge and age of the respondent

are identified to have statistically insignificant effects on compliance behavior of category "A" and "B" tax payers in South Gondar zone.

Engida and Baisa (2014) findings indicated that tax compliance was influenced by the probability of being audited, financial constraints and changes to current government policy. Other variables such as perception of government spending, perception of equity and fairness, penalties, roles of the tax authority and tax knowledge were not significantly correlated with tax compliance at the time of the study.

According to Jemberie (2020) family size and length of tax payment period, tax knowledge and awareness, tax penalty and fines has a significant influence over the level of tax compliance. The assessed amount of tax, probability of auditing and attitudes towards equity and fairness are insignificant factors in determining the compliance behavior of taxpayer.

Assfaw and Sebhat (2019) concluded that tax compliance was positively affected by education level of tax payers, tax knowledge and awareness of tax payers, simplicity of the tax system, attitude of tax payers towards tax and perceived role of government expenditure, But, age, sex of respondents, tax penalties and enforcements, organizational strength of the tax authority, fairness of the tax system, tax rate and tax audit were not statistically significant factors influencing compliance behavior of tax payers.

As Deyganto (2018b) stated, gender, age, lack of tax knowledge, simplicity of the tax system, awareness of penalty, probability of being audited, and perception of rates were found to be key factors influencing taxpayers' voluntary compliance. And education level, tax authority efficiency, peer influence, occupation, income level of taxpayers, perception of government speeding, and perception of fairness and equity have no significant influence on voluntary tax compliance.

Even if studies were done in Ethiopia about determinant of tax compliance behavior, they found different result for the same variables, For example, Jemberie (2020) , Engida and Baisa (2014), Assfaw and Sebhat (2019) and Deyganto (2018b) concluded that fairness and equity has insignificant effect on tax compliance behavior, Whereas, (Tehulu & Dinberu, 2014), Ademe and Simret (2020) and Jemberie (2020) tax compliance behavior is affected by fairness and equity or equity and fairness in the tax system has a significant effect on tax compliance behavior. On the other variable tax knowledge, the above researchers also found different results on their study. For instance Jemberie (2020) Assfaw and Sebhat (2019), Deyganto (2018b) found that tax knowledge has a significant effect on tax compliance behavior. Whereas Ademe and Simret (2020) and Engida

and Baisa (2014) concluded that tax compliance behavior is not affected by tax knowledge ,means tax compliance and tax knowledge has not relation.

To the best of the researcher's knowledge, most researchers used common variables, which are gender, tax knowledge, tax fairness and penalty, education, government spending and income. However, there are other factors which have a relation with tax compliance and were not addressed by past researchers in Ethiopia. This study differs from the previous studies conducted in Ethiopia, is that the former researchers did not include variables like perception of government trust and reward or incentives.

In addition to the two new variables, other variables related with higher tax payers in Ethiopia, like tax knowledge, compliance cost and fairness of to the tax system which had had inconsistent results from different studies conducted in Ethiopia were included in this study. Therefore, the researcher conducted this study to identify the effect of the new variables on voluntary tax compliance behavior and show the effect of some variables which had inconsistent results by different researchers in Ethiopia previously in tax compliance.

1.3 Objective of the study
1.3.1 General objectives

The general objective of the study was to examine the factors that affect tax compliance in category. A and B tax payers in Bahir Dar city.

1.3.2 Specific objectives

The study had the following basic specific objectives.

To show the prevalence of determinant factors and voluntary tax compliance behavior.

To examines the effect of government trust on tax compliance behavior in Bahir Dar city category A and B tax payers.

To determine the effect of tax knowledge on tax compliance behavior in Bahir Dar city category A and B tax payers.

To examine the effect of fairness and equity of tax system on tax compliance behavior in Bahir Dar city administration category A and B tax payers.

To evaluate the effect of compliance cost on tax compliance. behavior in Bahir Dar city administration category, A and category B tax payers.

To determine the effect of reward on tax compliance in Bahir Dar city administration category A and category B tax payers.

1.4. Research hypothesis

After reading several literatures and theories about tax compliance and factor that affect it the researcher develops the following hypothesis.

H1; Perception of government trust has positive and significant effect on tax compliance behavior.

.H2; Tax knowledge has significant and positive effect on tax compliance behavior.

H3; Fairness of tax system has significant and positive effect on voluntary tax compliance behavior.

H4.; Compliance cost has negative and significant effect on voluntary tax compliance behavior.

H5; Reward (incentive) has positive and significant effect on voluntary tax compliance behavior.

1.5 Significant of the study

Basically, this paper would conduct to fulfill the masters of accounting and finance degree. However, the study has a significant important for different stake holders. Like Government. researchers and other parties who want to get information about determinants of voluntary tax compliance in the study area**.**

The outcome of the study helps the government or tax authorities to identify the variables which has significant effect on the study and draft important policies related to voluntary tax compliance behavior to minimize tax noncompliance attitudes in tax payers.

Other researchers use the result of the study as source to conduct additional researches about tax compliance and related issue in the case area.

1.6 Scope of the study

The study was conduct in Amhara region Bahir Dar city administration with the topic determinant of tax compliance in category A and B tax payers and used variables like, tax knowledge, fairness of tax system, reward and incentives, trust on government and compliance cost to determine tax compliance behavior in the area. Methodologically, quantitative research approach, cross sectional research design with explanatory research, stratified sampling technique, primary data with closed ended questionaries and ordinary logit regression model were used to examine the determinant factors of voluntary tax compliance behavior.

1.7 Organization of the study

The allover content of the study is organized into five basic chapters. Chapter one introduction of the study, which contains the background of the study, a statement of the problem, objective of the study, the significance of the study, the scope of the study and organization of the study. The next

chapter two, contains both theoretical and empirical reviews, knowledge gaps and conceptual framework. The research method, research design, sampling techniques, data collection instrument and research analyzing methods were included in the third chapter research methodology. The next chapter, chapter four data, analyzing and interpretation contain both descriptive and economic model results in the form of tables and charts. The last chapter of the study, chapter five includes conclusion, recommendation, limitation of the study and suggestion for farther researches.

CHAPTER TWO; LITERATURE REVIEW

2.1 Introduction

This section presents the theoretical and empirical literature reviews related to determinant of voluntary tax compliance behavior and contains the conceptual framework for dependent and independent variables.

2.2 Meaning of tax

Taxes are important sources of state revenue which is used for funding the Government's expenditures and development activities (Fauziati et al., 2020). Tax is not just the price we pay to live in a civilized society, it's the way we shape the civilization we want to live in and it is a powerful tool that can shape our society and as such it is important that we tax the right things at the right amounts (Grudnoff, Denniss, & Richardson, 2021).Tax revenues are the lifeblood of the social contract and become the central to economic, social and political development (Biru, 2020). Tax is a mandatory charge imposed by the government without any expectation of quid pro quo. In other words, tax is a compulsory payment by the people to the government for which there is no direct return to the taxpayers (Parameswaran, 2005).

2.2.1 Taxation in Ethiopia

The current "Ethiopian tax system is the outcome of more than fifty years of experimentation in legislation and tax reform (Lencho, 2011).According to Lencho (2011)since its humble beginnings in the 1940s, the modern Ethiopian tax system has developed and evolved by fits and starts as the needs for revenue arise, as governments change and as the economy and international situations shift (Lencho, 2011). During this time the Ethiopian tax system went through some major revisions and numerous piecemeal changes.

2.2.1.1 Business Categories in Ethiopia

According to federal Income Tax Proclamation No. 979/2016 business income tax payers in Ethiopia can be classified in to three major categories based on legal personality and annual gross income. These are:

Category A Taxpayers; This category of taxpayers includes, body incorporated under the laws of Ethiopia or in a foreign country and any other business having an annual turnover of Birr 1,000,000 or more

Category B Taxpayers; Category B taxpayers are those whose annual gross income is birr 500,000 or more but less than 1,000,000.

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. 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.

2.3 Tax compliance

Tax compliance is the willingness of taxpayers to follow tax laws in order to obtain the economy equilibrium of a country (Novianti & Dewi, 2018).Tax compliance is the process and procedure of persuading taxpayers to comply with the relevant tax laws(Oladipo et al., 2022). described tax compliance as voluntary action – without having to wait for follow up actions from tax authority There is the question whether 'compliance' refers to voluntary or compulsory behavior. If taxpayers 'comply' only because of dire threats or harassment or both, this would not appear to be proper compliance even if 100 percent of the tax were raised in line with the 'tax gap' concept of noncompliance. Instead, it might be argued that successful tax administration requires taxpayers to comply willingly, without the need for enquiries, obtrusive investigations, reminders or the threat or application of legal or administrative sanctions (James & Alley, 2002).

According to Adewale (2019) Tax compliance has key motivations factors available for people must have to comply or not with tax laws which are enforced, voluntary and committed motivation. **Forced motivation** means that taxpayers only pay taxes if the tax administration enforces them through an audit and checks taxpayers for non-compliance.

Voluntary motivation means that taxpayers abide by tax laws and duly comply with laws by paying tax debt promptly, while **committed motivation**, also known as intrinsic motivation, means the moral obligation of taxpayers and their ability to take honest responsibility in paying taxes.

Singh and Bhupalan (2001)outlined some conditions necessary for businesses to be able to effectively comply with tax laws of a given state. They indicated that for taxpayers to be able to comply with tax laws, it requires some extent of honesty, absolute knowledge base of existing country's tax conditions and the ability of the business to use that knowledge to timely, accurately and completely adhere to tax obligations of the state.

2.3,1 Theory of Tax Compliance

According to Helhel and Ahmed (2014) models of taxpayer behavior, including the decision whether or not to pay taxes, tend to reflect one of five theories that can be referred to as: (1) economic deterrence; (2) fiscal exchange; (3) social influences; (4) comparative treatment; and (5) political accountability. In addition to the above five theories scholars add the theory of planed behavior.

2.3.1.1 Economic deterrence

The economic deterrence model states that taxpayer's behavior is influenced by means of elements such as the tax rate, determining the benefits of evasion, and the probability of detection and penalties for fraud which determine the costs (Allingham & Sandmo, 1972). The problem is thus one of rational decision making under uncertainty whereby tax evasion either pays off in terms of lower taxes or subjects one to sanctions (Fjeldstad, Schulz-Herzenberg, & Hoem Sjursen, 2012). This means that few people will evade taxes if they are more likely to be detected and the penalties are severe. In contrast, the predicted return to evasion is high when audit probabilities are low and fines are light. The model then predicts substantial noncompliance (Helhel & Ahmed, 2014). Although the model has been criticized for focusing exclusively on the coercive side of compliance, at the expense of the consensual (Sandmo, 2005), there is some evidence to support the relevance of deterrence strategies to addressing non- compliance. (M. McKerchar & C. J. e. Evans, 2009) . For instance, the fear of getting caught, or the probability of detection, has been found in some contexts to be an effective strategy to induce truthful behavior. The theoretical principles of economic deterrence have also been widely adopted by tax administrations when developing enforcement strategies that rely principally on penalties and the fear of getting caught.

2.3.1.2 Fiscal exchange model

Fiscal exchange theory suggests that the presence of government spending can motivate compliance, and that governments can increase compliance by offering products that citizens prefer in a more efficient and accessible way (Cowell & Gordon, 1988). Alm, McClelland, and Schulze (1992) note that compliance increases with the perceptions of the availability of public goods and services. As a result, the primary concern of taxpayers is what they really receive in exchange for paying taxes in the form of public services (quid pro quo). According to this viewpoint, taxation and the delivery of public goods and services are seen as a type of agreement between taxpayers and the government. (Moore 2004). People may pay taxes because they value

the services and goods offered by the government, recognizing that their contributions are required to both finance those services and goods and to persuade others to do the same. (Fjeldstad & Semboja, 2001) The existence of positive benefits may increase the probability that taxpayers will comply voluntarily, without direct coercion. Therefore, it is logical to suppose that a taxpayer's conduct is influenced by how satisfied or dissatisfied they are with the terms of their agreement with the government. Hence, tax evasion may be seen as an effort by the taxpayers to modify their terms of trade with the government if the tax system is thought to be unfair. (Helhel & Ahmed, 2014).

2.3.1.3 Social influences theory

In the social influence theory, it is thought that people's compliance behavior and attitudes towards the tax system are affected by the behavior and social norms of the individual's reference group. (Snavely, 1990).It is reasonable to assume that human behavior in the area of taxation is influenced by social interactions much in the same way as other forms of behavior (ibid). Compliance behavior and attitudes towards the tax system may therefore be affected by the behavior of an individual's reference group such as relatives, neighbors and friends (Helhel & Ahmed, 2014). As a result, a taxpayer's commitment to compliance will be weaker if they are aware of several members of important groups to them who cheat taxes.

Furthermore, social connections can also prevent people from engaging in evasion because of concern for the repercussions that will be felt if their cover-up is uncovered and made public. Theoretical research on herd behavior in economic situations. Sah (1991) also indicates that social influences may affect compliance, in particular by affecting the perceived probability of detection.

2.3.1.4 Comparative treatment

The comparative treatment model is based on equity theory and posits that addressing inequities in the exchange relationship between government and taxpayers would result in improved compliance (M. McKerchar & C. Evans, 2009). Citizens may not consider their relationship with the state in a vacuum where both parties are the only actors. Likewise, they may not think about their fellow citizens without considering their own relationship with the state (Fjeldstad et al., 2012). They might also think about how the government treats them in comparison to other citizens. This judgment is likely to affect not only their judgment of the state, but also how they view their fellow citizens (D'Arcy 2011). If the state treats certain groups preferentially, this may color the citizen's relationship with the state and the group receiving favors. Therefore, an

important factor is not only what a person receives from the state but also how the state treats that individual in relation to other members of that person's larger national community. The perceived fairness of the tax system affects compliance decisions in a variety of ways, including how each individual taxpayer is treated as well as how other people's tax loads and compliance behavior are related (Sour 2004; Walsh, 2012).

The perceived fairness of a tax system increases when individuals believe that other people around also pay their taxes, and this improves their willingness to comply (Sour, 2004).

According to Bello and Danjuma (2014) there are three levels of fairness . such as, **distributive fairness**, which relates to the taxpayers' perception that the government acts as good custodian and wise spender of tax revenues; **procedural fairness,** which relates to the perception that tax bodies adhere strictly to established procedures, and are fair in dealing with taxpayers; and **retributive fairness**, which relates to the perceptions that tax authorities are fair in the application of punishments when the tax rules or norms are violated.

2.3.1.5 Political legitimacy

According to the political legitimacy theory, tax compliance is influenced by the extent that citizens trust their government (Kirchler, Hoelzl, & Wahl, 2008b). Legitimacy could be explained as belief or trust in the authorities, institutions, and social arrangements to be appropriate, proper, just and work for the common good and political scientists have addressed how political legitimacy and civic identification are fostered (Fjeldstad et al., 2012). Based on a study of 30 developed and developing countries, found that tax compliance is highest in countries with high control of corruption and low size of bureaucracy (Bello & Danjuma, 2014).

2.3.1.6 Theory of planed behavior

The theory of planned behavior is an important theory presented in the field of social psychology and seeks to explain human behavior (Bobek & Hatfield, 2003). This theory was developed by (Icek Ajzen, 1991) and it is just the improved form of the Theory of Reason Action suggested by Icek Ajzen and Fishbein (1970) in order to explain conscious behaviors. According to this theory, the behavior of individuals in society is subject to the influence of specific factors that begin systematically and arise for a variety of reasons. However, the ability to perform a particular behavior depends on whether the person has a purpose for that behavior. When it comes to the factors that determine the purpose for behavior, they are attitudes toward behavior, subjective

norms and cognitive behavior control (Bobek & Hatfield, 2003). Factors counted above are also under the influence of behavioral beliefs, normative beliefs and control beliefs (Icek Ajzen, 2002). The TPB also indicates that perceived behavioral control is dependent of beliefs (as for attitudes towards behavior and subjective norms); that is, control beliefs (Saad, 2011). Control beliefs are defined as the perception of acquiring skills, resources, and opportunities, and cognition of how important those resources are in achieving results (Mathieson, 1991). Individual behavior control is closely linked to his/her skills, knowledge, and the assistance of others.

2.4 Determinant of tax compliance behavior and empirical studies.

Taxpayers' attitudes toward tax compliance may be influenced by a number of circumstances, which may also have an effect on how they behave. There are behavioral characteristics, cultural elements, and other socio-cultural factors that may affect tax compliance, and these possible determinants of tax compliance and non-compliance differ from country to country (Okpeyo, Musah, & Gakpetor, 2019a).

Fischer et al (1992) categorized tax compliance factors into four groups in their expanded model of tax compliance as demographic (age, gender and education), noncompliance opportunity (income level, income source and occupation), attitudes and perceptions (fairness of the tax system and peer influence) and tax system or structure (complexity of the tax system, probability of detection and penalties and tax rates). Barbuta-Misu (2011)) went further and classified tax compliance determinants into seven economic and three non-economic factors. The seven economic determinants of tax compliance were identified as the level of actual income, tax rate, fines, penalties, tax benefits and tax audit probabilities. Non-economic determinants are attitude towards taxes, personal, social and national norms and perceived fairness of tax system. Song and Yarbrough (1978), Palil and Mustapha (2011) however argued that tax compliance behavior is determined by ethics, legal environment and other situational factors at a particular time and place

2.4.1 Studies on Tax knowledge and tax compliance behavior.

Tax knowledge refers to the general degree of fiscal knowledge, knowledge involving evasion opportunities, general educational attainment or knowledge of tax law (Bornman & Ramutumbu, 2019) .Tax knowledge as one of the factors influencing tax compliance is related to the taxpayers' ability to understand taxation laws, and their willingness to comply (Assfaw & Sebhat, 2019). Through taxpayer education, the taxpayer is aware of the rights, obligations and the procedures of paying taxes as well as the consequences of non- compliance (Machogu & Amayi, 2016).

According to Machogu and Amayi (2016) taxpayer education will provide the necessary tax knowledge to comply with the tax matter and change the perceptions and attitudes towards tax-compliance by creating more positive attitudes.

Empirical studies show different results on the relationship between tax knowledge and tax compliance. Several studies provided that tax knowledge affects positively and significantly on tax compliance behavior. For instance, Assfaw and Sebhat (2019) showed that compliance was positively affected by tax knowledge and awareness of tax payers, Other researchers (Adimassu & Jerene, 2016; Belay & Viswanadham, 2016; Kirchler, Hoelzl, & Wahl, 2008a; Palil, 2010) found similar results, which means tax knowledge has positive and significant effect on tax compliance behavior. But, the study of A. Ahmed (2013) and Geeroms and Wilmots (1985) suggested that tax knowledge found to have a negative effect on compliance. Geeroms and Wilmots (1985) found that as taxpayers get enough tax knowledge, they will use this knowledge to find a loophole which can help escape from paying their tax liability that means high tax knowledge, low compliance. On the other hand, researchers Ademe and Simret (2020) and Engida and Baisa (2014) concluded that tax knowledge has no significant effect on tax compliance behavior

2.4.2 Studies on compliance cost and tax compliance behavior

In addition to the tax payment itself and the associated additional burden, the time and money spent on tax compliance and tax planning activities are also included in the economic costs of taxes (Blaufus, Eichfelder, & Hundsdoerfer, 2011).The compliance costs are what taxpayers spend to fulfil the obligations placed on them by tax legislation and the revenue authorities. These expenses go above and beyond the actual tax payment as well as any expenditures associated with tax distortion (Eragbhe & Modugu, 2014). If the tax were eliminated, compliance cost would be disappeared. In addition to the costs of acquiring and maintaining the knowledge necessary to perform this work, such as knowledge of legal obligations and penalties, they also include the costs of collecting, paying, and accounting for tax on the goods and profits of the company as well as on the wages and salaries of its employees (Sandford, 1995).

Compliance costs are divided by Eragbhe and Modugu (2014) into computational costs and tax planning costs. Computational costs are the expenses incurred for a proper accounting system, which involves gathering the required data and calculating the amounts owed for tax purposes.

Planning costs, on the other hand, are incurred when taxpayers attempt to legally decrease or avoid paying taxes.

According to Abdul-Jabbar and Pope (2008) tax compliance costs have three main costs: monetary costs, time costs, and psychological costs to taxpayers. Money or financial expense means an expense to tax professionals and the cost of tax guides, books, communications and other incidental expenses. On the other hand, time costs are incurred in recording tax information, filling out tax forms or preparing tax details for tax professionals, as well as time dealing with tax authorities. Psychological costs refer to the effects on taxpayers who have to manage their tax affairs, such as the anxiety associated with dealing with complex tax issues.

On the study the impact of tax compliance costs on tax compliance behavior in Tanzania small and medium business enterprises conducted by Mahangila (2017) using descriptive analyzing found that high levels of tax compliance costs do have a bearing on tax compliance levels. The result implied that high tax compliance cost leads tax payers to evade tax. The other study made by Abdul-Jabbar and Pope (2008) exploring the relationship between tax compliance costs and compliance issues in Malaysia by using survey research design concluded that there is no significant relationship between compliance costs and likely compliance behavior.

The study tax costs and tax compliance behavior studied by Farida and David (2018) by using Structural Equation Modelling (SEM) technique to establish the key cost drivers built using survey data summarized that tax compliance in Kenya significantly declines with increase in tax compliance costs,

To the best of the researcher's knowledge very little researches were conducted in Ethiopia on the title compliance cost and tax compliance behavior. For example, the study determinants of tax compliance behavior in Ethiopia: evidence from south Gondar zone in category A and category B tax payers conducted by Ademe and Simret (2020) in survey research with bivariant logit model result indicates that compliance cost has positive and significant effect on tax compliance behavior. The other study conducted by Admasu and Shallo (2018) on the title determinants of tax compliance in Ethiopia: case study in revenue and customs authority, Hawassa branch by using descriptive analyzing with the help ordinary logit regression model found that compliance cost has negative and statistically significant relationship with tax compliance behavior.

2.4.3 Studies on Rewards and Incentives and tax compliance behavior

Incentives are actions taken by the government authorities other than punishments threats and in capacitation, that are directed toward specific individual and that are intended to increase their compliance with law (Smith & Stalans, 1991). According to Smith and Stalans (1991) positive incentives need not only material rewards . they may also increase such characteristics satisfaction, pride, rectitude, identification with or recognition valued by others and feeling of consistency or fairness.

A tax incentive is a side of the tax code designed to incentivize or encourage an explicit form of tax payers' compliance behavior (Muoki et al., 2014). Rewards could be an effective tool to increase tax compliance. Researchers like (Breuer, 2013; Feld, Frey, & Policy, 2007; Kastlunger, Muehlbacher, Kirchler, & Mittone, 2011) indicates that reward and incentives has a positive and significant effect on tax compliance behavior.

2.4.4 Studies on perception of government Trust and tax compliance behavior

Taxes are the price paid for services rendered by the government. Trust is very important for taxpayers to pay their taxes voluntarily (Scholz & Lubell, 1998). Trust is a function of the relationship between the government and those in power, where controlled expectations coincide with trust in an uncertain environment (Sitardja & Dwimulyani, 2016). As the lack of trust in government increases, the revenues and hence the performance of the government from taxation are decrease ((Benno Torgler, 2003)). If Taxpayers with a lower level of trust in government perceive the events in a negative way, but taxpayers with higher levels of trust perceive the events as more positive (Robinson, 1996). The taxpayers who do not trust the government will have a greater doubt about how the taxes collected by the government are spent. Taxpayers will support the government's tax-related decisions when they perceive the government as trustworthy, but will not support those decisions if they do not have confidence (Rudolph, 2009).

Trust in government increases the behaviors of the taxpayers towards taxation, as well as its commitment to the tax system and paying taxes (Jimenez & Iyer, 2016a)

In our world studies indicated that perception of trust in government has significant and positive effect on tax compliance behavior. For instance, , Güzel, Özer, and Özcan (2019), Jimenez and Iyer (2016a), Kogler et al. (2013) and I. Wahl, B. Kastlunger, E. Kirchler, and Policy (2010) argued that high trust in government leads to increase the level of voluntary tax compliance behaviors.

2.4.5 Studies on fairness and equity of tax system and tax compliance behavior

Fairness is one of the factors affecting tax compliance behavior. Sahu (2021) stated that if a tax system levies taxes according to the "ability" of the taxpayer, it is considered "fair". The most explicable requirement of equity or fairness is to treat equal people in equal circumstances in an equal way (Jayawardane, 2015). The two significant components of tax fairness (also called tax equity) those are horizontal and vertical equity. Horizontal equity advocates charge of tax based on financial condition, vertical equity implies that tax-payers who are better off should pay in the same proportion of their earning as taxes as those who are less well off (Sahu, 2021). Vertical fairness differentiates individuals with the different income (Barjoyai, 1987).

Most studies found that there is positive and significant relationship between perception on tax fairness and equity) and tax Compliance For example Chan, Troutman, and O'Bryan (2000), Jayawardane (2015). Deyganto (2018a), Adimassu and Jerene (2016), Ademe and Simret (2020) and Tehulu and Dinberu (2014). On the other hand, studies in Ethiopia like Deyganto (2018b), Jemberie (2020) and Engida and Baisa (2014) showed that fairness and equity of tax system has insignificant effect on tax compliance behavior.

2.5 Empirical knowledge gaps

Several studies were conducted about determinant of tax compliance behavior in different area of the world. However, their finding was not similar about the determinant and its effect on tax compliance behavior. After reading several literatures and researches about the topic determinant of tax compliance behavior, researchers found the following basic gaps.

Some studies like Bobek and Hatfield (2003) and Palil (2010) conducted in the topic determinant of tax compliance behavior **took students** (high school and university) as a target population of the study. According to Marandu, Mbekomize, and Ifezue (2015) most of studies used students as respondents. They advised for researchers to use actual taxpayers rather than students who may not adequately understand and display actual behavior of tax. This mis used of target population create wrong out puts and it is difficult to provided applicable recommendation for the government or other stakeholders. In this study taxpayers were taken as a target population

Taking the appropriate model for a given research topic is one of the requirements to conduct good research, but most studies conducted in the topic determinant of tax compliance behavior were used multiple linear regression models and bivariant logit model. For example Nzioki and Peter (2014) Analysis of factors affecting tax compliance in Real Estate Sector: A Case of Real Estate Owners in Nakuru Town, Kenya used Multiple linear regression model to predict tax compliance using the four independent variables in the study: tax compliance cost, tax knowledge and education, fines and penalties and perceived opportunity for tax evasion. And the study determinants of tax compliance behavior in Ethiopia: evidence from south Gondar zone in category A and category B tax payers conducted by Ademe and Simret (2020) in survey research used bivariant logit model. According to Gujarati (2012) logit model is used when dependent variable has a qualitative response. The bivariate logit model is useful when modeling a dependent variable with a yes or no response. However, the response variable, or regress and, can frequently contain more than two outcomes, and these outcomes are ordinal in form. Responses on a Likert-type scale, such as "strongly agree," "somewhat agree," or "strongly disagree," are frequently used in survey-type research. So ordinal logit model is covenant for such types of dependent variables. According to Palil, Akir, and Ahmad (2013) tax compliance can be measured in the form of low, medium and high compliance, which is qualitative and ordinary, and ordinary logit regression model is employed .

Studies conducted in our country Ethiopia, to identify the determinant factors of tax compliance and their effect used the same variables like tax knowledge, tax audit government spending, age, gender, education, penalty, tax rate pear pressure and income levels. For the best of the researcher knowledge none of them included government trust and reward on their studies. Even the researchers used variables like tax knowledge, fairness and equity and compliance cost they did not find the same result and they advised for future research.

The above knowledge gaps made by previous studies motivate the researcher to conduct the study on the given area.

2.6 Conceptual frame work of determinant of tax compliance behavior

Based on the theory of planned behavior, fiscal exchange theory, Comparative treatment and political legitimacy theory and several empirical studies of determinants of voluntary tax compliance behavior, the following conceptual framework was formulated.

Figure 1.1; Conceptual framework

Independent variables.

1. Government trust
2. Fairness and equity of tax system
3. Tax knowledge and awareness
4. Reward and incentives
5. Compliance cost

Dependent variable

Tax compliance
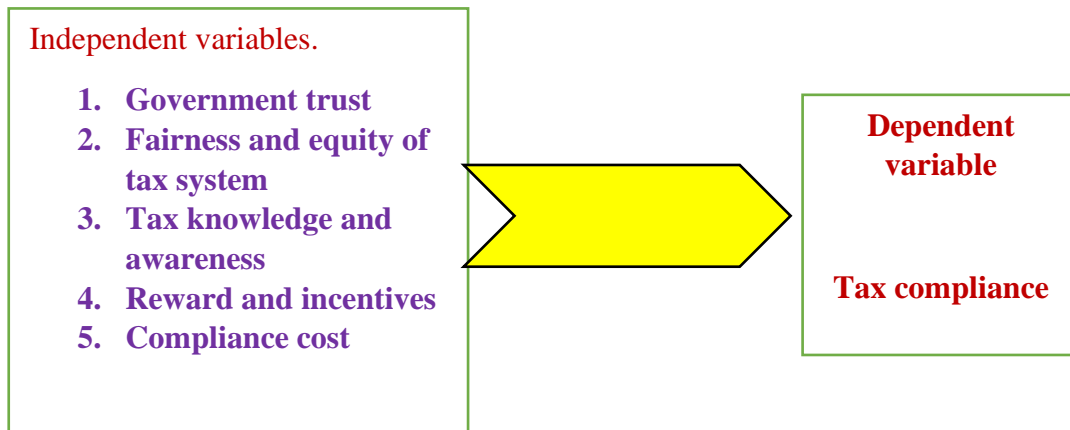
Source' theoretical and empirical literature

CHAPTER THREE; RESEARCH METHODOLOGY

3.1. Introduction

The chapter explain research approach, research design, total &target Population and Sampling techniques, data collection and data analysis methods used in the study.

3.2. Research approach

According to Kothari (2004) there are three basic types of research approaches. These are quantitative, qualitative and mixed research approaches

Selecting research approach depends on the title of the research and a problem of the study. Based on the title determinant of voluntary tax compliance, the researcher used quantitative research approach. Because quantitative approach, implies the researcher tests a theory by specifying narrow hypotheses and the collection of data to support or refute the hypotheses (Kothari, 2004). The data are collected on an instrument that measures attitudes, and the information is analyzed using statistical procedures and hypothesis testing.

Certain types of social research problems call for specific approaches(Creswell, 2014). For example, if the problem calls for the identification of factors that influence an outcome, the utility of an intervention or understanding the best predictors of outcomes ,then a quantitative approach is best (Bhattacherjee, 2012) . Based on the above definition and nature of quantitative approach the researcher selected it as research approach in the study rather than qualitative and mixed approaches.

3.3. Research design

Research design is a logical and systematic plan for collecting data, measurement and analysis of data and prepared for a research study(Peniel, 2015). According to Akhtar (2016) there are four basic research design such as exploratory or formulative research, descriptive research or statistical research, explanatory research and experimental research or analytical research.

In this study explanatory research design was employed. Because explanatory research is conducted to discover and report some relationships among different aspects of the phenomenon under study (Ditsa, 2004).and the aim of this study was to examine the determinant factors of tax compliance and their effect. Survey research provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population (Peniel, 2015). It includes cross-sectional and longitudinal studies using questionnaires or structured interviews

for data collection, with the intent of generalizing from a sample to a population (Kothari, 2004). In cross-sectional field surveys, independent and dependent variables are measured at the same point in time (e.g., using a single questionnaire), As the study measured dependent and independent variables at the same time using structured questionaries the researcher has selected cross sectional survey research design in the studies factors affecting tax compliance behavior in category A and category B tax payers in Bahir Dar city administration.

3.4. Total &Target Population and Sampling Techniques

3.4.1. Total &Target Population.

The target population of the study was category A and category B taxpayers in Bahir Dar city administration. Total numbers of category A and B taxpayers were 4728. Among this 4728, 3478 are category A taxpayers and the remaining 1250 are category B taxpayers in Bahir Dar city.

3.4.2. Sampling Techniques.

If a population from which a sample is to be drawn does not constitute a homogeneous group, stratified sampling technique is generally applied in order to obtain a representative sample (Bougie & Sekaran, 2019) . Because of heterogeneous group of the study which is category A and category B tax payers the researcher used stratified with simple random sampling technique.

The reason for taking a stratified sample is to obtain a more efficient sample than would be possible with simple random sampling. Another reason for selecting a stratified sample is to ensure that the sample will accurately reflect the population on the basis of the criterion or criteria used for stratification. This is a concern because occasionally simple random sampling yields a disproportionate number of one group or another and the sample ends up being less representative than it could be(Bougie & Sekaran, 2019).

If the number of sampling units drawn from each stratum is in proportion to the relative population size of the stratum, the sample is a proportional stratified sample. So proportional stratified sampling technique were chosen in the study determinant of voluntary tax compliance behavior in category A and B tax payers in Bahir Dar city administration.

The sample size of this study was calculated by using (Yamane, 1967) cited in (Kasiulevičius, Šapoka, & Filipavičiūtė, 2006) formula with 95% level confidence interval

$$n = \frac{N}{1 + Ne^2}$$

Where :

n= sample size required

N = number of people in the population

e = allowable error (the level of precision)

Based on the formula the sample size in the target population is determined as follow as.

$$n = \frac{4728}{1 + 4728(0.05)^2} = 368$$

Table 3.1; Sample size determination of category A and B taxpayers.

Strata	Population	Percentage from population	Sample
Category A	3478	74.57%	(368*0.7457) 271
Category B	1250	26.43%	(368*0.2643) 97
Total	4728	100%	368

Source; Authors own computing

3.5 Types and sources of Data

In this study the researcher used primary data as the source of data which were collected from category A and category B tax payers in Bahir Dar city administration.

3.6 Methods of Data collection

 Relevant and important data which are helpful to undertake in this research were collect through primary data collection tools. Such data were gathered through close ended questionnaires, which are questions to ask respondents to select an answer from a given set of choices.

In this research, questionnaires were adjusted in the form of five Likert Scale, those are; strongly Agree (SA) = 5; Agree (A) = 4; Neutral (N) =3, Disagree (D) = 2; and Strongly Disagree (SD) = 1, which were developed from Nandal, Diksha, and Jaggarwal (2021), Bornman and Stack (2015), Sapiei and Abdullah (2008), Augustine and Enyi (2020) and as the research was conducted in Bahir Dar city administration which is the capital city of Amhara region and the society live in the

city speak Amharic, the researcher was obligated to prepared questionnaires, in to two languages, English and Amharic and distributed the Amharic version for respondents.

3.7 Methods of Data Analysis and model selection

As the researcher used quantitative research approach, quantitative research analyzing methods like descriptive (in the form of tables, pie charts) and inferential statistics, (regression) were used to analysis the study and analyzed by statistical package for social sciences software version 26 (SPSS v.26).

The bivariate logit model is useful when modeling a dependent variable with a yes or no response. However, the response variable, or regress and, can frequently contain more than two outcomes, and these outcomes are frequently ordinal in form. Responses on a Likert-type scale, such as "strongly agree," "somewhat agree," or "strongly disagree," are frequently used in survey-type research. So ordinal logit model is covenant for such types of dependent variables (Gujarati, 2012). According to Palil et al. (2013) tax compliance is measured in the form of low , medium and high. for the ordinary nature of dependent variable, tax compliance in the study the researcher used ordinary logit model for analyzing the data.

3.7.1 Ordinary logit regression model

Selection of applicable model is usually determined by the nature of the dependent variables. The dependent variable in the study determinant of voluntary tax compliance in category A and B tax payers in Bahir Dar city administration is voluntary tax compliance, which has categorical or ordered nature. Then ordinary linear regression is not appropriate because of the non-interval nature of the variable and the spacing of the outcome choices cannot be assumed to be uniform (Y. Ahmed, Ebrahim, & Ahmed, 2022).

Consequently, Liao (1994) argued that Ordinal logit and probit models have been widely used to analyze such types of data. Even if the outcome is discrete, the multinomial logit or probit model would fail to account for the ordinal nature of the dependent variable (Greene, 2008). Hence, this study applied ordered logit model instead of ordered probit simply, because of simplicity of interpretation of parameters. There for, ordered logit model was used to analyze determinant of voluntary tax compliance behavior which is grouped in to low compliance, medium compliance and high compliance according to Palil et al. (2013) level of compliance classification. Ordinary logit regression model is used when a dependent variable has three and more categories and the values of each category have a meaningful sequential order(Torres-Reyna, 2012).

Three types of logistic regression models are well-known for analyzing the ordinal response variable, including the proportional odds (PO) model, the continuation ratio (CR) model, and the adjacent categories (AC) (Agresti, 2003).) For ordinal logistic regression, proportional odds model (POM.is the most widely used model (Fuks & Salazar, 2008) .

$$\text{Ln}\left(\frac{p1}{1-p1}\right) \quad = \quad \bar{\alpha}_1 \; + \beta_1\, X_1 + \beta_2 X_2 \ldots \beta_{\,k}\, X_k + \text{\euro}i$$

$$\text{Ln}\left(\frac{p1+p2}{1-p1-p2}\right) \quad = \quad \bar{\alpha}_2 \; + \beta_1\, X_1 + \beta_2 X_2 \ldots \beta_{\,k}\, X_k + \text{\euro}i$$

$$\text{Ln}\left(\frac{p1+p2\pm\cdots pk}{1-p1-p2+\cdots pk}\right) \quad = \quad \bar{\alpha}_k \; + \beta_1\, X_1 + \beta_2 X_2 \ldots \beta_{\,k}\, X_k + \text{\euro}i$$

OLR is a logistic regression technique that fits two or more regression curves simultaneously. The equation series above, for instance, indicates the odds of belonging to the group represented by y = 1 against belonging to the groups represented by y = 2 to k. The numbers of equations modeled in this series are the number of ordered categories minus one. If y has 3 ordered levels, the number of equations modeled are 2. Each such equation represents its own logit model, and hence the individual equations are called logits. The sum of the probabilities from p1 to pk is 1. Hence, OLR models cumulative probability Kavade, 2009).

The important assumption in modeling with OLR is that, the relation between independent variables and logits is the same for in all the equations in the series. The assumption implies that the coefficients of the independent variables will not vary significantly. Hence, the variable coefficients of β in all the equations in the series are the same. However, each equation has a different constant term $\bar{\alpha}$ (Kavade, 2009), Were,

X1, X2, X3……XK are vectors of independent variables of ith case;

$\bar{\alpha}$, threshold values;

β1, β2…βk are parameter vectors to be estimated (regression coefficients);

$\text{\euro}i$, is a random error term; k is the number of regression coefficients.

Then the equation for voluntary tax compliance is

COMP=$\bar{\alpha}$, + β_1 GOVT + β_2TKN+ β_3FAE + β_4COC $_+$ β_5REW+ $\text{\euro}i$

Where: COMP, Compliance of Tax Payers; $\bar{\alpha}$, Constant (Y intercept), $\text{\euro}$, Error term; β1, β2, β3, β4 and β5 are Coefficient indicating rate of change of tax compliances as of the independent

variables; GOVT is perception of government trust, TKN implies tax knowledge, FAE fairness and equity of tax system, COC is compliance cost and REW indicates reward and incentives.

3.8 Test of reliability and validity

3.8.1 Reliability test

The reliability of a measure indicates the extent to which it is without bias and hence insures consistent measurement across time and across the various items in the instruments (Bajpai & Bajpai, 2014). Cronbach's alpha is one of the most commonly accepted measures of reliability. (Geremew, 2017). It is a test reliability technique that requires only a single test administration to provide a unique estimate of the reliability for a given test. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient George and Mallery (2003) provide the following rules of thumb Cronbach alpha greater than 90%. Excellent, 80% – 90% Good, 70% –80% Acceptable, .60% –70% Questionable, 50% –60% Poor, and. Less than 50% Unacceptable.

The following table (3.2) elaborates the Cronbach alpha value of each variable in the study and all values are greater than 70% which is above the acceptable range of the rule of thumb. This explained that all questions raised in the study determinant of voluntary tax compliance in category A and B tax payers in Bahir Dar city administration for each variable are reliable based on the value of Cronbach alpha tested by using SPSS version 26.

Table3.2; Cronbach alpha values for variables.

Variables	Number of items	respondents	Cronbach Alpha value	Level
Compliance	4	24	0.924	Excellent
Government trust	6	24	0.81	Good
Tax knowledge	5	24	0.841	Good
Fairness and equity	6	24	0.873	Good
Compliance cost	5	24	0.815	Good
Reward	5	24	0.814	Good

Source; SPSS out put

3.8.2Test of validity

Validity is frequently described as the extent to which an instrument measures what it purports to measure. Validity requires that an instrument is reliable, however an instrument can be reliable

besides being valid (Kimberlin & Winterstein, 2008). According to Golafshani (2003) validity determines whether the research clearly measures that which it was once supposed to measure or how sincere the research consequences are. Researchers generally decide validity with the aid of asking a sequence of questions, and will regularly seem to be for the answers in the research of others. Validity concerned with weather we measure the right concept or not (Bajpai & Bajpai, 2014).

As Drost (2011) stated there are six validity types: face validity, content validity, concurrent and predictive validity, and convergent and discriminant validity. Trochim (2006) divided these six types into two categories: translation validity (face validity and content validity) and criterion-related validity. (Concurrent and predictive validity, and convergent and discriminant validity Content validity refers to how accurately the instrument measures the representativeness of the content.

Tax professionals, researchers and personal advisor were also given advice about the relevance, clarity, simplicity, and ambiguity of the instruments as part of this study to improve the content validity of the instruments. Additionally, all instruments were used in research that had already been validated and verified for reliability by previous researchers.

3.9 Variables Description

The dependent and independent variables in the study with their measurement and expected sign is listed in the following table.

Table 3.3; Variables description.

Variable	Symbol	Unit of measurement	Expected sign
Dependent variable ❖ **Voluntary tax compliance**	COMP	low, medium and high (1-3) ordinal Likert scales are converted in to three based on mean.	
Independent variables			
❖ **Perception of government trust**	GOVT	(1-5 Likert Scale) ordinal	+ (good perception, high compliance)

❖ Tax knowledge	TKN	(1-5 Likert Scale) ordinal	+ (high tax knowledge, high compliance
❖ **Perception of fairness and equity**	FAE	(1-5 Likert Scale) ordinal	+ (good perception, high compliance
❖ Compliance cost	COC	(1-5 Likert Scale) ordinal	- (high compliance cost, low compliance
❖ **Reward and incentives**	REW	(1-5 Likert Scale) ordinal	+ (high reward and incentive, high compliance

3.10 Ethical consideration

According to Creswell (2012), researchers must respect participants Through the scientific process of the study, the researcher upheld objectivity, courtesy, and high professional standards without falsifying, altering, or misrepresenting data for prejudiced or other motives. When conducting the study, ethical responsibility was taken into account. It entails informing the respondents about the study's objectives and how the data would be used.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1. Introduction

This chapter contained five basic sections, which are respondents response rate, respondents background analysis (gender, age, educational status, business type, business category and business experience), descriptive analysis for explanatory variables and dependent variable tax compliance, assumption of ordinary logit regression (model fitting information, pseudo R square, test of parallel lines and multicollinearity) and the basic analysis of all independent variables in ordinary logit regression with the odds ratio model.

4.2 Respondents' response rate

For the study, determinants of tax compliance in category A and B taxpayers in Bahir Dar city administration questionnaires were distributed to 368 taxpayers based on the proportion of sample size. The following table describes the number of questionnaires collected with the percentage of distributed samples.

Table 4.1; Response rate of questionnaires

Tax category	Distributed questionnaires	Collected questionnaires	Percentage
Category A	271	212	78.22
Category B	97	90	92.78
Total	368	302	82.06

Source; Authors own computation

As indicated from the table (4.1), 302 questionnaires, which is 82.06 percent of the total distributed questionnaires, were collected and the remaining 13.84 percent were uncollected due to several reasons like absence of respondents and others. So, 82.06 percent were enough to analysis the data by using ordinary logit regression in SPSS version 26.

4.3 Respondents back ground

In this section respondents back ground like gender, age, educational level, business type tax category and business experience were described by using descriptive statistics.

Table 4.2; Respondents demographic character

Item	Demographic character		Frequency	Percent
1	Gender	Female	107	35.4
		Male	195	64.6
		Total	302	100.0
2	Age	21 – 35 years old	206	68.2
		36 – 50 years old	66	21.9
		above 50 years old	30	9.9
		Total	302	100.0
3	Educational level	below grade 10	60	19.9
		grade 10	103	34.1
		Diploma	61	20.2
		degree and above	78	25.8
		Total	302	100.0

Source; survey 2022

The above table (4.2) revealed, among 302 total respondents, 107(35.4%) were female taxpayers and the remaining 195 (64.6) were male tax payers. This implies that the majority of the respondents were male taxpayers in the study. According to Ademe and Simret (2020) and Deyganto (2018b) male tax payers have negative attitudes to voluntary tax compliance behavior or male tax payers are less compliant than female tax payers.

The next part of the table shows that 206(68.2%) were between 21 and 35 years old, 66(21.9%) were from the age of 36 to 50 and the remaining 30(9.9%) of the respondents were above the age of 50 years old. The last part of the table (4.2) elaborates the educational level of respondents, which were grouped into five levels. Out of the total respondents, 60(19.9%) were below grade 10, 103(34.1%) grade 10 completed, 61(20.2%) diploma and the other 78(25.8%) were degrees. Totally table (4.2) implies that the majority of the respondents were male, young and grade 10 completed.

The educational level of respondents shows that most of the taxpayers in the city were not highly educated and they are not able to understand and interpret tax laws easily. As theories and

empirical studies support that more educated tax payers are more compliant and non-educated tax payers are less voluntarily compliant.

Business characteristics of respondents; Business characteristics of the respondents include the type of business they participate in(Manufacturing, mineral, service providers and merchandising), business tax category (category A or B) and years of spent in the business (business or trade experience). Table 4.2.1; Business type of respondents.

Item	Business type	Frequency	Percent
1	Manufacturing	59	19.5
2	Mineral	12	4.0
3	Service	80	26.5
4	Merchandizing	151	50.0
Total		302	302

Source survey 2022

The above table (4.2.1) shows that out of the total respondents, 302, 59(19.5%) participated in manufacturing activities,12(4.0%) minerals, 80(26.5%) were service providers and the remaining 151(50.0%) participated in merchandizing activities. So, most of the respondents in Bahir Dar city administration category A and category B taxpayers were participating in merchandising activities at the time of the study.

Business tax category; The respondent of the study were Category A and category B tax payers in Bahir Dar city administration.

Figure 4.1 business tax category of the respondents.
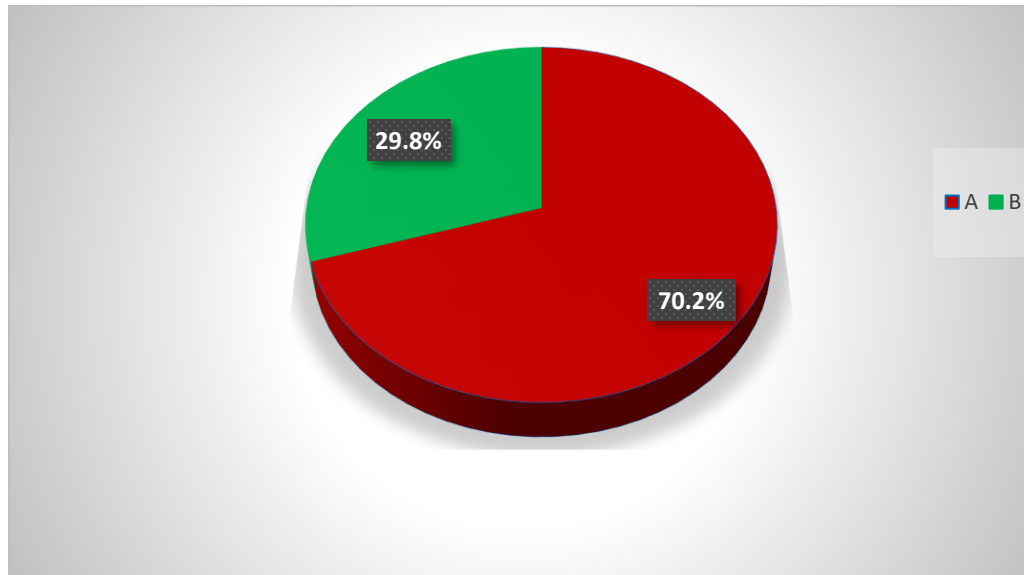
Source survey 2022

According to the above figure (4.1), 212(70.2%) of the respondents were category A taxpayers and the other 90(29.8%) were grouped under category B taxpayers in Bahir Dar city administration. As indicated from the above figure, the majority of the respondents in the study were category A taxpayers.

Business experience; Trade experience of the respondents were classified into four groups for the purpose of this study, which are below 1 year, between 1-5, 5- 10 years and above 10 years. The table (4.2.2) below explains the general information about business experience of the respondents in category A and B taxpayers in Bahir Dar city administration.

Table 4.2.2; Business experience of tax payers.

	Frequency	Percent
bellow 1 year	37	12.3
1 - 5 years	166	55.0
5 - 10 years	60	19.9
above 10 years	39	12.9
Total	302	100.0

Source; Survey 2022

Based on the table (4.2.2) above, 37 (12.3) of the respondents live in the business for less than one year and the other 166(55%). 60(19.9%) and 39(12.9%) have business experience of 1-5 years, 5-

33

10 years and above 10 years respectively in the date of the study. The table indicates that most of the respondents in this study had business experience of 1-5 years. Therefore, it is possible to summarize category A and B taxpayers in Bahir Dar were less experienced in business and require training and awareness about tax and related things.

4.4 descriptive statistics for Tax compliance level and independent variables;

The responses of the respondents for the independent and dependent variable (voluntary tax compliance) constricts written below were measured on five-point Likert scale with: 1= strongly disagree, 2= disagree, 3 = neutral, 4= agree and 5= strongly agree. But, while making interpretation of the results of standard deviation and mean, the scales were reassigned according to Geremew (2017) and as follows to make the interpretation easy and clear;

1.00– 1.80= strongly disagree (very low agreement}

1.81 -2.60 = disagree (low agreement)

2.61 – 3.40= neutral (medium level of agreement)

3.41 - 4.20 = agree (high level of agreement)

4.21 – 5.00 = strongly agree (very high agreement)

Voluntary tax compliance; To determine the level of voluntary tax compliance, four questions were distributed to category A and B taxpayers in Bahir Dar. According to the table (4.3) below, mean value 3.68 indicates that most of the respondents believed that paying tax is the right and natural thing to do. The other mean value of 2.79, implies that the majority of taxpayers responded disagree with reporting their income with the correct amount in the required time. This means that most of the respondents did not report their correct income within the prescribed period.

According to the mean value 3.60 in the table (2.3) respondents feel moderately good when they respect tax law and the mean value 3.07 indicates that taxpayers are neutral on the idea, they are not Shure to pay tax, if there is no tax audit. The result of the response level of respondents for each question about the dependent variable during the time of the study indicates that most respondents were included in medium level of voluntary tax compliance.

Table *4.3*; Descriptive statistics for tax compliance.

	N	Mean	Std. Deviation
I believe that paying tax is the right and natural things to do	302	3.68	1.306

	N	Mean	Std. Deviation
I report the correct amount of my income in the required time period	302	2.79	1.378
I feel good while obeying for tax law and procedure to declaring and paying honestly.	302	3.60	1.355
I will pay tax even if tax audit does not exist.	302	3.07	1.389

Source; survey SPSS out put

Perception of government trust; To show the perception of government trust with in taxpayers, six questions were distributed to respondents in the form of 5 Likert scale.

Table 4.*4*; Descriptive statistics for perception of government trust.

	N	Mean	Std. Deviation
I don't think that government discriminates against me because of my religion	302	3.21	1.394
I believe that distribution of funds to different regions is fair.	302	2.50	1.280
I don't think that government discriminates against me because of my race, or ethnic background.	302	2.95	1.406
I believe that government is transparent and accountable for each activity.	302	3.55	1.360
I believe that large portion of the money collected is spent on worthy projects in each region.	302	2.97	1.325
I believe that government provides Services and infrastructure s for each region equally.	302	2.47	1.331
Government trust	302	2.9398	.86307

Source; SPSS v.26 output

The mean value of taxpayers who don't think that the government discriminates against them due to their religion is 3.21(medium level of agreement), which implies most of the respondents have medium level of agreement for the trust of a government that does not discriminate against them due to their religion. On the other hand, the value 2.50(low level of agreement) implies that the majority of category, A and B taxpayers did not believe in the fairness of distribution of funds(budgets) for each region. Furthermore, the mean values 2.95 and 2.97 show that tax payers in this study had a medium level of agreement for the concept of government discrimination based

on ethnic background and spending a large portion of the revenue on worthy projects. Which means almost half of the taxpayers agreed that the government did not discriminate against people based on ethnic background and a large portion of the revenue spent on worthy projects. On the other hand, the value 3.55(high level of agreement) in the above table (4.4) shows, most of the respondents responded that the government is transparent and accountable.

According to the mean value 2.47(low agreement) in table (4.4), a high number of tax payers did not agree for fair distribution of infrastructure to each region. This means, most category A and B taxpayers in Bahir Dar believed the access of infrastructure for each region is unfair. Finally, the total mean value perception of government trust 2.9998 (medium level of agreement) indicates that beyond half of the respondents had at medium level of confidentiality for their government at the time of the study.

Tax knowledge; According to the table (4.3) below, the mean values 2.88 and 3.05 describe a high number of taxpayers believed that Bahir Dar city revenue office provided medium or moderate training for category A and B taxpayers in the city about tax rules and regulations and training helps them moderately pay the correct amount of tax at the right time. Similarly, the mean value 3.40(medium level of agreement) indicates that most tax payers had moderate knowledge about the type of income included in the tax statement. On the other hand, the mean value 3.51 and 4.14 (high level of agreement) implies that more than half of category A and B taxpayers had knowledge about the type of expanse deducted from their income for tax purposes and they know that being noncompliance is punishable by law.

Generally, total mean value of tax knowledge 3.3967 (medium) shows the large number of category A and B taxpayers in Bahir Dar had moderate knowledge about taxes and tax related issues.

Table 4.5; Descriptive statistics for tax knowledge.

	N	Mean	Std. Deviation
Sufficient trainings are given to me on the purposes of tax and its regulations	302	2.88	1.446
Trainings helped me to pay taxes within the prescribed period.	302	3.05	1.321
I know which income should be included or excluded in determining the taxable income.	302	3.40	1.424

	N	Mean	Std. Deviation
I know which expanse should be deducted from my income to compute my tax liability	302	3.51	1.489
I am aware that being noncompliant is punishable by law.	302	4.14	1.147
Tax knowledge	302	3.3967	.95902

Source; Output of SPSS v.26

Fairness and equity; As shown in the table (4.6), the mean value 3.24, 2.99, and 3.09 (medium) revealed that most category A and B taxpayers moderately agreed with the idea that the tax system does not affect the rich, pay the same amount of tax as others who earn the same income and pay fair of tax burden in the current tax system. On the other hand, the values 3.49 and 3.41(agree) show that most taxpayers in the city did not pay a large amount of tax when compared to the service they get and believed that there is no tax law which treats the same people in different ways. However, the mean score value of 2.59(low agreement) indicates that a large number of taxpayers believed that the current tax system in Ethiopia does not consider the taxpayer's ability to pay.

Lastly, the general mean score value for fairness and equity 3.1352 elaborate that a high number of taxpayers believed the tax system in Ethiopia is moderately fair, but not highly fair.

Table 4.6; Descriptive statistics for fairness

	N	Mean	Std. Deviation
The present tax system does not affect the higher income level persons.	302	3.24	1.491
I pay about the same amount of taxes as others making the same income.	302	2.99	1.457
I believe that I pay my fair share of tax burden under the current tax system.	302	3.09	1.375
I feel that I don't pay high taxes when compared to the services I get from the government.	302	3.49	1.344
There is no tax law that treat people at the same income level differently.	302	3.41	1.353
I feel that the present tax system in Ethiopia is based on tax payers' ability to pay.	302	2.59	1.345

Fairness and equity	302	3.1352	.84931

Source; Output of SPSS v.26

Compliance cost; Five basic questions were distributed to taxpayers for measurement of the compliance cost in the form of a Likert scale and converted into mean values for analyzing purposes,

According to table (4.7) below, the mean scores of 2.97, 3.07, 2.92 and 3.02 large numbers of category A and B tax payers in Bahir Dar city feel neutral on the time spent on recording tax and related files, the high cost of the cash register machine, money paid to tax advisors and additional costs for accountants and salesmen. Which means most taxpayers spent moderate time on recording tax and related files and paid medium costs for cash registration machine, tax advisor and accountants. However, the mean value 3.41 (agree) implies that more taxpayers in the city spent a lot of time on activities associated with tax objections, inquiries and appeals.

Generally, the total mean value for compliance cost 3.0788 (medium level) in the table summarizes that the high number of category A and B tax payers in Bahir Dar city spend moderate time and cost for tax and related activities.

Table 4.7; Descriptive statistics for tax compliance cost.

	N	Mean	Std. Deviation
I spent much time to record and maintain tax related files.	302	2.97	1.409
I have spent much time on activities associated with tax objection, inquiries and appeal.	302	3.41	1.387
Cost of cash register machine, stationary, and computer is high.	302	3.07	1.411
I pay much money for my tax advisors.	302	2.92	1.428
Additional cost of staff such as accountant & sales man is high.	302	3.02	1.464
Compliance cost	302	3.0788	1.01903

Source; SPSSv.26 out put

Reward and incentive; Mean values which are greater than 3.40 (3.70, 3.42, 3.68, 3.61 (high level of agreement)) stated in the table (4.8) below describes that large numbers of category A and B taxpayers in Bahir Dar thought providing rewards instead of penalties and giving tax discounts

for honest taxpayers can increase the voluntary compliance level of tax payers. They also believed that being rewarded coniform love of their country and reward certificates can create good will for their business. On the other hand, the mean value of 2.96 revealed that small numbers of taxpayers feel the current reward system for honest taxpayers in the city is good.

Totally, the mean value of reward 3.4735 in the table (4.8) indicates that most category A and B taxpayers have a high level of agreement with the concept of reward and incentives or believe that rewards can increase voluntary tax compliance.

Table 4.8; Descriptive statistics for reward.

	N	Mean	Std. Deviation
Compliance level can be achieved by increasing reward and incentives rather than increasing tax penalties	302	3.70	1.361
I believe that rewards like tax discounts, motivate to pay correct tax at the given time.	302	3.42	1.449
To be rewarded for being tax compliance will confirm my love for my country.	302	3.68	1.388
I believe that reward certificate creates a good will for my business.	302	3.61	1.364
I believe that the current reward system for honest tax payers in our city is good.	302	2.96	1.423
Reward	302	3.4735	1.03032

Source; SPSS v.26 output

4.4.1 Overall level of tax compliance among tax payers

The overall tax compliance level of tax payers was computed using the mean score category of low = 1.00 to 2.25; medium = 2.26 to 3.75 and high = 3.76-5.00 (Palil et al., 2013)

Table 4.9; descriptive statistics for allover tax compliance level.

	Category A		Category B		total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Low	39	18.4	26	28.8	65	21.5
Medium	95	44.8	32	35.6	127	42.1
High	78	36.8	32	35.6	110	36.4

| Total | 212 | 100 | 90 | 100 | 302 | 100.0 |

As stated in the above table 18.4, 44.8, 36.8 percent of category A tax payers were low, medium and high compliant respectively, on the other hand 35.6 percent of category B tax payers were high compliant but the remaining 64.4 percent of them were low and medium compliant

Based on the above table (4.9), among the total respondents 65(21.5%) were low compliant and the remaining127(42.1%) and 110(36.4%) were moderately compliant and highly compliant respectively at the time of the study. Therefore, majority of category A and B tax payers in Bahir Dar were grouped in medium level of compliant at the time of the study.

4.5 Inferential statistical analysis of the study

4.5.1 Chi-square test and association

Correlation coefficient is that a single value or number establishes a relationship between the two variables being studied (Gogtay & Thatte, 2017). Spearman's rank correlation coefficient is a nonparametric (distribution-free) rank statistic proposed as a measure of the strength of the association between two variables (Hauke & Kossowski, 2011). As the dependent variable tax compliance is ordinal and non-leaner, Spearman chi- square test is employed. The following table showed the correlation coefficient of variables included in the study by Spearman's rho test by using SPSS version 26 software.

Table4.10; Spearman's rho correlation test.

Variables	Spearman's rho Correlation Coefficient	Sig. (2-tailed)
Government trust*voluntary tax compliance	.422	.000
Tax knowledge *voluntary tax compliance	.280	.000
Fairness and equity*voluntary tax compliance	.251	.000
Compliance cost*voluntary tax compliance	-.273	.000
Reward*voluntary tax compliance	.449	.000

Source; SPSSv.26 out put

As stated in the table (4.10) independent variables government trust, tax knowledge, fairness and equity compliance cost and reward had a relation to the dependent variable voluntary tax compliance with the Spearman's rho correlation coefficient of. .422, .280, .251, -.273 and .449 respectively and p value of .000, which is less than 0.05 for all independent variables. According to the rule of thumb in statistics, if the p value of the association is less than 0.05, the association between the dependent and independent variable is significant. So, all explanatory variables in this study had a p value of .000 which is below .05 and show that all factors have a significant relation to the dependent variable.

As indicated in the table 4.10, government trust, tax knowledge, fairness and equity and reward and incentive have positive and significant relation to tax compliance behavior in category A and B tax payers in Bahir Dar city administration. On the other hand, compliance cost had negative and significant relationship with compliance behavior based on the value of spearman correlation coefficient.

4.5.2 Regression analysis of the study

4.5.3 Ordinal Regression Analysis Assumptions

In an ordinal logistic regression model, the outcome variable is ordered, and has more than two levels(Liu, 2009)**.** In this study, the ordinal outcome variable is tax compliance level, which is coded as 1, 2, or 3 (1 = low; 2 = medium; and 3 = high) and is categorized based on a continuous variable means. Ordinary logit regression has the following basic assumptions

Dependent variable should be measured at the ordinal level

One or more independent variables that are continuous, ordinal or categorical

Each independent variable has an identical effect at each cumulative split of the ordinal dependent variable.

There is no multicollinearity

4.5.4 Model Fitting Information and Goodness-of-Fit

Before assessing the impact of each explanatory variable in the model, it became crucial to ascertain whether the model enhances the outcome's capacity for prediction. The final model significantly outperforms the baseline intercept alone model, according to the statistically significant chi-square value (p 0.05), the null hypothesis is rejected if the values of chi-square are statistically significant ($p < 0.05$); this indicates that the variables assumed allow the model to produce more accurate predictions than the model without variable (Kavade, 2009)). As shown in

the table (4.11), p value (.000) is significant at the 5%, indicating that the model's parameters contribute to better predictions than the null model, which has no predictors. Then the null hypothesis, there is no significant difference between the baseline model and the final model is rejected due to the significance p value less than 0.05 and indicates that there is significant difference between the baseline model and the final model.

Ho: There is no significant difference between the baseline model and the final model.

Ha: There is a significant difference between the baseline model and the final model.

Table4.11; Model fit information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	590.943			
Final	436.019	154.924	20	.000
Link function: Logit.				

Source' survey 2022

If the predicted probabilities differ from the observed in a way that the ordered logistic model cannot predict, the goodness of fit test will show this. It is inferred that the projected probabilities differ from the observed in a way that the model could not have predicted if the resulting p-value is less than the selected significant level. This may be due to an erroneous connection, a missing higher-order term for model variables, or an omitted predictor that is not included in the model (Nwakuya & Mmaduka, 2019).

For ordinal regression, Pearson's statistic and Deviance are used as an indication of goodness-of-fit. Both values should be small and the significance values large. The large significance value (p > 0.05) indicates the model is a good fit (Norušis, 2008) . As stated in table (4.12) the value of Deviance is.992 which is greater than the p value 05. Then the null hypothesis, the observed data have the goodness of fit with the fitted model. is not rejected and the model is fit in this study.

Ho: The observed data have the goodness of fit with the fitted model.

Ha: The observed data have no goodness of fit with the fitted model.

Table4.12; Goodness-of-Fit.

	Chi-Square	df	Sig.
Pearson	520.403	466	.041
Deviance	396.242	466	.992

Source; SPSS out put

4.5.5 Pseudo-R square

For regression models with a categorical dependent variable, it is not possible to compute a single statistic that has all of the characteristics of in the linear regression model. So, these approximations are computed instead. The basic R square used for categorical dependent variables to estimate the coefficient of determination are Cox and Snell, Nagelkerke and McFadden R square (Elamir & Sadeq, 2010) .

 Nagelkerke is an adjusted version of the Cox & Snell that adjusts the scale of the statistic to cover the full range from 0 to 1. So, Nagelkerke R value is used as Pseudo-R square value in this study. Pseudo -R square is common measure for investigating the goodness of fit of logit models.

Because of Pseudo-R squares are affected by sample size, the distribution of observations across the categories of the dependent variable, the number of independent variables, and the number of categories, is used as it is difficult to put the appropriate bench mark values (Hemmert, Schons, & Wieseke, 2018). However, Backhaus et al. (2006) cited in (Hemmert et al., 2018) recommended that label values from .2 to .4 for R square as tolerable and values higher than .4 as a good fit.

The result on table (4.13) shows that the Nagelkerke Pseudo R-square with a value of .456 (greater than .4 considered as good fit) implies about 45.6 percent of the changes in voluntary tax compliance could only be explained by explanatory variables, namely perception of government trust, tax knowledge, fairness and equity, compliance cost and reward. While the other 54.4 percent of the change in voluntary tax compliance could be explained by other endogens variables.

Table 4.1*3* Pseudo R-Square.

Cox and Snell	.401
Nagelkerke	.456
McFadden	.241

Link function: Logit.

Source; SPSS out put

4.5.6 Parallel line assumption

In ordinal logistic regression models, there is an important assumption which belongs to ordinal odds. According to this assumption parameters should not change for different categories. In other words correlation between independent variable and dependent variable does not change for dependent variable's categories, also parameter estimations do not change for cut-off point (Erkan

& Yildiz, 2014). The null hypothesis here is that the coefficients of the variables are the same across all response categories.

A high significance value test statistics indicates; the null hypothesis cannot be rejected. The following table (4.14) shows that the chi-square of 7.271c with the p value of .996 which is greater than.05 and the null hypothesis the location parameters (slope coefficients) are the same across response categories is not rejected rather accepted the null hypothesis and reject distribution of location parameter is not the same across the response variable. Means that the location parameter (slope coefficients) is distributed equally for all categories.

Table 4.1*4*; Test of Parallel Line.

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	436.019			
General	428.748[b]	7.271[c]	20	**.996**

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

4.5.7 Multicollinearity Test

When two or more independent variables in the regression model are correlated, multicollinearity occurs. A small amount of multicollinearity can occasionally result in significant issues, but when it is moderate to high, it becomes a problem that needs to be resolved. The majority of the time, we utilize an indicator called variance inflation factors (VIF) to identify multicollinearity. When there is correlation between predictors, the standard error of the predictor coefficients will rise, which in turn inflates the variance of the predictor coefficients. When tolerance is less than 0.10, collinearity is present. Tolerance is the amount of variation in one independent variable that cannot be explained by the other independent variables(Daoud, 2017).The more "problematic" or collinear the variable, the higher the value of VIF.

As a general rule, a variable is considered to be very collinear if the VIF of the variable reaches 10, which will occur if R square exceeds 0.90(Alin, 2010). Based om the output of SPSS version 26 the following table (4.15) summarized multilinearity level of the independent variables (perception of government trust, tax knowledge, fairness and equity. compliance cost and reward and incentives) of the study with level of variance inflation factor and tolerance level.

As indicated from the table (4.15) the tolerance level and inflation factor for the variables in the study are government trust .891, 1.122), tax knowledge (.9461.057) fairness md equity (.862,

1.160), compliance cost (.965, 1.037) and reward (.827, 1.209). all tolerance levels are above 0.1 and variance inflation factor less than 10 that is fulfilled the rule of thumb of multicollinearity So, it is possible to concluded that there is no multicollinearity of each independent variables in the study.

Table 4.15; Multicollinearity test.

Variables	Tolerance	VIF
government trust	.891	1.122
Tax Knowledge	.946	1.057
Fairness And Equity	.862	1.160
Compliance Cost	.965	1.037
Reward	.827	1.209

Source; SPSS out put

In the test of model fit. Pseudo R square, test of parallel line and multicollinearity passed all assumptions of ordinary logit regression. So, it is possible to used ordinary logit regression model in this study.

4..6 Ordered logistic regression parameter estimates

In ordinal logistic regression, the log-likelihood ratio is used to interpret the coefficient. Log-likelihood; is the probability of whether the dependent variables perceived value was predicted by the independent variables' perceived value. This likelihood function is important for estimating the probability of observing data, given unknown parameters of (α and β). Similar to other probabilities the likelihood varies from 0 to 1. The log-likelihood function is a logarithm function and it is easier to work. In the process of comparing different models, log-likelihood will be used

Table 4.16; Parameter Estimates.

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[COMP = 1]	2.941	.883	11.093	1	.001	1.210	4.672
	[COMP = 2]	5.737	.945	36.840	1	.000	3.884	7.590
Location	[GOVT=1]	1.939	.712	7.417	1	.006	.544	3.335
	[GOVT=2]	1.487	.486	9.351	1	.002	.534	2.440
	[GOVT=3]	1.027	.462	4.948	1	.026	.122	1.932
	[GOVT=4]	.423	.476	.787	1	.375	-.511	1.356

[GOVT=5]	0ᵃ	.	.	0	.	.	.
[TAKN=1]	1.765	.574	9.453	1	.002	.640	2.891
[TAKN=2]	1.894	.537	12.437	1	.000	.841	2.946
[TAKN=3]	2.125	.548	15.036	1	.000	1.051	3.198
[TAKN=4]	1.009	.593	2.895	1	.089	-.153	2.172
[TAKN=5]	0ᵃ	.	.	0	.	.	.
[FAE=1]	1.643	.720	5.211	1	.022	.232	3.053
[FAE=2]	1.352	.595	5.172	1	.023	.187	2.518
[FAE=3]	1.342	.588	5.214	1	.022	.190	2.494
[FAE=4]	1.055	.624	2.863	1	.091	-.167	2.278
[FAE=5]	0ᵃ	.	.	0	.	.	.
[COC=1]	-2.146	.535	16.083	1	.000	-3.194	-1.097
[COC=2]	-1.437	.474	9.191	1	.002	-2.366	-.508
[COC=3]	-1.080	.462	5.456	1	.019	-1.986	-.174
[COC=4]	-.815	.473	2.964	1	.085	-1.742	.113
[COC=5]	0ᵃ	.	.	0	.	.	.
[REW=1]	2.668	.521	26.192	1	.000	1.646	3.689
[REW=2]	2.601	.477	29.692	1	.000	1.665	3.536
[REW=3]	2.068	.499	17.152	1	.000	1.089	3.046
[REW=4]	1.167	.581	4.031	1	.045	.028	2.305
[REW=5]	0ᵃ	.	.	0	.	.	.

Link function: Logit.

Source; SPSS out put

The parameter estimates table 4.16) contains, estimate/coefficient or beta value (β), standard error, p value or significant value, and confidence interval. The beta values and p values are the most important elements in this model. To interpret the outcome of ordinary logistic regressions it is better to know the coefficient value and their association between the independent and dependent variables in the study.

P-value/significant level- was important and crucial to decide the significant of variable for this study

Coefficient(B)-The coefficient shows the increments and the declined rate of dependent variable. However, beta is important for interpretation in continues variable, it is difficult to interpret in ordinal logistic regression because the relationship between the dependent and independent variable is not linear. The best way to interpret the ordinal logistic regression is odd ratio (Exp(B)) instead of beta value.

The parameter estimate coefficient in table (4.16) was used in this study to identify the influence of factor variables or independent variables (government trust, tax knowledge, fairness and equity, compliance cost and reward) with the outcomes or dependent variable (voluntary tax compliance behavior). From table 4.16, it is possible to summarize government trust with significant values on each category (p value .006, .002, .026 at least three were significant) has positive and significant effect on voluntary tax compliance in Bahir Dar city category A and B tax payers On the same fashion tax knowledge with significant value across the categories (p value .002,.000,.000) has positive and significant effect on voluntary tax compliance in category A and B tax payers in Bahir Dar city administration.

In addition to government trust and tax knowledge perception of fairness and equity with significant value of each category (p value .022, .023, .022 also has statistically positive and significant effect on voluntary tax compliance in category A and B tax payers in Bahir Dar city administration. On the other hand, compliance cost with significant value across the category (p value. .000, .002, .019 at least three are significant) has negative and significant effect on voluntary tax compliance in Bahir Dar city category A and B tax payers. Finally reward and incentive with significant value for each category (p value.000, .000,.000,.045) has positive and significant effect on voluntary tax compliance behavior in Bahir Dar city administration category A and B tax payers.

From parameter estimate table (4.16) the following logit equations were developed for significant variable categories.

1 = low level of voluntary tax compliance behavior and 2= medium level of voluntary tax compliance behavior., which are cut points or thresholds.

Equation 1. $\log \dfrac{p1}{p2+p3}$

$$y1 = 2.941 + 1.939GOVT(SA) + 1.487GOVT(A) + 1.027\ GOVT(N) + 1.765TAK(SA)$$
$$+ 1.894TAK(A) + 2.125TAK(N) + 1.643FAE(SA) + 1.352FAE(A)$$
$$+ 1.342FAE(N) - 2.146COC(SA) - 1.080COC(A) - 1.43COC(N)$$
$$+\ \ 2.668REW(SA) + 2.601REW(A) + 2.068REW(N) + 1.167REW(DA)$$

Equation 2. $\quad \log \dfrac{p1+p2}{p3}$

$$y2 = 5.737 + 1.939GOVT(SA) + 1.487GOVT(A) + 1.027\ GOVT(N) + 1.765TAK(SA)$$
$$+ 1.894TAK(A) + 2.125TAK(N) + 1.643FAE(SA) + 1.352FAE(A)$$
$$+ 1.342FAE(N) - -2.146COC(SA) - -1.080COC(A) - -1.43COC(N)$$
$$+\ \ 2.668REW(SA) + 2.601REW(A) + 2.068REW(N) + 1.167REW(DA)$$

For parameter estimate table the Likert scales were re coded in to 1= strongly agree (SA),2= agree (A), 3 = neutral (N) ,4 = disagree (DA) and 5= strongly disagree (SD).

4.6.1 Ordinal Logistic Analysis of Determinants of Voluntary Tax Compliance

When the response variable is categorized according to its order of magnitude, ordinal/ordered logistic regression should be used (Nwakuya & Mmaduka, 2019). The proportional odds model is the most widely used model in ordinal logistics regressions. The exponential estimate beta value or odds ratio can be used to determine the relation of the factor variables to dependent variable. d Odds ratio, as a value that indicates the strength of association between each explanatory variable in the model and the response variable.

Table 4.17; Odds ratio (Exp(B)).

Parameter		Sig.	Exp(B)	95% Wald Confidence Interval for Exp(B) Lower	Upper
Threshold	[compliance level=1]	.001	18.942	3.355	106.941
	[compliance level=2]	.000	310.119	48.638	1977.332
[Perception of Government trust=1]		.006	6.953	1.722	28.072
[Perception of Government trust=2]		.002	4.424	1.706	11.474
[Perception of Government trust=3]		.026	2.793	1.130	6.903
[Perception of Government trust=4]		.375	1.526	.600	3.882
[Perception of Government trust=5]		.	1	.	.

[Tax knowledge=1]	.002	5.844	1.896	18.007
[Tax knowledge=2]	.000	6.643	2.319	19.030
[Tax knowledge=3]	.000	8.369	2.860	24.492
[Tax knowledge=4]	.089	2.744	.858	8.776
[Tax knowledge=5]	.	1	.	.
[Fairness and equity=1]	.022	5.169	1.261	21.180
[Fairness and equity=2]	.023	3.867	1.205	12.404
[Fairness and equity=3]	.022	3.827	1.209	12.109
[Fairness and equity=4]	.091	2.873	.846	9.755
[Fairness and equity=5]	.	1	.	.
[Compliance cost=1]	.000	.117	.041	.334
[Compliance cost=2]	.002	.238	.094	.602
[Compliance cost=3]	.019	.340	.137	.840
[Compliance cost=4]	.085	.443	.175	1.119
[Compliance cost=5]	.	1	.	.
[Reward=1]	.000	14.407	5.187	40.021
[Reward=2]	.000	13.471	5.286	34.326
[Reward=3]	.000	7.907	2.972	21.040
[Reward=4]	.045	3.211	1.028	10.028
[Reward=5]	.	1	.	.

Source: SPSS v.26 out put

Independent variables whose corresponding odds ratio or Exp(B) are **significantly greater than 1.0** have significant **positive effects** on the response variable in the model. However, variables whose odds ratio (exponential beta value) **significantly less than 1.0** have a **negative effect** on the response or dependent variable on the other side independent variables with ORs **close to 1.0** have **no effect** on the response variable(Liu, 2009).

According to Lee (2019) cut points are intercepts of the Ordinal Logistic Regression (OLR) that represent the threshold and not used in the interpretation of the analysis.

The interpretation was made only for a statistically significant variable.

In this analysis factor variables response strongly dis agree was used as preference point.

4.7 Discussions of the result
4.7.1 perception of Government trust

H1; Perception of government trust has positive and significant effect on tax compliance

Accordingly, Liu (2009) odds ratio value greater than one significantly affect the response variable positively. In table (4.17) odds ratio value of government trust are greater than one (6.953, 4.424, 2.793) and p value is less than .05 (.006, .002, .026 at least three are significant). This implies that government trust has positive and significant effect on voluntary tax compliance behavior in category A and B taxpayers in Bahir Dar city administration. As shown in the odds' ratio table (4.17) taxpayers' response strongly agree (6.95 and p value .006) which tells that category A and B taxpayers responded strongly agree with perception of government trust were 6.95 times more likely high compliance than taxpayers responded strongly disagree, when other things remain constant. Meaning that respondents responded strongly agree with the perception of government trust are high compliant compared to other taxpayers who responded strongly disagree.

In addition, category A and B taxpayers in Bahir Dar city responded with in the perception of government trust agree were 4.424 (p value of .002), which explains that taxpayers' perception of government trust responded agree were 4.424 times more likely high voluntary tax compliance than taxpayers responded strongly disagree, holding other things constant. Neutral respond, responded by taxpayers with perception of government trust odds ratio value was 2.793 and p value of less than .05(.026). It indicates that category A and B taxpayers with perception on government trust responded neutral were highly compliant than taxpayers responded strongly disagree by odds' ratio 2.793, other things remain constant.

Totally the value of odds ratio implies that category A and B tax payers who trust government were more likely compliant than tax payers who do not trust the government. Meaning that higher perception on government trust increase voluntary tax compliance behavior for category A and B tax payers in Bahir Dar city and lower perception decrease the level of voluntary tax compliance with in the taxpayers.

The taxpayers who do not trust the government will have a greater doubt about how the taxes collected by the government are spent. Taxpayers will support the government's tax-related decisions when they perceive the government as idea trustworthy, but will not support those decisions if they do not have confidence (Rudolph, 2009). The result of this study is consistent with the result of (Benno Torgler (2003)) with stating that, if the confidence of the taxpayers is

high to the government, the taxpayers will be more willing to fulfill their tax obligations, on the other hand Beck and Dye (1982) found that the taxpayers who trust the government will show a positive attitude towards their tax liabilities. Beck and Dye (1982) concluded that taxpayers who do not trust the government think that the taxes are too high and pushes them to evade tax.

The result of the study also similar to finding of Jimenez and Iyer (2016b),Richardson (2008), Wahl, Kastlunger, and Kirchler (2010) and(I. Wahl, B. Kastlunger, E. J. L. Kirchler, & Policy, 2010) According to the political legitimacy theory, tax compliance is influenced by the extent that citizens trust their government (Kirchler et al., 2008b). The result of this study which implies taxpayers' perception of government trust has direct effect on their compliance level is similar with the idea of political legitimacy theory.

4.7.2 Tax knowledge

H2; Tax knowledge has significant and positive effect on tax compliance behavior

Table (4.17) above shows that odds ratio value of tax knowledge in each category was greater than one and significant p value less than 0.05 (at least three were significant). Therefore, tax knowledge has positive and significant effect on tax compliance with p value less than 5 percent.

Category A and B taxpayers in Bahir Dar responded strongly agree for tax knowledge odds ratio were 5.844 (p value.002), which indicate taxpayers who responded strongly agree with in tax knowledge were 5.844 times more likely high compliance, when compared to taxpayers responded that strongly disagree, other thing hold constant in the model. On the other hand, odds ratio for taxpayers responds with in tax knowledge agree was 6.643 and p value .000. This explains that taxpayers responded agree in tax knowledge were 6.643 times more likely high voluntary compliance than taxpayers who responded strongly disagree with in tax knowledge, other thing hold constant. Odds ratio for neutral responding were 8.369 (p value.000). This implies that when other factors remain constant in the model, taxpayers in Bahir Dar (category A and B) said neutral with in tax knowledge were 8.369 times high voluntary compliance than taxpayers responded strongly disagree.

The result of the study summarized that tax payers who have good tax knowledge were more compliance than tax payers who did not have good knowledge about tax and related issues. this implies that tax knowledge has positive and significant effect on voluntary compliance level in Bahir Dar city administration category A and B taxpayers. Several researchers found the same result on the effect of tax knowledge and tax compliance. For instance. Machogu and Amayi

(2016) found taxpayer education will provide the necessary tax knowledge to comply with the tax matter and tax knowledge change the perceptions and attitudes towards tax-compliance by creating more positive attitudes. On the other study Palil (2010 discovered that tax knowledge has positive and significant effect on compliance behavior.

Studies in Ethiopia discovered the same result to this study, which implies tax knowledge affects positively and significantly on tax compliance behavior. For instance, Jemberie (2020) Assfaw and Sebhat (2019), Deyganto (2018b) showed that compliance is positively affected by tax knowledge and awareness of tax payers,

However the outcome of this study did not consistent with the result of A. Ahmed (2013) and Geeroms and Wilmots (1985) concluded that tax knowledge have a negative effect on compliance behavior. This means when taxpayers get enough tax knowledge, they will use this knowledge to find a loophole which can help escape from paying their tax liability that means high tax knowledge reduce tax compliance.

Furthermore, the result of the study shares the idea of TPB theory which states. individual behavior control is closely linked to his/her skills, knowledge, and other assistances (Mathieson, 1991) .

4.7.3 Fairness and equity of tax system.

H3; fairness and equity in the tax system has positive and significant effect on voluntary tax compliance behavior.

A shown in table (4.17) odds ratio 5.169 for strongly agree with in fairness and equity of tax system implies, when other factors remain constant, taxpayers who believed that the current tax system is very fair (responded strongly agree) were 5.169 times more likely high voluntary compliance than tax payers who did not have a good perception for the fairness of tax system (responded strongly diss agree). In similar way taxpayers who responded agree in fairness and equity of tax system odds ratio 3.867indicate that taxpayers who responded agree were 3.867 times more likely high compliance, compared to tax payers responded strongly disagree. Odds ratio 3.827 in neutral response with in fairness and equity of tax system shows that taxpayers responded neutral in fairness and equity of tax system were 3.827times more likely high voluntary compliant than those taxpayers who responded strongly disagree in fairness and equity of tax system, other thing remains constant.

Totally, the higher odds ratio in fairness and equity (strongly agree, agree and neutral) and p value less than.05 (022, .023, .022at least three were significant) indicates that fairness on the tax system has positive and significant relation with voluntary tax compliance behavior in this study.

According to comparative treatment theories 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). This means when tax system is not fair tax payer will be low compliant. The finding of this study concluded that category A and B tax payers in Bahir Dar who have a good perception for fairness and equity are more compliance than tax payers who did not perceive fair and equitable tax system. The outcome of this study in fairness and equity is consistent with several empirical studies such as Chan et al. (2000) , Jayawardane (2015) and Deyganto (2018a) found that fairness and equity in the tax system has direct and significant relation with tax compliance behavior, Similarly, studies conducted in Ethiopia like Adimassu and Jerene (2016), Ademe and Simret (2020) and Tehulu and Dinberu (2014) concluded that tax compliance behavior is affected by fairness and equity in the tax system significantly and positively. However the finding of this study is not similar to some studies conducted in our country Ethiopia like Deyganto (2018b) , Jemberie (2020) and Engida and Baisa (2014) showed that fairness and equity of tax system has insignificant effect on tax compliance behavior. Which means fairness and equity has no relation or effect on tax compliance behavior, but outcome of this study states that, perception of fairness and equity in the tax system has positive and significant effect on voluntary tax compliance behavior.

4.7.4 Tax compliance cost

H4; tax compliance cost has statistically negative and significant effect on voluntary tax compliance level.

When odds ratios are less than one and p value less than .05 the factor variables have significant and negative relation with the outcome or dependent variable(Liu, 2009). As shown in above table (4.17) odds ratio for compliance cost is less than1.0 (.117, .238, .340) and p value are less than .05 (.000, .002,.019 at least three are significant) for strongly agree, agree and neutral responses, which implies tax compliance cost has statistically negative and significant effect on voluntary tax compliance behavior in Bahir Dar city administration category A and B taxpayers.

Odds ratio .117 in table (4.17) implies that taxpayers who said strongly agree in compliance cost were .117 times less likely high voluntary compliance, when compared to taxpayers who said to strongly diss agree, other factors remain constant. In addition, odds ratio for taxpayers responded agree in tax compliance cost were. 238.This value explain that, when other factors remain constant, taxpayers responded agree with compliance cost were .297 times less likely high voluntary compliance than tax payers responded strongly disagree. As stated in table 4.17, odds ratio (exponential beta value) .340 implies in Bahir Dar city category A and B tax payers responded neutral with in compliance cost were .340 times less likely high voluntary compliant than who responded strongly dis agree, when other factors being constant.

The outcome of the study is similar to Mahangila (2017) who concluded that high levels of tax compliance costs do have a bearing on tax compliance levels, The result implied that high tax compliance cost leads tax payers to evade tax, and Farida and David (2018) also discovered the same result for the effect of compliance cos on tax compliance behavior.

Furthermore, finding of this study is similar to some research conducted in Ethiopia as Ademe and Simret (2020) Admasu and Shallo (2018) result indicates that compliance cost has positive and significant effect on tax compliance behavior.

The implication behind the significant and negative relation of compliance cost and compliance level is that high price of cash register machine, additional money payment for tax advisors and the time spent to record tax documents is so much and payment for accountants and sales man in addition to their basic salaries is to be high,

4.7.5 Reward and incentives

H5; Reward has positive and significant effect on tax compliance.

As indicated in table (4.17) above, the odds ratio 14.407 implies that tax payers (category A and B) in Bahir Dar city responded strongly agree in reward were 14.407 times more likely high compliance than tax payers responded strongly disagree with in reward and incentive, other thing hold constant. In addition, category A and B taxpayers in Bahir Dar responded agree with reward and incentive were 13.471of odds ratio. Which explains that when other factors being constant taxpayers responded agree with in reward and incentive were 13.471times more likely high compliance than who responded strongly disagree in reward. Furthermore, the odds ratio for neutral responded were 7.907, Which implies that taxpayers responded neutral for reward and incentives were 7.907time more likely high voluntarily compliance, when compared to tax payers

who responded strongly dis agree. In similar way, taxpayers who responded disagree were 3.211times more likely high voluntary compliance than those tax payers responded strongly disagree in the idea of reward, when other factors in the model being constant.

According to different empirical studies like (Breuer, 2013; Feld et al., 2007; Kastlunger et al., 2011) result reward and tax compliance level have statistically significant and positive relations. Similarly, the finding of this study stated that reward and incentive has an odds ratio more than 1.0 and p value less than.05 across all categories. Which implies reward and incentive have statistically significant and positive effect on voluntary tax compliance level in Bahir Dar category A and B tax payers.

The implication for the effect of reward and incentive is that, tax payers believed that increase reward rather than punishment leads them to be compliant and they thought reward create a good will for the business and gaining reward from the government makes them to feel patriot citizen in the country.

Decision summary of the hypothesis

Based on the result of odds ratio in ordinary logit regression output, all hypotheses were accepted rather than rejected in this study The decision of acceptance and rejection of the hypothesis depends on the alpha value, in which is 5% significance level is used to identify association strength and significance of variables to the factors that affect tax compliance behavior. Based on spear man's correlation and odds ratio factor variables (perception of (government trust, tax knowledge, fairness and equity and reward and incentive) have positive and significant association on voluntary tax compliance behavior, but compliance cost has negative and significant effect on tax compliance behavior.

Table 4.1*8; Decision of hypothesis.*

No.	Hypothesis statement	Significant level	Decision
1	Perception of government trust has positive and significant effect on tax compliance	Significant	Accept
2	Tax knowledge has significant and positive effect on tax compliance behavior.	Significant	Accept
3	Fairness of tax system has significant and positive effect on tax compliance behavior.	Significant	Accept

| 4 | Compliance cost has negative and significant effect on tax compliance behavior. | Significant | Accept |
| 5 | Reward and incentive affect tax compliance behavior significantly and positively. | Significant | Accept |

CHAPTER FIVE; CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Tax is a compulsory payment by the people to the government for which there is no direct return to the taxpayers. Whereas tax compliance is the willingness of taxpayers to follow tax laws to achieve economic equilibrium in a country. However, tax non-compliance is a serious problem for many tax authorities and is not an easy task to convince taxpayers to comply. tax evasion and avoidance are the main feature of tax payers' noncompliance behavior. The primary objective of this study was to identify the effect of determinant factors (perception of government trust, tax knowledge, perception of fairness and equity of tax system, tax compliance cost and reward) on voluntary tax compliance level with category A and B tax payers in Bahir Dar city administration. In descriptive statistics result mean value for tax knowledge government trust fairness and equity, and compliance cost were medium. On the other hand, the large mean value for reward indicates taxpayers have high level of agreement for the concept of reward and incentive and believes reward increase level of voluntary compliance rather than penalty. The level of compliance is grouped in to low, medium and high based on the compute mean. And most of the tax payers in the study were included in medium level of compliance at the time of the study.

Ordinary logit regression model is used when a dependent variable has three and more categories and the values of each category have a meaningful sequential order. Accordingly, the ordinary logit regression output processed by SPSS version 26 perception of government trust, tax knowledge, perception of fairness and equity on the tax system, tax compliance cost and reward and incentive, all factor variables have significant p values and odds ratio or exponential beta value defer from one. But the effect differs in direction. Perception of government trust, tax knowledge, fairness and equity and reward have positive and significant effect, whereas tax compliance cost has negative and significant effect on voluntary tax compliance level in this study.

5.2 Recommendation

Based on the finding of the study the following recommendations are suggested.

- The finding of the study show that government trust has positive and significant effect on voluntary tax compliance behavior in Bahir Dar city category A and B tax payers. To increase the perception of government trust by tax payers, the tax administration office provides accountability and transparency for the action they performed. As indicated in the descriptive statistics result the general mean value for fair destitution of funds for each region were low. There for, government should distribute the annual budget depending on the number of population and other situational factors (drought, war) for each region in the country and spent the part of tax revenue on important and essential projects to the society. Finally, the researcher recommended for government, struggle corruption made by government authorities and take appropriate measurement for corrupt government employees, especially tax authorities and all employees in revenue and custom office to enhance the degree of trusty of government by the taxpayers.

- On the result of odds ratio tax compliance level is affected by tax knowledge positively and significantly in Bahir Dar category A and B tax payers. This means taxpayers who have a good knowledge are more compliant than taxpayers do not have any awareness about tax. Their fore to increase the level of voluntary tax compliance revenue Authorities should create awareness for taxpayers through ongoing training programs, media advertisements, workshops and seminars. However. awareness should go beyond merely providing taxpayers with tax knowledge. It should be expanded to include consultation meetings and discussions with religious leaders, well-known persons in the society, or other influential people. This will offer assistance to impact the whole society through these persuasive people who have acknowledgment in their respective groups.

- As stated in the finding of the study, fairness and equity in the tax system has positive and significant effect. Means when fairness of the tax system is good tax payers become voluntary compliant. Then to increase the voluntary level of tax compliance with category A and B taxpayers in Bahir Dar Federal tax office generally and Bahir Dar revenue office specifically should create fair and clear tax system. For instance, treat the taxpayers without any discrimination and bias and take the same measurement for taxpayers who violet the tax rules and norms.

- The finding of the study states that high compliance cost is one of the reasons that taxpayers to be non-compliant or they should evade their taxes. To solve such problem caused by high compliance cost, the tax authority should use different mechanism to minimize additional costs spent by the tax payers. For instance, organizing tax advisories with little payment and decrease taxpayers additional cost paid for tax advisors.

- The economic output model in this study shows reward has direct and significant effect on voluntary tax compliance behavior and the result of descriptive statistics indicates the current reward system for honest taxpayers is not good. Therefore, Bahir city revenue office should improve the reward method to increase level of voluntary tax compliance. For instance, the office deducts some percent of tax liability for honest taxpayers and give special chance in the time of government bidding, in addition the tax and revenue office provide certificates for better taxpayers and announce them in big meeting.

5.3 limitation of the study and suggestion for Future Research.

This study has been done carefully. However, there are some limitations in the study. questions derived for tax compliance and factor variables tax knowledge, perception of government trust, fairness and equity, tax compliance cost and reward and incentive were limited and there are different types questions or ideas of knowledge, fairness, compliance cost and reward, which are not addressed in this study. Then the researcher recommended for future study to conduct determinant of voluntary tax compliance by adding the questionaries for dependent and independent variables.

The pseudo-R square value .456 indicates, the dependent variable voluntary tax compliance is explained by 45.6% of the independent variables (perception of government trust, tax knowledge, fairness and equity, compliance cost and reward) in the study and the other variable describe 54.4%. There for future researchers should include other variables in addition factor variables included in this study. And also, this study conducted in only Bahir Dar city category A and B tax payers which is limited and particular area and it is not enough to show the effect of factor variable on compliance level. So, the researcher has recommended that future researchers conduct the study through all town of the region (Amhara region).

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APPENDIX; QUESTIONNAIRES

Bahir Dar University

College of Business and Economics

Department of Accounting and finance

Dear respondents

The purpose of this study is to identify determinant factors of voluntary tax compliance of category A & B tax payers in Bahir Dar 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. You are chosen at random for the study. Your contribution to this study is important, and I appreciate your willingness to take part. Therefore, I ask you to fill in questionnaire carefully and with your best knowledge in every respect Thank you for your valuable thoughts and suggestions.

The confidentiality of any information you give us, will be respected (keeps secret).

The study is conducted by:

MeleseWuletaw(MSc student at Bahir Dar university)

Phone number   +251988534241 (09 88 53 42 41

Email address   meleseweletaw@gmail.com

No need of writing your name.

Section one respondents' background.

1. Gender   male ☐   female ☐
2. Age   from 21 – 35 ☐   from 36 -50 ☐   above 50 ☐
3. Level of education   below grade 10 ☐   diploma ☐

    grade 10 compilated ☐   degree and above ☐
4. Business category   category A ☐   category B ☐
5. Business sector you work

    ☐ Manufacturing   . ☐ Services (hotel, maintenance, food & beverage, etc.)

    . ☐ General merchandising & trade   . ☐ Mining   ☐ Construction
6. How long your company has been in business?   Below 1 year ☐   5-10 years ☐

    1- 5 years ☐   more than 10 years ☐

Section two tax compliance behavior (Dependent variable)

Please put a tick mark "√" in front of the boxes of your choice once only. By rate your response based on the following weighted scale

1= Strongly Disagree (SDA); 2= Disagree (DA); 3 = Neutral (NU); 4= Agree (AG) And 5 = Strongly Agree (SA)

No.	Statements related to tax compliance behavior	5 SA	4 A	3 N	2 DA	1 SDA
1	I believe that paying tax is the right and natural things to do					
2	I report the correct amount of my income in the required time period					
3	I feel good while obeying for tax law and procedure to declaring and paying honestly.					
4	I will pay tax even if tax audit does not exist.					

Section three determinant of tax compliance (independent variables)

Questions on section two will be used to identify determinant factors of tax compliance. Please kindly respond to the following statements depending on your **degree of agreement** or **disagreemen**t to each of the statements.

NO.	Statements related to perception of government trust	5	4	3	2	1
1	I don't think that government discriminates against me because of my religion.					
2	I believe that distribution of funds to different regions is fair.					
3	I don't think that government discriminates against me because of my race, or ethnic background.					
4	I believe that government is transparent and accountable for each activity.					
5	I believe that large portion of the money collected is spent on worthy projects in each region.					

6	I believe that government provides Services and infrastructure s for each region equally.					
b	**Ideas related to tax knowledge**					
7	Sufficient trainings are given to me on the purposes of tax and its regulations					
8	Trainings helped me to pay taxes due within the prescribed period.					
9	I know which income should be included or excluded in determining the taxable income.					
10	I know which expanse should be deducted from my income to compute my tax liability.					
11	I am aware that being noncompliant is punishable by law.					
c	**Statements on fairness and equity of tax system**					
12	The present tax system does not affect the higher income level persons.					
13	I pay about the same amount of taxes as others making the same income					
14	I believe that I pay my fair share of tax burden under the current tax system					
15	I feel that I don't pay high taxes when compared to the services I get from the government.					
16	There are no tax laws that treat people at the same income level differently.					
17	I feel that the present tax system in Ethiopia is based on tax payers' ability to pay.					
d	**Statements related to compliance cost**					
18	I spent much time to record and maintain tax related files.					
19	I have spent much time on activities associated with tax objection, inquiries and appeal.					
20	Cost of cash register machine, stationary, and computer is high					
21	I pay much money for my tax advisors.					

22	Cost of staff such as accountant & sales man is high.					
e	**Statements related to reward**					
23	Compliance level can be achieved by increasing tax incentives than by increasing tax penalties					
24	I believe that rewards like tax discounts, motivate to pay correct tax at the given time.					
25	To be rewarded for being tax compliant will confirm my love for my country.					
26	I believe that reward certificate creates a good will for my business.					
27	I believe that the current reward system for honest tax payers in our city is good					

ባህር ዳር ዩኒቨርሲቲ

የቢዝነስ ና ኢኮኖሚክስ ኮሌጅ

አካዉንቲንግ ና ፋይናንስ ትምህርት ክፍል

ውድ የተከበሩ የጥናቱ ተሳታፊ፤

የዚህ ጥናት ዋና አላማ ግብር ከፋዮች ለግብር ህጉ ተገዥ እንዲሆኑ የሚያደርጉ ወሳኝ ነገሮችን ማጥናት ሲሆን ጥናቱ የሚካሄደውም በባህር ዳር ከተማ አስተዳደር ባሉ የደረጃ "ሀ" እና "ለ" 'ግብር ከፋዮች ላይ ነው ።: ጥናቱ የሚደረገው በዋናነት ለሁለተኛ ዲግሪ ማሟያነት ወይም ትምህርታዊ አላማ ነው።: እርስዎ በዚህ ጥናት ላይ እንድትሳተፉ የተመረጡት በዕጣ ሲሆን የእርስዎ መልካም ፈቃደኝነትና በሃቀኝነት መመለስ ለጥናቱ ውጤታማነት አስተዋፅኦ ያደርጋል፡

የሚሰጡትም መረጃ ምስጢራዊነት ይከበራል (ምስጢር ይጠብቃል)።:

ስም መጻፍ አያስፈልግም

ጥናቱ የሚካሄደው በ:

መለሰ ውለታው (በባህር ዳር ዩኒቨርሲቲ የMSc ተማሪ)

ስልክ ቁጥር   +251988534241 (09 88 53 42 41)

የኢሜል አድራሻ   melesweletaw@gmail.com

ስለትብብረዎ በቅድሚያ አመሰግናለሁ !!

ክፍል አንድ: አጠቃላይ መረጃዎች፤

1. ጾታ   ወንድ ☐   ሴት ☐

2. እድሜ   ከ21-35 ☐   ከ36-50 ☐   ከ50 በላይ ☐

3. የትምህርት ደረጃ

   ከ10ኛ ክፍል በታች ☐   ዲፕሎማ ☐

   10ኛ ክፍል ☐   ዲግሪ እና ከዚያ በላይ ☐

4. እርስዎ የሚሰሩት የቢዝነስ ዘርፍ

   ማምረት ☐ የማዕድን ግንባታ ☐ አገልግሎት ☐ አጠቃላይ ግብይት ☐

5. የየትኛው ደረጃ ግብር ከፋይ ነዎት   ደረጃ ሀ ☐   ደረጃ ለ ☐

6. ኩባንያዎ ለምን ያህል ጊዜ በንግድ ስራ ላይ ቆይቷል?

   ከ 1 ዓመት በታች ☐   5-10 ዓመታት ☐

   1-5 አመት ☐   ከ 10 አመት በላይ ☐

ክፍል ሁለት፤ የግብር ተገዢነት;

ተ.ቁ	የግብር ህግ ተገዢነት ጋር የተያያዙ መግለጫዎች	5	4	3	2	1
1	ግብር መክፈል ትክክለኛ እና ተፈጥሯዊ ነገር ነው ብዬ አምናለሁ።					
2	ትክክለኛ ገቢየን በወቅቱ ሪፖርት አደርጋለሁ።					
3	ለግብር ህግ እና አሰራር ስታዘዝ እና ግብር በታማኝነት ስከፍል ጥሩ ስሜት ይሰማኛል።					
4	የግብር ኦዲት ባይኖርም ግብር እከፍላለሁ።					

ክፍል ሦስት፤ የግብር ተገዢነትን የሚወስኑ ነገሮች;

በክፍል ሁለት ላይ ያሉ ጥያቄዎች የግብር ተገዢነትን የሚወስኑ ምክንያቶችን ለመለየት ጥቅም ላይ ይውላሉ። እባኮዎትን በደግነት ለሚከተሉት መግለጫዎች እንደ እርስዎ የስምምነት መጠን ይወስኑ።

(እባክዎ (√) ምልክት ከተሰጡት ባለ 5 ሚዛኖች ሳጥኖች ላይ ምልክት ያድርጉ።

በጣም አልስማም ካሉ = 1.   ገለልተኛ ካሉ = 3 ,   በጥብቅ እስማማለሁ ካሉ = 5
አልስማማም ካሉ = 2,   እስማማለሁ =   4,

ተ.ቁ	በመንግስት ላይ የመተማመን ግንዛቤ ጋር የተያያዙ መግለጫዎች	5	4	3	2	1
1	መንግስትበሃይማኖቴ ምክንያት አድልዎ የሚያደርግብኝ አይመስለኝም።					
2	ለተለያዩ ክልሎች የሚደረገው የገንዘብ ክፍፍል ፍትሃዊ ነው ብዬ አምናለሁ።					
3	መንግስት በዘርዬ ወይም በጎሳዬ ምክንያት አድልዎ ያደርግኛል ብዬ አላስብም.					
4	መንግስት ለእያንዳንዱ ተግባር ግልፅ እና ተጠያቂ ነው ብዬ አምናለሁ።					
5	ከተሰበሰበው ገንዘብ ውስጥ አብዛኛው ክፍል በየክልሉ ለሚሰሩ ተገቢ ፕሮጀክቶች እንደሚውል በመንግሥት ላይ ከፍተኛ እምነት አለኝ ።					
6	መንግሥት ለእያንዳንዱ ክልል አገልግሎቶችን እና መሠረተ ልማእቶችን በእኩል ደረጃ ይሰጣል ብዬ አምናለሁ።					
	ከግብር እውቀት ጋር የተያያዙ ሀሳቦች					
7	በግብር እና ደንቡ ላይ ትምህርትእና በቂ ስልጠናዎች ተሰጥተውኛል።					

8	ስልጣናዎች በትክክለኛው ጊዜ ውስጥ ግብሩን እንድከፍል ረድተውኛል።					
9	ግብር የሚከፈልበትን ገቢ ለመወሰን የትኛው ገቢ መካተት እንዳለበት ወይም እንደሌለበት በደንብ አውቃለሁ።					
10	የግብር እዳዬን ለማስላት የትኛው ወጪ ከገቢዬ ላይ መቀነስ እንዳለበት አውቃለሁ።					
11	የግብር ህግን አለማክበር እንደሚያስቀጣ አውቃለሁ ::					
	በግብር ስርዓት ፍትሃዊነትጋር የተያያዙ መግለጫዎች					
12	አሁን ያለው የታክስ ስርዓት ክፍተኛ ገቢ ያላቸውን ሰዎች አይጎዳም።					
13	ተመሳሳይ ገቢ ካላቸዉ ሰዎቾች ጋር ተመሳሳይ መጠን ያለው ግብር እከፍላለሁ።					
14	ከመንግስት ካገኘሁት አገልግሎት ጋር ሲወዳደር ክፍተኛ ግብር የምከፍል አይመስለኝም ::					
15	አሁን ባለው የታክስ ስርዓት ትክክለኛ የግብር እዳዬን እከፍላለሁ ብዬ አምናለሁ።					
16	በተመሳሳይ የገቢ ደረጃ ላይ ያሉ ሰዎችን በተለየ መንገድ የሚያስተናግዱ የግብር ሕጎች የሉም።					
17	አሁን በኢትዮጵያ ያለው የግብር ስርዓት በግብር ክፋዮች የመክፈል አቅም ላይ የተመሰረተ እንደሆነ ይሰማኛል።					
	ከተገዢነት ዋጋ ጋር የተያያዙ መግለጫዎች					
18	ከግብር ጋር የተያያዙ መረጃዎችን ለማያዝና ለማደራጀት የሚዋስደው ጊዜ ከፍተኛ ነው ::					
19	ከግብር መቃወሚያ፣ጥያቄዎች እና ይግባኝ ጋር በተያያዙ እንቅስቃሴዎች ላይ የሚዋስደው ጊዜ ከፍተኛ ነው ::					
20	የሽያጭ መመዝገቢያ መሳሪያ፤ ፅህፈት ዕቃዎችና የኮምፒዉተር ዋጋ ከፍተኛ ነው ::					

21	ግብርን ለማሳወቅ ለግብር አማካሪ ተጫማሪ ክፍያ እከፍላለሁ ፡፡					
22	ለሂሳብ እና ሺያጭ ባለሙያ ተጫማሪ ክፍያ እከፍላለሁ ፡፡					
	ከማበረታቻዎች ሽልማቶች ጋር የተያያዙ መግለጫዎ					
23	የግብር ቅጣቶችን ከማሳደግ ይልቅ የማበረታቻ ሽልማቶችን መጨመር ትክክለኛውን ግብር ለመክፈል ያነሳሳል፡፡					
24	ለጥሩ ግብር ከፋዮች የግብር ቅናሾችን ማድረግ ትክክለኛውን ግብር በተጠቀሰው ጊዜ ለመክፈል ያነሳሳል ብዬ አምናለሁ፡፡					
25	የሽልማት ሰርተፍኬት ለንግድ ስራ መልካም ዝና እንደሚፈጥር አምናለሁ፡፡					
26	ለግብር ተገዢ በመሆን መሸለሜ ለሀገር ታማኝ መሆንን ያረጋግጣል፡፡					
27	አሁን በከተማችን ያለው የሽልማት ስርዓት ጥሩ ነው ብዬ አምናለው፡፡					

አመሰግናለሁ!!