Coercion or Persuasion? Making Large Corporations Tax Compliant in Bangladesh

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A thesis submitted to

The University of Birmingham

for the degree of

DOCTOR OF PHILOSOPHY

International Development Department
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May 2012

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Abstract

To induce tax compliance, two opposite approaches are used: the coercive and the persuasive: firm action versus collaboration. Little attention has been paid to the comparative success of these two approaches – a situation this thesis seeks to remedy by investigating the effectiveness of three coercive and three persuasive instruments among large corporate taxpayers registered with the LTU of Bangladesh. Following an analysis of survey data using binary and multilevel logit and CHAID models, and an analysis of elite interviews employing an interpretivist approach, the findings suggest that coercion or persuasion are less likely to improve tax compliance when used separately than when used in combination, although coercion seems the more powerful of the two. Factors underlying the power of the coercive approach are the rationality and regularity of its application, along with its legal and financial imperatives. Reasons contributing to the appeal of the persuasive approach are a reduction in tax compliance costs, an improvement in accountability and a reduction in knowledge gaps between taxpayers and tax administrators, and coordination of the various tax laws.

Dedication

To my late father, Md Abul Hossain Akhand, for his endless love and encouragement

ACKNOWLEDGEMENT

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LIST OF ABBREVIATIONS

ACA- Annual Compliance Agreement
ADB- Asian Development Bank
APA- Advanced Pricing Agreements
ATO- Australian Tax Office
BIR- Bureau of Revenue
CAP- Compliance Assurance Program
CATA- Common Wealth Tax Association
CCM- Cooperative Compliance Model
CPCR - Cumulative Payment Compliance Rate
DFID- Department for International Development
EUT- Expected Utility Theory
FCA- Forward Compliance Agreement
HMRC- His Majesty"s Revenue and Customs
ICF- Internal Control Framework
ICFTU-International Confederation of Free Trade Unions
IMF- International Monetary Fund
IRS- Inland Revenue Service
LBO- Large Business Office
LBS- Large Business Service (LBS)
LTD- Large Taxpayer Department
LTU- Large Taxpayer Unit
NBR- National Board of Revenue
NTCA- Netherlands Tax and Customs Administration
OECD- Organization for Economic Cooperation and Development
RATE- Run After Tax Evaders
RRA- Responsive Regulatory Approach
SARA- Semi Autonomous Revenue Authority
TCF- Tax Compliance Framework
VPCR-Voluntary Payment Compliance Rate
VRR- Voluntary Reporting Rate
VCR- Voluntary Compliance Rate
VAT- Value Added Tax
WB- World Bank

CHAPTER I

INTRODUCTION

1.1 Introduction and Statement of the Problem

Securing income tax compliance is a commonly experienced challenge in the economics of taxation (Slemrod, 2004; Brondolo, 2009); and as a result of the extensive economic recession in many countries, the risk of tax non-compliance has shot up in recent times. On the one hand, tax non-compliance is distortionary and inequitable for the tax system; on the other, it is detrimental to the growth of fiscal consolidation (Hanlon et al., 2005; Brondolo, 2009). In order to improve tax compliance, tax agencies have introduced diverse techniques and approaches, depending on the risks and revenue characteristics associated with their taxpayers. Two opposite approaches that have dominated the tax compliance debate are the coercive and the persuasive approaches (James and Alley 1999; Torgler, 2007; Doyle et al., 2009; Kagan and Scholz, 1984; Frank, 2006). A slightly different approach from these two is the structural approach, which strives to secure tax compliance by increasing the use of withholding taxes and improving information reporting (Dressler, 2002). The common feature of these compliance techniques is that they rely on the voluntary payment of taxes by taxpayers.

The coercive tax compliance approach, also called the deterrence or stick-based approach, attempts to promote tax compliance mainly through a mix of civil penalties and tax audits; whereas the persuasive approach, also called the collaborative, cooperative or carrot-based approach, addresses tax compliance by influencing tax morale through increased taxpayer services, simplified tax law and enhanced mutual understanding, among the others.

The basic philosophy of the coercive approach (interchangeably referred to as the deterrence or stick-based approach) is that a criminal act like tax non-compliance is a rational economic behaviour (Becker, 1967; Allingham and Sandmo, 1972; Yitzhaki, 1974). As rational economic actors, individuals and corporate taxpayers conduct a cost-benefit analysis and take compliance decisions on the basis of the comparative weights of the benefits of non-compliance and the cost of punishment (Kornhauser, 2007). Deterrence theory argues that non-compliance decisions can be prevented if the cost of punishment exceeds the benefits they produce. Taxpayers under this theory are treated as „subjects" and are forced to take a compliant approach to their tax liabilities. However, in many cases coercive enforcements are found to be counterproductive, and sometimes they alienate taxpayers from the tax administration (Murphy, 2002). This implies that non-compliance is not simply a cost-benefit choice; rather, there are non-rational cognitive issues and personal norms that influence compliance behaviour. It is therefore argued that tax compliance can be better handled by the other stream of forces, loosely described as tax morale and comprised of taxpayer attitudes and beliefs (Kornhauser, 2007).

The persuasive approach, as a process-based model of regulation, is less expensive to administer (Chung and Trivedi, 2003) and according to Murphy (2007), is more influential in deterring non-compliance decisions. Murphy (2007:14) states that, "a process-based enforcement approach may be particularly effective for those who have weaker respect for the law than for those who have a strong commitment to do the right thing." There is a strong argument that respectful treatment of taxpayers and easy procedural justice received from tax agencies encourage taxpayers to go beyond their materialistic interests and leverage higher tax compliance (Morris and Lonsdale, 2004;Chung and Trivedi, 2003; Cowell, 2004; Frey,2002). Braithwaite (1995: 191, cited in Wu, 2005) claims that, "the fear of disapproval by others has more [of an] effect on crime than the fear of formal punishment." Frey (2002)

points out that respectful relations between the taxpayers and the tax agencies *crowd in* tax morale while punishment measures crowd it out and reduce the incentives to tax compliance. This raises the fundamental questions of what should be the nature of interaction between the tax authorities and the taxpayers: „cops versus robbers‟ or „service providers versus clients‟, as argued in the new-liberal view of public administration and tax governance (Tuck, 2004). Kirchler (2007) argues that taxpayers‟ idea of fairness of taxes is so diverse that it can be better achieved if governments change their attitudes from a "cops and robbers" to a service-oriented approach. In Kirchler‟s (2007:4) own words, "Whereas a „cops and robbers‟ approach is assumed to evoke mistrust and non-cooperation, a „service and client‟ approach is assumed to excite cooperation and voluntary compliance."

Despite the fact that persuasive appeals to conscience have been found to be effective in some cases (Schwartz and Orleans, 1967, for example), this strategy has had many failures as well (Blumenthal et al., 2001; McGraw and Scholz, 1991). In a comparison between normative and sanction appeals among sole proprietorship businesses, Hasseldine et al. (2007:172) find that, "the sanctions letters are generally more effective than the normative citizenship letters for reported turnover." In many cases, persuasive instruments have, however, produced mixed results (Hasseldine and Kaplan, 1992; Hite, 1997; Violette, 1989). The inconsistent outcomes of persuasive appeals may be attributable to data and methodological differences among the studies (Hasseldine et al., 2007), or to the fact that the success of the persuasive approach relies, to some extent, on the existence of the coercive approach (Hamilton, 1994).

Against this backdrop, one of the innovations developed to address the tax compliance issues of large corporations is the Large Taxpayer Unit (LTU). LTUs have adopted a compliance approach that combines both the coercive and the persuasive approaches, although it depends

more on the persuasive paradigm than the coercive (Mann, 2004; Braithwaite, 2003).[1] Tax compliance by large corporations in LTUs is managed under the self-assessment system that provides the bulk of the tax revenues.

However, as taxpayers, the large corporations are not only unique in terms of the tax revenues they provide, but also in terms of the level of risk they impose on the tax system. Large corporations hold instrumental financial and political power and a range of professional expertise to influence the "service provider versus customer" relationship" (Tuck, 2004). In addition, large corporations withhold taxes for individuals and work as the main point of tax collection, which Bird (1996:10) regards as "the equivalent of the customs barrier at the border."

Managing the income tax compliance of large corporations is particularly difficult, for they are engaged in harmful tax competition[2], and tend to under-report their income tax liabilities more than their VAT liabilities (Bergman, 2003). In nurturing the tax compliance of such an important, powerful and risky segment of taxpayers, it is worthwhile asking a basic question – are coercive or persuasive instruments more important? Traditionally, coercive techniques have tended to dominate tax compliance literature, and tax-morale-based persuasive policies are still nascent. Tax agencies must decide whether to rely on coercive instruments or to depend on persuasive and often less costly methods, such as motivation and respectful communication with taxpayers (Doyle et al., 2009; Blumenthal et al., 2001).

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[1] Ninety per cent of corporate taxes in the US and 70% in the UK are provided by large corporations (OECD, 2009), although the share of corporate taxes, as a percentage of total tax revenues, is relatively small in both these countries – 8% in the UK and 9% in the US (Auerbach et al., 2008). In developing countries, their

[2] Harmful tax completion refers to a situation where, through preferential tax rules - for example, tax under-cuts or tax holidays - countries try to attract mobile capital and, as a result, resources do not flow to the places where they might be most productively used (Harris and Oliver, 2010).

1.2 Aims and Objectives of the Study

As identified in the above-mentioned debate in tax compliance literature, the main objective of the study is to understand the contribution of coercive and persuasive tax compliance instruments in creating income tax compliance among corporate taxpayers in LTUs. The specific objectives are:

1. To measure the degree of tax compliance achieved by large corporate taxpayers in LTUs;

2. To determine the contribution of coercive and persuasive instruments to achieving tax compliance by large corporate taxpayers; and

3. To identify the underlying reasons why some instruments are important, and others are not, in the tax compliance process.

With this purpose in mind, the research will first review related literature on income tax compliance approaches in general and approaches to tax compliance by large corporations in particular. The study hopes to make a contribution to the current debate on the appropriateness of these often-conflicting techniques of tax compliance, looking particularly at the case of Bangladesh.

1.3 Main Research Question and Methodology

The study looks at how coercive and persuasive instruments contribute to an understanding of tax compliance by large corporations. It will explore the underlying reasons why some instruments are important, and some are not, in managing the compliance of the group of taxpayers cited. Obviously, the overall research question of this thesis is: ***are coercive or persuasive tax compliance instruments more important for the tax compliance of large corporate taxpayers in the LTU of Bangladesh, and why?*** In order to answer this question, the following specific research questions were formulated:

1. To what extent are large corporate taxpayers compliant?

2. What contributions do coercive instruments make to the tax compliance of large corporations?

3. What contributions do persuasive instruments make to the tax compliance of large corporations?

4. Why do some instruments contribute more to the tax compliance of large corporations than others?

The above overall and specific questions are set out in this section after a review of the related literature and identification of a gap in the knowledge produced so far by tax compliance studies. They are repeated here to maintain the logical flow of the research process. A detailed discussion takes place in section 3.2 of how data for each of these questions will be collected and analysed to provide evidence in support of the answer to the question. The questions are answered in chapters 5 to 7. Specifically, the first question measuring the tax compliance levels of large corporations is answered in chapter 5. The second and the third specific questions investigating the significance of selected coercive and persuasive instruments are dealt with in chapter 6. And the final question on why they are important is discussed in chapter 7.

Methodologically this study employs a mixed-method approach. First, a quantitative approach in the form of empirical analysis will be employed: a questionnaire survey of sample corporations will be conducted to collect data; and a statistical analysis of the data will be made through binary and multilevel logistic regressions and CHAID algorithm. Second, a qualitative enquiry will be made through elite interviews to look for a probable explanation of the statistically significant compliance instruments. Data will also be collected

through document analysis, mainly using tax office databases and corporate tax files. The study will investigate the research questions mainly from tax policy and public finance points of view. Other perspectives will be taken into full consideration in exploring probable explanations for the problem. A detailed discussion of the research perspectives is provided in section 3.9.

1.4 Scope of the Study

The study examines the role of coercive and persuasive tax compliance instruments in creating income tax compliance among large corporations. For this it uses large corporate taxpayers from the LTU of Bangladesh, engaging with these large taxpayers" perceptions of the effectiveness of selected tax compliance instruments in achieving tax compliance. For a deeper understanding of compliance issues, the tax agency point of view is also investigated.

It is worth noting that this study will not assess the success or failure of LTUs as a unit of tax administration. Nor will it focus on the effectiveness of the LTU compliance model as a whole. Rather, it will review selected coercive and persuasive instruments employed in securing tax compliance from large corporations whose tax affairs are administered by the LTU. Therefore the study requires a review of LTU administrative and compliance techniques if the reader is to understand the process of large corporations" tax compliance in practice. The thesis presents a brief introduction to the tax compliance of large corporations in chapter 4 based on data collected from fieldwork. The study also focuses on corporate sector characteristics as the context variable that has an influence on compliance generation. This makes the study robust in the conclusions it presents, although its generalizability is undermined by this because a different context would influence the study findings differently. The other limitations of the study are that it concentrates on the large corporations of one LTU and some study variables are measured through the stated preferences of the

respondents. A detailed discussion on the limitations of the study has been provided in section 3.13.

1.5   Relevance of the Study

Historically, economic theories of tax compliance have dominated the compliance literature, modelled first by Allingham-Sandmo (1972) based on Gary Becker"s (1967) seminal work on the economics of crime and punishment. The economic theory advocates hard actions, for example, penalty and audit, as the common deterrent to tax non-compliance. A limitation of the economic theory is that it completely ignores the fact that beyond the economic issues there are personal and social issues that have a strong bearing on tax compliance behaviours (Sheffrin and Triest, 1992; Fehr and Schmidt, 2007). As a result of this, the economic theories of tax compliance have been revised on the basis of psychological and sociological theories that argue that taxpayers are not only selfish, but are also responsible and honest (Alm et al., 1992b; Braithwaite, 2002; Grasmick and Bursik, 1990; Smith and Stalans, 1991; Roth et al., 1989; Baldry, 1986; Webley et al., 1991). Beyond punishment, as Kornhauser (2007:138) posits, there are "procedural justice, trust, belief in the legitimacy of the government, reciprocity, altruism, and identification with the group" that profusely affect compliance behaviours.

Non-economic theories of tax compliance, therefore, advocate softer measures, for example, trust building, cooperation, service provision and so on, in improving compliance behaviours (Ayres and Braithwaite, 1992). To treat taxpayers respectfully, high quality taxpayer service, mutual understanding and simplified tax law come to the forefront of tax compliance management. Although empirical evidence illustrates that punishment in many cases produces negative results or cooperation produces positive outcomes for tax compliance, no compliance research has examined hard and soft measures together to see how they impact on

the compliance generations of large corporations (Kamdar, 1997; Baer et al., 2002; OECD, 2009; CATA, 2006).

Against this background of tax compliance research, this study is important because it employs both sets of compliance tools simultaneously. The effectiveness of these compliance tools will be observed from the perspectives of large corporate taxpayers, whose tax compliance performance is believed to be more influenced by collaborative soft action than by threats and punishments, as reflected in the Responsive Regulatory Approach (RRA). Responsive regulation takes the view (see sections 2.91 and 2.92) that tax agencies should increase tax compliance not through punishment but through education, encouragement and assistance (Braithwaite, 2007). For sustainable and socially beneficial sources of tax revenues, the PRA argues for a major shift from stick-based compliance techniques to carrot-based techniques. Only a handful of studies have explicitly studied the impact of such a shift on tax compliance behaviour.

The examination of coercive and persuasive tax compliance issues among large corporations will not only fill a gap in the tax compliance literature but will also add new dimensions to tax policy and development intervention. It is argued that large corporations are the most influential of all taxpayers for the financial and political power they hold. They are also the most risky taxpayers for the complex local and international transactions they make. Perry et al. (2007:18) point out that, "underreporting of sales and incomes are even common in large firms... to deal this there is a need for an integrated approach consisting both of sticks and carrots."

This study is important because the tax compliance approaches and models used for large corporate taxpayers in developing countries are mainly replicated from those of developed countries, with very little understanding of their applicability and relevance in a different

context. Tax compliance research is mostly confined to the US or Australian context (Frey, 2002), and the vast majority of the research is conducted on hypothetical data, due to the difficulty of accessing actual tax office data (Witte et al.,1987; Hasseldine et al., 2007; Gupta and Mukherjee, 1998). An important contribution of this study is to tackle this problem by achieving access to the real tax office records of large corporate taxpayers in Bangladesh.

The study will consider the impact of corporate context on tax compliance behaviour. It will take corporate sector characteristics as a context variable to measure the real contribution of the selected coercive and the persuasive instruments. These issues will give the reader a deeper understating of the tax compliance behaviour of large corporations.

The outcomes of this study should not only contribute to the literature on tax compliance but should have a practical bearing on the achievement of higher tax revenues, equity, reliability and flexibility in the tax system. Assessment of payment compliance will provide evidence of whether corporations in similar circumstances bear the tax burden equally (i.e., horizontal equity) and corporations in dissimilar circumstances bear the tax burden unequally (i.e., vertical equity). Studying tax law simplification as an instrument will demonstrate how reduction in tax complexity improves tax compliance – an essential step to ensuring certainty in the tax system. Lymer and Oats (2010) argue that achieving certainty becomes difficult under complex tax rules, especially for grey areas in the law, and where these rules are continually changed. The study of significant compliance instruments will enable the tax authorities to reduce their operational costs and increase the efficiency and convenience of tax payment (Tran-Nam et al., 2000). Moreover, better knowledge of large corporate compliance behaviours will provide flexibility in the application of the compliance instruments during economic boom and bust periods (Lymer and Oats, 2010).

However, an exclusive focus on large corporate tax compliance may reduce tax collection from small and medium taxpayers (Terkper, 2003; Phillips, 2008) and thus may affect equity in the tax system. Baer (2002) and McCarten (2004) argue that the tax compliance strategies for large corporations do not fit with the needs of small taxpayers and therefore suggest establishing a simplified tax regime for small taxpayers to make the tax system equitable.

1.6 Structure of the Study

This thesis consists of 8 chapters. Each chapter touches upon certain aspects of the study. The chapters are designed so as to produce a logical flow towards answering the research question.

Chapter 1 outlines the research context, its objectives and main arguments. It frames the basic research questions and research methodology, and discusses the justification and the research perspective of the thesis.

Chapter 2 reviews the current state of knowledge on coercive and persuasive tax compliance paradigms and identifies gaps to be studied. It has two sections. The first section covers general tax compliance theories with a specific focus on large corporate taxpayers. The second looks at the Large Taxpayer Unit (LTU) compliance model, its strategies and approaches. The main research problems and the research questions used in the study emerge from this review.

Chapter 3 constructs an analytical framework for the study by identifying major instruments of coercion and persuasion and linking them to the research question. It sets out the methodological approaches, sampling and data analysis methods for the study.

Chapter 4 provides the fieldwork plan implemented in Bangladesh. It sets out a detailed time frame and lists the activities carried out in the field. It also makes a brief presentation on the compliance performance of large corporate taxpayers in Bangladesh.

Chapter 5 aims at measuring the level of tax compliance achieved by large corporate taxpayers in the LTU. To answer it effectively, tax compliance will be divided into two levels: component level and overall level. At component level, tax compliance is measured by its components, namely, filing, reporting and payment. At overall level, individual components are summed up to measure total tax compliance.

Chapter 6 identifies the instruments significant in the achievement of tax compliance by large corporations. Two separate sets of instruments, deterrence or coercion-based versus motivation or persuasion-based, will be taken into account for this study. This will answer the question of which set of measures contributes more to our understanding of tax compliance by large corporations.

Chapter 7 addresses the probable explanations for why some compliance instruments are more important than others in understanding tax compliance by large corporations. A wide range of interrelated tax administration, social, economic, political and psychological issues will be analysed in finding the explanations.

Chapter 8 spells out the conclusion of the thesis and highlights its contribution to the relevant field of knowledge.

CHAPTER II

COERCIVE AND PERSUASIVE TAX COMPLIANCE INSTRUMENTS AND THEIR IMPLICATIONS FOR LARGE CORPORATIONS

2.1 Introduction

The purpose of this chapter is to review current knowledge on coercive and persuasive tax compliance paradigms, with a special focus on large corporate taxpayers. For this, understanding tax compliance theories in general, and large corporate tax compliance issues in particular, is essential. The chapter investigates empirical evidence in tax compliance literature in a wide range of fields – for instance, economics, psychology and sociology – and focuses on tough and soft tax compliance instruments. To see how tough and soft tax compliance issues are prioritized or balanced in managing the tax compliance of large corporate taxpayers, LTU compliance techniques and processes are presented. Teasing out coercive and persuasive tax compliance instruments and their comparative positions in the existing literature will help to identify a gap in the current body of knowledge, and is likely to generate the research question for this thesis. The identification of a knowledge gap in the extant literature is expected to inform the analytical framework, methods of data collection and data analysis. The chapter begins with a definition of tax compliance, tax avoidance and tax evasion. Next, it examines tax compliance theories and determinants, in order to dichotomize them in the light of punishment and service paradigms. Then, the chapter defines large corporate taxpayers and LTUs, with an account of the latter‴s compliance models and techniques, to conclude with the implications of the reviewed literature.

2.2 Tax Compliance: A Conceptual Review

In its simplest form, tax compliance means paying tax liabilities according to tax laws and conventional accounting practices (James and Alley, 1999; Braithwaite and Wirth, 2001). In other words, it means filing returns for all taxes at the appropriate time, as required by income tax laws (Roth et al., 1989). According to Brown and Mazur (2003:2), "taxpayer compliance ... is analogous to measuring the net profit for a private sector business. Both are summary, bottom-line measures of the effectiveness of the organization." Brown and Mazur (2003) divide tax compliance into three segments – filing compliance; reporting compliance; and payment compliance – which are mutually exclusive and exhaustive, and which taken together measure overall compliance.

Defining tax compliance, however, is not easy. Andreoni et al. (1998) point out that tax compliance is a fluid concept that has different meanings from different perspectives. In public finance theories, tax compliance relates to equity and efficiency issues. In organizational theories, it relates to the principal-agent problem, where corporations and their advisors continually provide asymmetrical information about their income and tax liabilities. Psychological theories assert that a sense of shame and guilt may force a taxpayer to be compliant, whereas sociological theories claim that taxpayers" perceptions of how others obey social institutions influence tax compliance (Song and Yarbrough, 1978). Alm and Martinez-Vazquez (2003) suggest that developing social institutions relies to a great extent on "the presence of an effective but service-oriented tax administration." This shows that tax compliance is an interdisciplinary topic requiring a good understanding of law, accounting, economics, public policy and political science (Lamb, 2004).

There is however a dispute as to whether psychological theories fit into tax compliance studies of corporate taxpayers in the same way as they do into those of individual taxpayers.

For some academics, corporations can be considered moral agents, like individuals, but in a very different way. For example, Henriques (2006: 45) states, "The conduct and state of the mind of the company"s senior management is regarded as the conduct and state of mind of the company." This analogy – linking the founder"s or chief executive"s mind to the mind of the corporation – seems plausible for small, privately owned companies; but for publicly owned corporations such a comparison seems over-complex. Perhaps, the most conscious part of the corporate mind, as Henriques maintains, is product brand, to which corporations have vast emotional or psychological attachment. Quoting analytical psychologist Andrew Samules, Henriques points out that to have an emotional or psychological attachment, it is not essential for the subject to have human form; non-human corporate entities may also experience psychological attachment. That is why corporations spend huge amounts of money for non-corporate purposes: to convince people that they are not merely corporations but something more. Brooks and Dunn (2009) consider that corporate directors provide the social conscience of corporations. They are an integral part of the corporate social contract, and corporate profit maximization is a function of the directors" physical and psychological interest. According to Webley et al. (2006), corporate tax compliance is affected by how good a corporation is as a *corporate citizen*, which is measured by its reputational or social standards. However, Zaleznik and Vires (1982) disagree with this proposition and argue that the corporate mind only calculates benefit, without any feelings; it values means over ends; and it tends to hold power even at the cost of public policy and interest.

Understanding tax compliance is particularly important because it has serious efficiency and equity implications (Hanlon et al., 2005). For instance, the effects of corporate taxes may be passed on to shareholders, managers, workers or customers. Corporations that don"t find compliance laws encouraging may be interested in tax avoidance, either through taking

shelter in tax havens[3] or reducing real corporate activity, i.e., investment. Three issues that are particularly important for an understanding of corporate tax compliance are corporate size, corporate sector, and corporate location. Morris and Lonsdale (2004) argue that business type, size – sole-proprietor, partnership or corporation – and industry location influence tax compliance. Erard (1997) finds that the cost of tax compliance to business taxpayers is a function of business size and the nature of production. He provides empirical evidence that tax compliance costs increase with firm size, but less than proportionately.

Tax compliance costs mean all costs involved in record-keeping and in filing returns. According to Lymer and Oats (2010:51), "Compliance costs… include any costs related to the need to keep records for tax purpose, costs of employing tax related staff, costs of collecting data… and so on." As Lymer and Oats indicate, tax compliance costs do not refer to financial costs alone; they involve psychological costs, including stress, anxiety and frustration (Tran-Nam et al., 2000) that constitute 50% of the legal compliance costs among the corporate taxpayers in India (Chattopadhyay and Gupta, 2002). Hall (1994) argues that frequent change in tax law is one of the key reasons for high tax compliance costs, because complexities create uncertainties in the tax system and an increase in uncertainties requires the taxpayer to spend more on tax planning. Survey results of 365 large corporate taxpayers in the US show that complex tax laws account for 30% of large corporate tax compliance costs (Slemrod and Blumenthal, 1993). According to Gupta (2004), reducing compliance costs should be the major policy prescription for inducing filing compliance in India.

As regards the regressive nature of tax compliance costs, Slemrod and Venkatesh (2002: 4) comment that, "Compliance costs were regressive in the sense that smaller firms faced greater compliance costs as a proportion of sales than medium-sized and large firms. Second,

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[3] Tax havens are those countries where tax rates are non-existent or low and information-sharing is restricted for some income categories with or without the aim of attracting capital (Gravelle, 2009). The OECD (2000) has listed 50 countries across the world as having various levels of tax haven characteristics.

larger firms spent a greater proportion of their total compliance expenditures on tax planning than did smaller firms." Hasseldine (1995) provides evidence that tax compliance costs are very large and regressive among the business taxpayers in New Zealand and such costs fall more severely on small businesses than on others. Similarly, tax compliance costs are linked to location. Big corporations with foreign affiliates are found to bear greater tax compliance costs than national corporations (Hanlon et al., 2005; Slemrod and Venkatesh, 2002).

Two common approaches to measuring tax compliance are the tax-gap approach and the economic approach (James and Alley, 1999; James and Alley, 2002), and the implications of coercive and persuasive instruments on these approaches are different. The tax-gap approach attempts to reduce the gap between taxes actually paid and taxes that should have been paid according to tax rules. The economic approach, on the other hand, attempts to maximize revenues in a way that makes the distortionary effect of revenue generation minimal. If tax agencies employ coercive approaches, the tax gap will reduce; but the obvious problem is a negative effect on taxpayers" willingness to work, save and invest. Therefore, Phillips (2008:132) reminds us that, "the actual level of tax compliance is the combined outcome of the... willingness to pay tax.... and the effectiveness of enforcement." Slemrod (2004: 9), however, questions this view by saying that, "taxes are enforced exactions, not voluntary contributions" and warns that, "if the taxes are so, then how much the tax authority can expect voluntarily."

2.2.1 Tax Evasion and Avoidance

Tax compliance seems quite clear when it means filing returns on time for all taxes. In practice, however, complying with tax liabilities requires taxpayers to keep extensive records, remit money to the exchequer, and submit all evidence to the tax office. As part of this huge monetary and personal involvement in the tax compliance process, without any direct

benefits, taxpayers make intentional (i.e., fraudulent) or unintentional (i.e., errors or ignorance) mistakes, some of which are called tax evasion and some tax avoidance. The accounting fraud and use of tax havens by the Enron and Tyco corporations are examples of tax evasions in recent times (Slemrod, 2004).

Tax evasion refers to cases where corporations intentionally take action to cheat on their tax liabilities, with the help of those who help them with their tax returns (Murphy, 2004; Klepper and Nagin, 1989a; Schisler, 1994; Tooley, 1992). The cheating plan may take one or more of the following actions: 1) non-filing of tax returns; 2) tax returns filed but income not declared fully or expenses over-claimed; and 3) tax returns filed with full income declaration but taxes not paid accordingly. There is no concrete evidence as to the comparative frequency of these non-compliances. Plumley (1996) found that among US individual taxpayers, the reporting non-compliance rate is higher than that for filing non-compliance.

Tax avoidance, on the other hand, is a planned course of action to reduce tax liabilities in a way that does not contravene tax law. Tax avoidance in that sense is legal. There is however disagreement about this liberal view of the definition of tax avoidance. Slemrod and Yitzhaki (2002) point out that whether done intentionally or not, if an action by a taxpayer causes a loss of revenue, it should be treated as tax evasion. For example, if a highly profitable corporation invests huge amounts of money in an employee provident fund, in order to get tax credits and reliefs, so that their effective tax rate becomes zero, then this tends to be a case of tax evasion rather than tax avoidance (House of Commons, UK, 2008). In the examples mentioned, taxes are avoided by violating the spirit of the law. This has caused UK HM Revenue and Customs to define tax avoidance as an activity that reduces tax liability against the spirit of the tax law, although not strictly illegal. This suggests that tax

compliance, like any compliance program, should focus on the four Es–Educate, Encourage, Enable and Enforce.

Efforts to reduce tax liability by breaking tax law in fact or in spirit are so ambiguous that Seldon (1979) offers the term "avoision" to describe abusive tax practices. He argues that taxpayers who start with avoidance eventually end in evasion, thus the practices would be better called tax ‚avoision"– rather than ‚evadance', which implies the other way round. Slemrod (2004) comments that nothing is gained by distinguishing between tax evasion and tax avoidance, as in both cases the net effect is loss of revenue. For these reasons, corporations follow a creative compliance approach so that they "fall beyond the ambit of *dis*advantageous, or within the ambit of *ad*vantageous law", as Slemrod (2004: 9) points out.

2.2.2 Types of Tax Compliance: Filing, Reporting and Payment

According to Brown and Mazur (2003), as stated in the preceding section, tax compliance has three levels: filing, reporting and payment. Filing compliance refers to the proportion of registered taxpayers submitting returns. In calculating the percentage of filing, the denominator is always the number of registered taxpayers, because some potential taxpayers may lie off the radar of the tax authorities. A related calculation is the non-filing tax gap, which measures how much tax has been lost through non-filed returns. In calculating payment compliance, we measure the percentage of taxes paid by the due date. There are two sub-measures for this: the voluntary payment compliance rate (VPCR), measuring the percentage of total tax paid *timely* relative to total tax reported on a return submitted timely; and the cumulative payment compliance rate (CPCR), measuring the percentage of tax paid *up to a given date* relative to tax reported on a return submitted timely. These measures, as their names suggest, relate more to payment due dates than to taxes paid, because some taxpayers may not have payment obligations on the date of filing, either because tax has been

deducted at source, i.e. withheld, or because tax has been paid in advance. Finally, reporting compliance measures whether income is concealed or expenses are overcharged or any inadmissible expenses are claimed as admissible.

These three compliance measures are complementary to one another and designed in a way that avoids double counting. From each category, the extent of compliance is measured to find the cumulative extent of compliance. Thus, measuring overall compliance is only possible by adding together the degrees of compliance for each of the three components.

A hypothetical presentation of 10 taxpayers, each with a tax obligation of $1000, can be seen in Table 2.1 below. The first column demonstrates a case of 100% tax compliance, with each taxpayer filing their return timely, reporting all incomes, and paying taxes fully. In this case, the filing rate is 100%, since all taxpayers submitted returns on time. The voluntary reporting rate (VRR), which measures the ratio of taxes reported to taxes liable, is 100%.

Table: 2.1 Hypothetical presentation of tax compliance by 10 taxpayers, each with a tax obligation of $1000

Baseline case	Filing compliance	Reporting compliance	Payment compliance	Cumulative effects
Each taxpayer files, pays and reports timely and accurately	One taxpayer fails to file	One taxpayer under-reports tax liability by $150; another by $300.	Three taxpayers pay only $900 of their $1,000 liability	One non-filer, two under-reports, three under payments
Filing Rate = 10 filed timely / 10 required to file = 100%	Filing Rate = 9/10 = 90%	Filing Rate = 10/10 = 100%	Filing Rate = 10/10 = 100%	Filing Rate = 9/10 = 90%
Voluntary Reporting Rate (VRR) = $10,000 reported / $10,000 liability = 100%	VRR = $9,000/$9,000 = 100%	VRR = $9,550/$10,000 = 95.5%	VRR = $10,000/$10,000 = 100%	VRR = $8550/$9,000 = 95.0%
Voluntary Payment Compliance Rate (VPCR) = $10,000 paid timely / $10,000 , reported = 100%	VPCR = $9,000/$9,000 = 100%	VPCR = $9,550/$9,550 = 100%	VPCR = $9,7000/$10,000 = 97%	VPCR = $8,250/$8,550 = 96.7%
Treasury receives $10,000 of potential $10,000.	Treasury receives $9,000 of potential $10,000.	Treasury receives $9,550 of potential $10,000	Treasury receives $9,700 of potential $10,000.	Treasury receives $8,250 of potential $10,000.
Voluntary Compliance Rate (VCR) = $10,000/$10,000 = 100%	VCR = $9,000/$10,000 = 90%	VCR = $9,550/$10,000 = 95.5%	VCR = $9,700/$10,000 = 97%	VCR = $8,250/$10,000 = 82.5%
Tax Gap = $0	Filing non-compliance= $1,000	Reporting non-compliance = $450	Payment non-compliance = $300	Non-filing =$1,000 Underreporting = $450 Underpayment = $300 Total = $1,750

Source: Brown and Mazur (2003)

Similarly, the voluntary payment compliance rate (VPCR), measuring whether taxes are paid within or beyond the deadline, is 100%.Together these three rates, filing rate, VRR and VPCR, make up the voluntary compliance rate (VCR), which is also 100%.The second column shows what happens to compliance rates when a taxpayer does not file a return. The immediate effect is that the filing rate goes down to 90%, but the VRR and VPCR are still 100%, because the other nine filers have reported and paid taxes fully. The third column

shows how compliance levels change when all ten taxpayers submit their returns on time, but two of them underreport income. The fourth column measures compliance levels when three taxpayers fail to pay the required taxes in time. And the fifth column measures the cumulative effect of all the three levels of non-compliance.

2.3 Do We Need a Different Framework to Study the Tax Compliance of Large Corporations?

At this stage, an important question is whether the tax compliance issues of large corporations diverge from, or converge with, those of non-large or non-corporate taxpayers. Slemrod (2004) gives three main reasons why a different conceptual framework is needed to study the tax compliance behaviour of large publicly-traded corporations. First, the risk preferences of individuals and public limited corporations are different: individuals and closely-held small businesses are risk averse, as they don"t usually possess a diversified income and wealth portfolio. Large corporations, on the other hand, have a diversified portfolio and therefore have a risk-neutral attitude.

Second is the separation of ownership and management in public corporations. The individuals involved in management or ownership may be influenced by the potential cost or benefit of non-compliance, or by a sense of civic duty or a perception of fairness. In such cases, respectful treatment of corporate managers or shareholders may increase tax compliance. But it remains an open question whether large corporations will be motivated by a sense of civic duty or by respectful treatment, because of the artificiality of their entity (Slemrod, 2004). The separation of ownership and management also affects the effectiveness of coercive instruments. If managers, for instance, incur a penalty for corporate non-compliance, the shareholders may offset the loss by altering their compensation contract.

This raises the question of whether punitive measures should be taken against the shareholders or against the managers of large corporations.

Third, public corporations and individual taxpayers are different in their income reporting procedures and standards. Public corporations have to report income in financial reports audited by certified public accountants, whereas individual taxpayers are not required to submit audited financial reports. As a result, the chance of underreporting is higher for individual taxpayers than for corporations. Another factor that may affect large corporations" compliance is whether the tax savings generated through non-compliance accrue directly to the shareholders or to the corporation. Corporations are thought to be less non-compliant if the tax savings accrue to their shareholders.

Similarly, sociologists assert that corporations are organizations, not individuals and therefore organizational dynamics may have an influence on individual decision-making. For instance, Clinard and Yeager (1980: 43) say that, "the first step in understanding corporate illegality is to drop the analogy of the corporation as a person and analyse the behaviour of the corporation in terms of what it really is: a complex organization."

Despite the above arguments, there are strong justifications for studying corporate tax compliance through studying the tax compliance behaviours of the individuals within the corporations. Cowell (2004) argues that the tax compliance of a corporation ultimately depends on the choice of the person having the power to declare the financial accounts of corporation. Conley and O"Barr (1997: 6) assert that, "to say that the corporation has engaged in misconduct is to say that some of the people have misbehaved in ways that the law chooses to attribute to the corporate entity." Conley and O"Barr also argue that a corporation is a summation of few individual actions, or in some cases may be little different from this as far as corporate cultural issues are concerned. Joulfaian (1999:1) states that, "corporations, as

fictitious entities, do not cheat on their income tax returns: their managers do. These executives manage the operations of the firm and decide on the magnitude of profits to declare." Joulfaian argues that managers are paid by the shareholders to represent their interests, which largely depend on managerial preferences for evasion.

The overriding importance of understanding the role of individuals within corporations for understanding corporate tax compliance caused Gruber and Rauh (2007) to use the Gruber and Saez (2002) individual taxpayers" model in determining the influence of corporate marginal tax rate on corporate taxable income. To assess the success of risk rating approach among large corporate taxpayers in the UK, Freedman et al. (2009) conducted a survey among corporate directors, while Oats and Tuck (2008) interviewed civil servants from the UK Large Business Service (LBS) to study the role of financial accountants in large companies. Given the importance of the individual tax compliance model to the study of corporate tax compliance, Slemrod (2004:6) emphasises "looking through the legal entity to the individuals within the corporation."

Therefore this study attempts to understand corporate tax compliance behaviours based on the attitudes of corporate directors, accountants and tax professionals within large corporations. However, to better formulate the framework, the study will take full account of the organizational and administrative dynamics around which the LTU tax compliance process revolves (discussed in sections 2.9 and 2.10).

2.4 Tax Compliance Theories: Do They Advocate Coercion Or Persuasion?

Broadly, tax compliance theories can be categorized into two classes: risk-based and non-risk-based. Leading risk-based theories include the expected utility theory (Von Newman and Morgenstern, 1944), the prospect theory (Kahneman and Tversky, 1979), and the expectancy

theory (Lewin et al., 1944). Risk-based theories are more suggestive of a *coercive approach* to tax compliance. Non-risk based theories include the intentions theory (Fishbein and Ajzen, 1975), norms of compliance (Schwartz and Orleans, 1967), and the inertia model (Festinger, 1957), and these models advocate a *persuasive approach* to tax compliance.

2.4.1 Expected Utility Theory

The expected utility theory (EUT) states that taxpayers decide between risky or uncertain conditions by comparing their expected utility values. Expected utility values are measured by weighted sums found by totalling the utility values of different outcomes multiplied by the respective probabilities of the latter (Mongin, 1997).Expected utility may vary according to factors such as the measurement scale of utility and the weighted sum procedure. It may also vary according to the degree of uncertainty and according to the degree of risk. Due to this, the best-perceived versions of this theory are the subjective expected utility theory (in the case of uncertainty) and the Neumann-Morgenstern theory (in the case of risk).

Applying this theory in tax compliance studies, it is argued that taxpayers carefully examine the available options for evasion and choose the one with the highest probability of utility and the lowest probability of detection. Gary Becker (1967) was the first to apply the utility theory in explaining tax non-compliance. Becker (1967: 08) argued that, "a person commits an offense if the expected utility to him exceeds the utility he could get by using his time and other resources at other activities." Becker suggested applying these views in explaining all violations, including "murder, robbery, and assault" along with "tax evasion, the so-called white-collar crime" (ibid: 03). Based on Becker‟s theory, Allingham and Sandmo (1972) developed a complete tax compliance model for the individual taxpayer, which was further extended by Srinivasan (1973), Yitzhaki (1974) and Pencavel (1979). The basic model is:

$$E\ (U) = (1\text{-}p)\ U\ [y\ (1\text{-}t) + (y\text{-}x)] + PU\ [y\ (1\text{-}t)\text{-}s\ (y\text{-}x)]$$

Where,

y is the exogenous true fixed income;

t is the constant tax rate;

x is the declared income;

y (1-t) is the true after-tax income;

p is the probability of being detected; and

s is the penalty, which is a constant.

The model predicts that an individual will report zero income whenever the audit probability he faces is less than *t/ (t+s)*. However, there will be greater compliance if there is stricter enforcement by raising either *p* or *s*. These arguments lay the basic foundation of the economic perspective on tax compliance that dominates most of the works on individual and corporate tax compliance. Arguably, this theory tends towards coercive compliance instruments and suggests audit action, imprisonment, penalties and increased marginal tax rates as the potential determinants of tax compliance.

2.4.2 Prospect Theory

The expected utility theory failed in some cases to provide an acceptable explanation for decision-making under risk. In 1979, Kahneman and Tversky, through experimental studies, found that the individual"s response to risk is not based on maximum utility. Rather, individuals are risk-averse when facing gain and risk-seeking when facing loss (Kornhauser, 2007). In other words, the individual will avoid risk when gains are certain but will take a risk when facing losses. For instance, presented with options of (a) a certain gain of $500 and (b) a gain of $1000 with probability .6, the individual will choose the first one. But presented with options of (a) a loss of $500 and (b) a loss of $1000 with probability .6, the individual will chose the second one. As a consequence, the probabilities of expected utility are replaced by decision weights in this theory. Chang (1984) and Jackson and Jones (1985) have applied this theory in tax compliance studies. Jackson and Jones (1984) designed a laboratory

experiment to test the relationship between risk of detection and the magnitude of penalty in a tax evasion case. They found that the subjects focussed more on the magnitude of loss than on the probability of detection when the probability of detection was small. The authors" findings are consistent with the proposition of the prospect theory. Similar to the expected utility theory, this theory advocates that punitive measures, including penalty and investigation, are the best way to handle tax non-compliance.

2.4.3 Deterrence Theory

Another extension of the expected utility theory, the deterrence theory, explains that taxpayers will not do certain things if (1) there is a legal sanction; (2) there is a probability that sanctions will be imposed; and (3) the costs of the sanctions exceed the potential benefits accruing. This theory assumes that all individuals are intelligent, informed and can calculate the costs and benefits of a choice (Varma and Doob, 1998). There are substantial literatures on tax compliance that supports the idea that taxpayers" attitudes towards sanctions, towards the probability that the sanctions will be imposed, and towards the net gain from non-compliance are interrelated (Jackson and Jones, 1985; Grasmick and Scott, 1982; Andreoni et al., 1998; Mason and Calvin, 1978).

This theory has practical implication for coercion-based compliance measures. Grasmick and Scott (1982: 213) argue that, "deterrence theory posits three mechanisms of social control, in the form of threatened punishments, which might inhibit illegal behaviour: legal sanctions (state-imposed punishment), social stigma (peer-imposed punishment), and guilt feelings (self-imposed punishment)." In their work, Rossi and Grasmick (1985) note that legal sanctions and probability of audits are the most important enforcement tools by which tax departments can control evasion.

However, Jackson and Milliron (1986) urge caution in considering the neutralization effect of coercive instruments, since individuals have their own rationalizations for being non-compliant and negating guilty feelings. Thus how much impact legal sanctions will have on compliance attitudes depends on how much of a neutralization effect the sanctions have created. For example, if taxpayers perceive legal sanction as too severe, they do not experience much sense of guilt if they break the law; whereas if they find the law quite fair, their sense of guilt in breaking it is greater. Jackson and Milliron suggest that deterrence theory as a means of inducing tax compliance may bring success if there is certainty that violators will face punishment. Any chance that sanctions will be loosely implemented tends to increase the chances of non-compliance.

2.4.4 Intention Theory

The fundamental proposition of the intention theory is that the attitudes and intentions of individuals are important to tax compliance. This theory was primary developed by Fishbein and Ajzen (1975) and applied in studying compliance behaviour by Lewis (2008), McGill (1988), and Jackson and Milliron (1986). These researchers found that individual attitudes towards tax evasion were being affected by age, level of education, income level and several other demographic features. Trivedi et al. (2005:2) claim that, "the attitude of taxpayers varies considerably. Some comply with the fullest extent ...other taxpayers essentially play the audit lottery with the hope of avoiding the imposition of penalties." Kirchler, Hoelzl and Wahl (2007) argue that taxpayers" attitudes are a reflection of their tax morale, which must be taken into account in the conceptual framework of tax compliance and be reviewed on the power and trust continuum of compliance behaviour. Tax morale, as a concept, is defined as taxpayers" moral compulsion or inherent tendency to pay taxes (Torgler, 2007), although its exact components are not fully described (Kornhauser, 2007). To Frey (2002), tax morale is a black box, since its operational mechanisms and measurement processes differ widely; while

to Orviska and Hudson (2003), tax morale is linked to taxpayers" sense of civic duty. Very often it is not clear whether the concept of tax morale applies to national or individual tax payment behaviour. Kirchler (2007:102) clarifies the concept thus: "While the concept relates to the social and national level, it is measured by assessing knowledge and attitudes borne by individuals". Similarly, Lago-Penas and Lago-Penas (2010:1) define tax morale as a "function of individual and context level variables" which involves "socio-demographic, political and ethnic issues."

Obviously, this theory draws generously on persuasive tax compliance instruments. It argues that establishing mutual trust and understanding with taxpayers will influence tax compliance decisions. Mere imposition of penalties and legal sanctions may sometimes backfire in creating tax compliance.

2.4.5 Norms of Compliance

This is not a theory as such, but a model of tax compliance that highlights the social dimensions of tax compliance. The basic argument is that if a society considers evasion to be wrong and immoral, taxpayers will be less non-compliant (Jenkins and Forlemu, 1993). A society with a strong tradition of non-compliance tends to encourage tax evasion to continue. Also, for social and cultural reasons, individuals compare their own tax payment behaviour with that of others. If a taxpayer sees that others are not paying their taxes properly, or the government is not making proper use of tax revenues, he/she will tend to evade taxes.

Chau and Leung (2009) have put special emphasis on social and cultural issues, and have proposed modifications to tax compliance models. They critically examined the tax compliance model of Fischer et al.(1992) and classified key compliance factors into four groups: (i) demographic (e.g., age, gender and education), (ii) income-led opportunism (e.g., income level, income source and occupation), (iii) attitudes and perceptions (e.g., fairness of

the tax system and peer influence), and (iv) tax system/structure (e.g., complexity of the tax system, probability of detection and penalties, and tax rates). This model also includes cultural and ethical values. In approach, this model is mixed in its acknowledgement of the contribution of coercive and persuasive factors.

2.4.6 Inertia Model

Subscribers to this model assert that once an individual is habituated to certain behaviour or states of mind, it is difficult for him/her to suddenly withdraw from such practices. Similarly, a taxpayer who has a longstanding history of tax compliance does not suddenly become a violator (Jenkins and Forlemu, 1993). And the reason for this is not the fear of detection but the old compliance habit. This theoretical proposition is based on the psychological theory of Festinger (1957, quoted in Jenkins and Forlemu, 1993: 4), which states that, "when an individual holds inconsistent beliefs or acts in a way inconsistent with his beliefs, unpleasant feelings arise. In turn, these feelings push the individual to change either his beliefs or behaviour, so that one is consistent with other." The proposition of this model is more consistent with persuasive policy than coercive policy. The model implies that taxpayers hold certain beliefs, which may not vary with the potential threat of punishment and sanctions, but rather with the ethical and moral standards of the taxpayers. It argues that it is through services to taxpayers and education that ethical issues can be best tackled, rather than through fear of imprisonment.

2.4.7 Expectancy Theory

This theory is proposed by Lewin et al. (1944) and Vroom (1964). According to this theory, two basic facts governing tax compliance behaviours are: a) the expectations that the behaviour will produce a specific result; b) the sum of personal satisfaction the taxpayers derives from such action. This theory differs from the expected utility theory on the point that

"expectancy" is an output of motivation and "utility" is a product of cost-benefit, irrespective of one"s motivational level, as Vroom (1964) clarifies.

Accordingly, the first condition is that a taxpayer must have an intention to evade taxes. In real world, however, not all taxpayers are habituated to tax evasion; there are taxpayers who may not evade taxes even though there are no chances of being caught (Andreoni et al, 1998). Again, having an intention is not enough; there must be available means to translate the intention into a successful action – the second condition towards non-compliance decision. Finally, there must be the probability that the act of non-compliance produce the desired outcome that was intended.

2.4.8 The political economy model of tax compliance

According to this model, state-society relations and social contract are the main drivers to tax compliance (Moore, 2004; Barany, 2008). This model argues that the more efficient and legitimate the government actions and the political system are, the higher the potential for tax compliance is (Aymer, 1999). Political systems and institutions – democratic or authoritarian – determine the nature of interaction between taxpayers and governments. In democracies, government cannot act coercively towards taxpayers due to the fear of losing popularity (Musgrave, 2000). In autocracies, regulation and controls are usually coercive, since taxpayers cannot raise voice against government actions. However, Aymer"s (1999) findings of positive relationship between coups d"état and tax compliance in developing countries shows that coercive actions under a military rule can increase tax compliance. Bräutigam (2008) claims that in some countries democracy or dictatorship did not have any effect. This convinces Sandmo (2005), the co-author of the Allingham-Sandmo model (see section 2.4.1), to emphasize that low tax compliance in some countries may be an outcome of political

failure. In addition, the institutional arrangement within the democratic system, parliamentary or presidential, has effects on tax compliance (Bräutigam, 2008).

In summary, it can be said that along with economic theories/models of tax compliance, there are socio-political and psychological theories. While the economic perspective considers taxpayers as rational beings who make economic calculations, the sociological perspective views tax compliance as a product of taxpayer interaction with social norms, values and institutions. The psychological point of view suggests that tax compliance is a function of taxpayer motivation, intention and personal attitude towards fulfilling an obligation. Some theoretical bases (e.g., deterrence theory) have attempted to combine both social and economic issues. The central observation of these theories, as Timmons (2004: 27) argues, is that, "most theories hinge on the coercive model of tax compliance, but tax compliance cannot be explained by coercion alone in most cases."

2.5 Do Coercion and Persuasion Conflict or Complement?

A review of tax compliance theories shows that the tax compliance literature is broadly divided into two parts: coercive and persuasive. By coercion, Commons et al. (1996:86) refer to "a command, express or tacit, issued by a determinate person to enforce obedience on others by means of external material", where persuasion does not induce compliance by material means but by "direct psychic influence." Commons et al. argue that coercion and persuasion both work through motives, and the difference in such motives is related to class-feeling, prejudice and self-interest. It is also argued that coercion does not mean an obvious force; rather, it is the maintaining of force to use when needed. Freedman (1998:18) argues that, "coercive activity is not inherently defensive or offensive it depends on the objectives being perused."

Theorists and scholars are sharply divided about the influence of these conflicting compliance paradigms. Neoclassical economists argue that coercion as a policy cannot exist for long; in the long run, only consensual exchange of resources will prevail (Tool and Samuels, 1989). Market economists, on the other hand, think that the exchange of resources between economic agents is not fully coercive because individuals enjoy freedom of action within a limited set of choices. And in a quite different vein, institutional economists state that coercion is inevitable and ubiquitous in every economy (Tool and Samuels, 1989) and both the state and the market work as the repository of coercion. Thus we see that neoclassical economists seem to agree with the voluntary and persuasive distribution of resources, and institutional economists seem to challenge this. Evidently, the coercive school of thought posits that tax payments are not made willingly and the economic rationality of tax non-compliance makes the taxpayer a gambler or a thief (Cowell, 2004; Timmons, 2004).

The persuasive theory of tax compliance, which expects taxpayers to self-assess their taxes, relies on trust and taxpayers" behavioural co-operation. This approach assumes that taxpayers are not merely interested in utility maximization. There is empirical evidence that taxpayers are honest and disclose their tax liability correctly, even when there is no chance of being caught (Jenkins and Forlemu, 1993; Erard and Feinstein, 1994; James and Alley, 1999). Scholz and Lubell (1998:412), testing Levi's (1988) concept of "conditional consent" and Scholz and Pinney's (1995) concept of "duty heuristic", empirically proved that, "trust in government and trust in other citizens significantly influence tax compliance, even after controlling for the influence of any internalized sense of duty and of self-interested fear of getting caught." There are also studies that claim that the inherent motivation to comply with taxes can be crowded out by coercion-based extrinsic motivations (Deci and Ryan, 2002; Frey, 2002).

There is abundant evidence that this theory works on the ground. Maxwell (2008) finds that the revenue authority of Guatemala reduced its penalty rate for tax non-payment and earned huge voluntary tax payments from its taxpayers. In contrast, as Maxwell notes, the Costa Rica revenue authority increased its tax penalty and the probability of audit, and ended up with reduced compliance. And in Germany research concludes that factors other than coercion improve tax compliance (Maxwell, 2008). Scholz (1998: 137) points out that, "without trust there is little basis for social cooperation and voluntary compliance with laws and regulations that could potentially benefit everyone."

However, in some ways, coercion and persuasion as compliance approaches carry equal weight, since both of them produce results through affecting the cost and consequences of non-compliance activities (Imbeau, 2009). For instance, persuasive theory posits that taxpayers cannot be influenced towards tax obligations until they are convinced that the benefits they receive from tax compliance are higher than the costs they incur for it. The benefits taxpayers receive from paying taxes take both a direct and an indirect form. The direct benefit is the amount of punishment taxpayers avoid by not reneging on a state obligation; and the indirect benefit is the goods and services supplied by the state free of charge. Because of an information asymmetry, many taxpayers fail to perceive the benefits they derive from state-provided goods and services. Thus the working of persuasive policies depends on facts and knowledge of how taxpayers benefit from state-provided services.

Imbeau (2009) argues that despite the fact that taxpayers benefit from the payment of tax, they need to be coerced because they do not like to lose the instrumental power they hold over their wealth. Legal compulsion may ensure that taxpayers sacrifice some of their wealth; but it is unlikely that a complete sacrifice will be made. The conflict between the taxpayers" instrumental power over their wealth and the coercive power of the state is well reflected in

the Laffer curve (Gwartney et al., 2008): the state can only increase revenues up to a certain point. If the tax rate is exorbitantly high, taxpayers will either work less or take their economic activities away from the state, and revenues will fall. To overcome this difficult situation, the state has either to draw resources from a different source, by borrowing at a rate of interest, or printing money; or it has to persuade its taxpayers of the need for more revenues.

2.6 How to Balance Coercion and Persuasion?

The apparent dilemma discussed above shows that there are two ways of increasing revenues: increasing coercion to make non-compliance a costly decision; or increasing persuasion to demonstrate the benefits to taxpayers. A third option, which is argued to be the most practicable, is to blend these two, taking account of the nature of taxpayers and the needs of the tax administration (Braithwaite and Braithwaite, 2001; DFID, 2009). According to the DFID (2009:9), for building an effective and legitimate state, it is important „not just to be able to compel but to persuade." DFID states that the question of *how to tax* is more important than the questions of *what* and *how much* to tax. Braithwaite and Braithwaite (2001) suggest that a balance between enforcement and respectful treatment will foster trust in the tax system and create more compliance. Imbeau (2009) also supports the idea that coercion or persuasion as standalone measures cannot fully incite tax compliance. Persuasion alone secures less tax compliance than coercion alone, but when persuasive instruments are mixed with coercive instruments, they yield better results than coercion alone (see Figure 2.1). The explanation for this is that coercion becomes costly because of the huge surveillance it requires. A rational way to reduce cost and to replace coercion is to give taxpayers a voice in taxation and offer them services that open up the possibility of an exchange-based relationship (Timmons, 2004; Levi, 1988; Hendrix, 2008).

Figure 2.1: Relationship between tax compliance, coercion and persuasion

Compliance achieved

Coercion and persuasion

Coercion alone

Persuasion alone

Coercion and persuasion in action
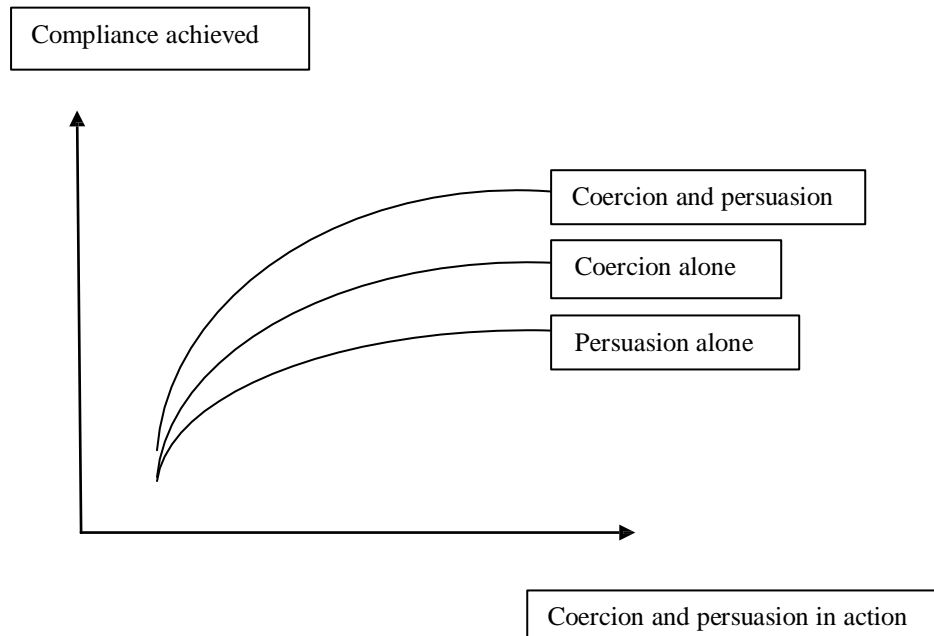
Source: Adapted from Imbeau, 2009

The common core that brings taxpayers and tax administrations close, according to the persuasive compliance scheme, is trust and a sense of civic duty. Kenneth Arrow (1972, quoted in Slemrod and Katuscak, 2005:3), in his seminal work on gift and exchanges, remarks: "Every commercial transaction has within itself an element of trust … much of the economic backwardness in the world can be explained by the lack of mutual confidence." Knack and Keefer (1997) provide evidence that a trust-based society spends less in protecting people from exploitation by economic transactions and can produce more physical and social capital for the state. Harsh measures taken to make taxpayers compliant may completely erode the tax base. Kagan and Scholz (1984) argue that irrational actions by regulators engender resistance to compliance in citizens. Tyler and Huo (2002) opine that taxpayers paying taxes under coercion may revert to their prior behaviour once the threat of punishment is reduced or they get used to it.

However, it may be difficult to distinguish whether taxpayers are complying due to the fear of coercion or the appeal of persuasion. Moreover, a sense of civic duty and trust are not equally present among taxpayers. Reliance on taxpayers" sense of civic duty and trust may create problems of free-riding and horizontal inequality in the tax system (Wagner, 2002; Timmons, 2004). This causes Hendrix (2008: 49) to suggest that, "tax compliance is in no sense voluntary; therefore the ruler has no incentive to deviate from a coercive equilibrium." There is also a reverse causation to this argument in that taxpayers" trustfulness and sense of civic duty depend on how trustful the state is to the taxpayers (Maxwell, 2008; Moore, 2008).

Considering the arguments of both sides, Kirchler, Hoelzl and Wahl (2007) suggest a pragmatic compliance framework, called "the slippery slope" (see Figure 2.2 below). These authors contend that in framing compliance policy it is important to consider whether taxpayers and tax agencies are in an antagonistic or a synergic relationship. In an antagonistic relationship, tax authorities consider taxpayers to be evaders and impose coercive measures to collect tax. This causes a sense of persecution among taxpayers and therefore they feel justified in breaking trust and being non-compliant. Self-persuaded compliance in these circumstances is reduced to the minimum.

Figure 2.2: The slippery slope framework: enforced versus voluntary tax compliance
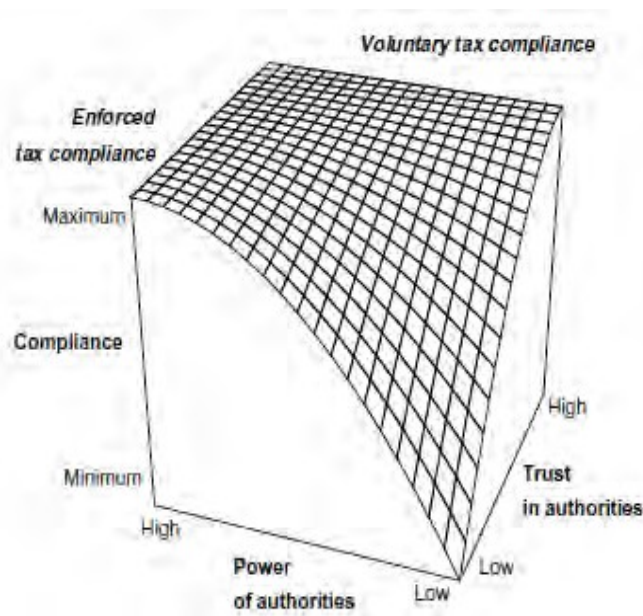
Source: Kirchler, Hoelzl and Wahl, 2007

By contrast, in a synergistic relationship the tax authorities view themselves as a service provider. The "client service" approach makes the tax authority respectful towards taxpayers, which encourages willing payment of taxes. Seen from this perspective, the tax compliance framework has two major dimensions: power and trust. Power refers to the capacity of the tax authority to detect evasion and punish, whereas trust means the capacity to provide beneficial services to taxpayers. Tax authorities may use power to threaten taxpayers into compliance, or they may trust taxpayers and build a relationship of mutual understanding and cooperation. However, none of these is successful as a single measure. Kirchler, Hoelzl and Wahl (2007) for this reason argue that increasing power and trust are equally likely to improve tax compliance.

Finally, the "trust heuristic", according to Scholz and Pinney (1995), can provide the basis for a contingent compliance strategy capable of sustaining cooperative solutions to the collective

action problems of governance if two conditions are met. First, compliance with laws must be conditional on levels of trust in specific legal arenas. Second, a citizen's trust in government and trust in other citizens' willingness to obey the law must reflect the costs and benefits associated with obeying laws.

2.7 Instruments of Coercion and Persuasion in Managing Tax Compliance

Most tax compliance instruments emerge from the traditional, coercive school of thought that begins with penalty and audit (Dubin et al., 1990). The other streams of instruments, the persuasive ones, are still nascent in the compliance literature and mainly involve issues like service to taxpayers, mutual understanding and trust, cooperation and simplified tax laws. There are, however, several demographic and cultural features that contribute to tax compliance issues (Plumley, 1996; Fischer et al., 1992; McGill, 1988). This section highlights the prominent instruments of coercion and persuasion that affect tax compliance.

2.7.1 Tax Audit

Tax audit has strong direct and indirect effects on tax compliance (Plumley, 1996; Andreoni et al., 1998; Alm et al., 1992a; Erard, 1997; Dubin et al., 1990). Beyond the few taxpayers on whom it is conducted, it has a general deterrent effect on all taxpayers, called "the ripple effect", and an effect in succeeding tax years, called "the subsequent year effect." The question is: what matters in tax compliance – the possibility of audit or the book-tax difference[4] and audit adjustment? The extant literature covers both issues. On the audit

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[4] Book-tax difference refers to the excess of book income of corporations over their taxable income reported in tax returns (Mills, 1998).

possibility side, it is argued that endogenous[5] audit rates have stronger effects on tax compliance than exogenous audit rates, provided that the threat of audit action is real (Kamdar, 1997; Witte et al., 1987; Plumley, 1996). On the other hand, the use of real tax audit data in determining the book-tax difference and audit adjustment is comparatively rare in tax compliance studies (Mills, 1998; Mills and Sansing, 2000; Mills and Newberry, 2001). Book-tax differences are used as a measure of the deficiency of financial statements in reporting income and liabilities (Gleason and Mills, 2002). Among large corporate taxpayers in the manufacturing sectors of the US, Mills (1998) finds a positive relationship between excess of book income over taxable income and proposed audit adjustment. Cloyd (1995) finds that audit probability increases when there is a higher book-tax difference, and as a result the success of defensive action against the IRS decreases. Desai and Dharmapala (2005) also measure tax avoidance by inferring the gap between income reported in financial statements submitted to the capital markets and taxable income shown in tax returns.

The impact of tax audit also depends on how audit information is passed down to taxpayers – by tax agencies or by the peer groups, through official channels or unofficially (Appelgren, 2008; Alm et al., 1992b). On a similar yet different note, Andreoni et al. (1998) state that audit rates or audit probability are a function of reported income: the higher the income, the higher the audit rate or probability. When it comes to tax audit impact, there are both positive and negative outcomes. Beron et al. (1988) found a positive relationship between audit and tax compliance, although the deterrent effect was weak. Frey and Feld (2002), using cross-sectional time series data, found that penalty and audit based detection probability had an unexpected positive relationship with tax evasions, although this was statistically non-

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[5] Audit rates are endogenous when audit decisions are made on the basis of past records and return information (Witte et al., 1987). Audit rates become exogenous when audit decisions are made randomly, without any consideration of the tax return.

significant. In Torgler"s experimental test (2007), audit probability does not have a statistically significant impact, and the penalty rate even has a negative impact on tax compliance. As a result of these opposing relationships between tax audit and tax compliance, ensuring taxpayer consultation and education gets profuse importance in the compliance generation process (DFID, 2009).

2.7.2 Tax Penalty

The fear that delinquencies will be dealt with through penal action puts the latter at the forefront of compliance action (Hoekema, 1986). As regards the impact of penalties on tax compliance, conflicting evidence has been found in the literature. Minor (1978), Tittle (1980) and Spicer and Lundstedt (1976), in their survey research, found that penalty had no impact on tax compliance; while Grasmick and Scott (1982) found it had a great effect. Friedland (1982), in experimental research, found that low and high penalties at a given probability of detection had approximately the same level of impact on tax compliance. However, Friedland et al. (1978) found that large fines with a low probability of detection had a greater impact on tax compliance than low fines with a high probability of detection. Friedland et al. (1978) confirm that penalties are more significant than frequent tax audits in detecting non-compliance. This is also supported by the finding of Jackson and Jones (1985) that the magnitude of penal sanctions has a comparatively stronger effect than increased probability of detection. Jackson and Jones (1985:12) argue that, "penalty plays a more important part in the tax evasion decision than the risk of detection when the risk is very small." Jackson and Jones" findings in one way strengthen the proposition of Kahneman and Tversky"s (1979) prospect theory, which states that subjects make their compliance decisions based on the magnitudes of potential losses. Finally, experimental research with real taxpayers by Schwartz and Orleans (1967) illustrates that the threat of penal sanctions influences tax compliance positively, but the magnitude of the influence of a persuasive appeal is

comparatively high. Therefore, the coerciveness of penal action makes both positive and negative contributions to the achievement of tax compliance.

2.7.3 Imprisonment

Imprisoning taxpayers for failure to comply is the toughest deterrence that a tax authority can apply. The Run After Tax Evaders (RATE) program instigated by the Tax Administration of the Philippines in 2007 was one of the most successful of its kind in raising tax collection. Under this programme, tax collection increased by 43.6% compared to that of the previous year (ADB, 2009). The reasons attached to such an increase in tax collection are the fierceness of imprisonment as a policy instrument and the fear it spreads among taxpayers. The possibility of being imprisoned for tax cheating makes the whole process of non-compliance highly risky and poorly yielding. Non-compliers are under serious pressure to change their behaviours accordingly. However, the core goal of imprisonment is not to punish or detain the taxpayers, but to ensure an increased flow of taxes to the exchequer, as the RATE program stated. Clearly, the two immediate objectives of imprisonment are to criminalize tax non-compliance and to increase voluntary compliance. It is argued that criminalizing non-compliance requires an adequate and efficient institutional infrastructure, along with the political will and motivation (ADB, 2009).

In relation to the debate on severity versus probability of punishment, Klepper and Naggin (1989b) argue that it is always the frequency or the probability of detection that makes an impact, rather than the size of the penalty, because the size of the penalty is the same for all corporations, small or big. Looking at the experience of Ecuador, Aparicio et al. (2010) argue that weak institutional capacity weakens the credibility of imprisonment. So the first thing the Ecuadorian Government did was to increase its prison capacity. This action had a tangible impact on the hearts of the evaders. However, the outcome of imprisonment or its tangible

impact on evaders depends on how corrupt the tax administration is. In a corrupt tax administration, the severity of imprisonment further increases the opportunity for corruption because of the tax inspectors" increased capacity to solicit bribes.

There is also evidence that criminal prosecution has no significant impact on recidivism in comparison with fines or other coercive actions. With reference to Weisburd et al. (2001), Levi (2009:14) argues that, "imprisonment had no significant effect on recidivism compared with fines or probation". This "no difference" finding applies irrespective of timing, frequency or type of recidivism. Levi claims that if the criminal prosecution is pursued as a sporadic action, then the evaders rationalize evasions as non-serious and non-harmful action. Therefore criminal actions, once initiated, should be prosecuted in order to give a message that non-compliance is a serious offence and will not remain unprosecuted (Henry, 1978; Shover and Hochstetler, 2006).

2.7.4 Simplified Tax Law

Tax law simplification remains the tax authorities" "single greatest tool to encourage tax compliance" (OECD, 2006) that emerged from Adam Smith"s *canon of certainty and convenience* of taxation. Lymer and Oats (2010:55) state that, "Simplicity was not specifically mentioned as one of Adam Smith"s canon of taxation, but…the idea of simplicity as a goal for tax and tax system design is linked to certainty and convenience." Smith (1776:415) in his book, *The Wealth of Nations,* published in 1776, puts that, "The time of payment, manner of payment, quantity to be paid, ought all to be clear and plain to the contributor, and to every person."

The importance of simplified tax laws makes this the central focus of the integration of the coercive and persuasive paradigms (Perry, 2007). But tax laws are not faultless, nor are their explanations always clear (Carnes and Cuccia, 1996). The grievance that tax law is complex

is a valid reason for taxpayers to be non-compliant. Many argue that reducing uncertainty and perfecting justice breeds much of the complexity and tax non-compliance (Slemrod, 1985). Measuring tax complexity however is difficult, as it involves measuring the resources consumed by the tax agencies in collecting taxes, which include the value of taxpayers" time and money and all other hidden (e.g., psychological) and obvious costs (Slemrod, 1985). Three major factors in explaining tax law complexity are the misapplication of laws, aggressive tax planning and the complexities of commercial transactions (Adam et al., 2010; Krever, 2000; Bird and Jantscher, 1992). Adam et al. (2010) add that simplification may be impeded for three further reasons: technical, structural and compliance complexities.

The drive for tax law simplification therefore, as Kaplow (1995) argues, is linked to the "compliance costs, and enforcement difficulties" that can be reduced by co-operation between taxpayers and governments (Schmolders, 1959). Simplification makes it easier for taxpayers to comply (Morris and Lonsdale, 2004) and enhances the relationship between taxpayers and tax agencies (Brondolo, 2009). The simplification mechanism is explained in the following New Zealand Tax Compliance model, which demonstrates that taxpayers" attitudes to compliance are of four kinds, starting with "very willing to comply" and ending with "decided not to comply"(see Figure 2.3 below).

Figure 2.3: Components of the compliance model

Source: Morris and Lonsdale, 2004

The above Figure 2.3 shows that with taxpayers who are willing compliers, simplified tax law is the best way to achieve compliance. Deterrence measures are needed when the taxpayers are unwilling to comply. According to Short (1997), 56% of the tax audit cases of large corporations in the US are appealed in the higher courts for tax law complexity. In Tanzania, for example, many large corporations have litigated against the tax system for lack of simplicity and constructive dialogue with the tax administration (Fjeldstad and Moore, 2008). However, there is a potential danger in simplifying tax law: marginal taxpayers may go out of the tax base and the tax burden, as a result, may fall more on large corporations (Fjeldstad and Moore, 2008). Also, for some corporations, simplification may be an uneconomic option because in a complex tax regime corporations can pass a higher percentage of their tax burden on to customers than in a simplified tax regime (Kireeva and Rudy, 2008).

2.7.5 Taxpayer Service

Taxpayer service is one of the leading instruments for tax compliance, although it is difficult to prove in many cases (LeBaube and Vehorn, 1992). In general, taxpayer service refers to extending outreach and tax education activities, for example hosting tax fairs (Durand and Thorp, 1998), and to improving response time and communication facilities with the purpose of reducing compliance costs (Delta and Matsuura, 2008). In the case of large corporations, taxpayer service, to a large extent, refers to the interpretation of complex tax laws and the refund of taxpayers" money (Brondolo et al., 2008). Taxpayer service for US taxpayers means a decrease in dependence on walk-in service centres and an increase in reliance on telephone and internet services (US Congress, 2005). In the IRS most transactions with the large corporations are done through e-service (Powner and White, 2005). E-provided information on the tax administration"s website increases the credibility of taxpayer service and the satisfaction that services have resulted in time and resource savings (Soukhovtseva, 2006).

A survey conducted among taxpayers in South Africa reports that the demand for a service helpdesk is higher than that for tax law simplification or other motivational things (Abrie and Doussy, 2006). Bird (2004:141) states that, "adequate service in the form of information, pamphlets, forms, advice agencies, payment facilities, telephone and electronic filing, and so on must be provided to taxpayers to facilitate and make as easy as possible taxpayer compliance with the system." Similarly, Barbone et al. (1999) propose that in evaluating the performance of revenue administration, delivery of taxpayer service is the most significant factor. Taxpayer service delivery can be judged in terms of service quality, called effectiveness, and in terms of the unit cost of service provision, called efficiency.

However, Bird (2004) reminds us that creating a positive image of tax officials is more important than the mere provision of taxpayer services. Prichard (2010) notes that taxpayer outreach services have not only contributed to high revenues, but also changed the arbitrary behaviour and negative image of tax officials. In the same vein, Fjeldstad (2004: 555) points out that, "the trustworthiness of the revenue enforcement mechanisms and the penalties imposed on defaulters affect citizens" compliance behaviour." On this point, Sparrow (1994) argues that in most cases service delivery by the tax administration is *not* different from fulfilment by the latter of its obligations. Unless service delivery goes beyond fulfilment of obligations, it is unlikely that the attitudes of taxpayers will improve and taxpayer service will bring a major change in compliance levels (Snavely, 1990).

2.7.6 Mutual Understanding

In the tax compliance literature, mutual understanding refers to the expectation that all related parties will behave themselves according to the tax laws. The purpose of developing understanding is to promote the level of trust between parties and lessen the need for tax policing (Sparrow, 1994; Murphy, 2002; Braithwaite, 1998). The underlying philosophy of mutual understanding is not to hit taxpayers for any of their innocent mistakes and to address non-compliance through non-traditional approaches. This requires, as Alink and Kommer (2011:275) state, "better understanding of, and addressing the expectations of, large taxpayers, including commercial awareness, impartiality, openness and dialogue, consistency and certainty and early settlement and speedy resolution of issues." If there is good conduct between the parties, trust and transparency will grow between them and compliance costs will be minimal (Kucher and Goette, 1998). Viewed from these perspectives, transparency, trust and mutual understanding are reciprocal in the tax administration-taxpayer relationship. The main argument of the Australian Tax Office compliance models for working with large

corporations is to enhance mutual understanding and taxpayer-tax administration cooperation (Donnelly and Heneghan, 2010; ATO, 2007).

The OECD (2009:108) points out that mutual understanding and cooperation between large corporate taxpayers and their tax authority is needed "to discuss areas of mutual concern and improve tax compliance." The Large Business Office of HM Revenue and Customs acknowledges understanding business as one of the leading issues, along with "ringmastering" and "sectorisation" in the case of tax compliance by large corporations (Tuck, 2004). Kirchler (2007:49) proposes that, "the similarity of views is related to the parties" mutual understanding of each other and the law, leading to the willingness to cooperate." In the same vein, Brem and Tucha (2007) mention that the success of advance pricing arrangements on transfer pricing depends to a large degree on the extent to which the parties have some common understanding of the problem.

The concept of mutual understanding, by and large, is based on the horizontal monitoring model developed by the Netherlands Tax and Customs Administration (CIAT, 2009; Burgemeestre et al., 2009; Murphy, 2002). Mutual understanding and control, however, are not mutually exclusive, in the sense that control can be achieved through coordination, transparency and relationship-building. Scholz and Lubell (1998) tested the specific link between trust – the basis of mutual understanding–and its impact on tax compliance. They point out that trust in tax administrations and in government systems significantly influences tax compliance levels. This is because inconsistencies in compliance behaviours are often the outcome of a lack of confidence and limited understanding of tax issues (Elffers et al., 2006). The LTU compliance models, as a result, have focused on the need for understanding each other"s business and operational mechanisms as an essential step to boosting tax compliance (HMRC, 2006; ATO, 2007; OECD, 2009; Deloitte, 2005).

2.8. Who are the Large Corporate Taxpayers?

This research is aimed at examining the role of coercive and persuasive tax instruments among the large corporate taxpayers dealt with by LTUs. This necessitates a clear understanding of who the large corporate taxpayers are, and how their tax compliance is managed in the LTUs.

In general terms, big taxpaying corporate entities are treated as large corporate taxpayers. Watts (1978: 22) comments that, "defining a large industrial enterprise is beset with problems. Size, for example, can be measured in several ways – number of staff employed, net assets (capital employed), value added (net output), turnover, issued capital and market capitalization." Using tax payments as a basis for identifying large corporate taxpayers is risky. Corporations may successfully underreport income to remain outside LTUs; or use tax holidays to end up with zero tax liability. This leads Baer et al. (2002:14) to suggest that, "taxpayers who regularly underreport or underpay tax, large firms who enjoy a tax holiday and large exporters with significant amounts of refunds" should be excluded from LTUs."

The OECD (2009:6) states that, "the definition of large business or large taxpayer differs from one tax administration to another" as "the identification criteria for large businesses vary from country to country." The most frequently used criteria, according to the OECD (2009:7) are: "gross business turnover or sales; value of assets; amount of taxes paid; businesses belonging to certain industrial categories (banks, petroleum etc.); volume of international trade; and number of employees." For Joulfaian (1999) the simple measure for firm size is revenue receipts.

However, the development of trade and commerce and the shifting state of tax revenues have generated a set of criteria that guide the definition of corporate taxpayers as large. These are net worth, i.e. owners" claim on the business; number of foreign affiliates; weighted average

of all taxes – income tax, employment tax and VAT. The problem that still remains is that a corporate taxpayer may not remain large forever. In its life cycle, it may drop down to a medium or small taxpayer due to changes in business activities or changes in the set of defining criteria. Hamilton (1994:6) mentions that, "large taxpayers are not simply a large version of small taxpayers and large taxpayers continually evolve." Watts (1978) identifies six characteristics by which large corporate taxpayers can be distinguished from small and medium businesses in the non-corporate sector: separation of ownership and control; formal organizational structure; special influence on the national economy; multi-national exposure; varied outputs; and control from overseas.

2.8.1 Large Taxpayer Units (LTUs) and Large Corporate Taxpayers

The concept of a Large Taxpayer Unit (LTU) is comparatively new in the field of tax administration. In general, an LTU is a self-contained tax administration office, parallel to or embedded in the tax system, which provides one-stop services to settle the tax liabilities of the largest taxpayers. The broad consensus among researchers and academics on the definition of an LTU is that it deals only with the largest taxpayers. In Perry"s (2004:382) view, large taxpayer units are "designed to provide full management of a small percentage of the biggest taxpayers in the country …a subset of taxpayer-segment-based organizational structure." Some researchers view LTUs as a nucleus for tax administration reform. Their existence brings a complete change in the tax administration and opens up new windows for modernization. McCarten (2004: 2) describes an LTU as "a potential Trojan horse for reform in tax administration … an institutional reform substitute for a semi- autonomous revenue agency" and as a public sector analytical tool to manage public revenues. In the changing regulatory environment, LTUs are a glaring example of how power-based techniques can be supplanted by soft approaches that reduce the cost of compliance and increase compliance (Tuck, 2004).

The concept of the LTU was generated in Argentina in the late 1970s (McCarten, 2003). In their early stages, LTUs used to audit high turnover corporations to increase reporting compliance. At the beginning of the 1980s, the concept of the LTU was adopted in Bolivia and Peru, with the sole aim of increasing filing compliance. Later, in the early 1990s, Argentina introduced accounting software to monitor both filing and payment compliance. Vazquez-Caro (1994) emphasizes two issues in the spread of the LTU in Latin America: close monitoring of those taxpayers with the highest revenue concentrations; and a shift of assessment and collection responsibilities from the public to the private sector. LTU expansion got its momentum in the early 1990s, under IMF patronage. McCarten (2003:18) states that, "with the encouragement of the IMF and some bilateral donors it spread to several smaller African countries in the early 1990s, to transitional economies in the mid-1990s, starting with Hungary, and finally to South and East Asia in the first decade of the 21st century." By 2002, 50 countries, and by 2006, 67 countries, had established LTUs as independent units or as a special wing within semi-autonomous tax administrations (Baer et al., 2002; CATA, 2006). Table 2.2 below shows that in the 1980s there were only five LTUs, but in the 1990s this increased to 42, concentrated mainly in Africa and in Latin America. During the same period, central European countries established the highest number of LTUs, and Australia and New Zealand started their LTU operations.

Table 2.2 Global expansion of large corporate taxpayer units

Regions	Year of Inception			
	1970s	1980s	1990s	2010s
Latin America	1	2	9	-
Africa	-	-	12	3
Central Europe	-	2	7	-
North America	1		1	
Baltic & CIS	-	-	7	1
Asia-Pacific	-	1	4	7
Middle East	-	-	-	5
Others	-	-	2 (Aus, NZ)	1(Trinidad & Tobago)
Total(67)	2	5	42	18

Source: Baer et al. (2002) & CATA (2006)

One of the reasons LTUs came into being was immense socio-political pressure for increased tax compliance by the most affluent taxpayers (Hamilton, 1994; Brautigam, 2008). Brondolo (2009: 15) argues that large corporations need top priority from tax agencies because "a decline in compliance by just a few large taxpayers can lead to large amounts of foregone revenue." Large or wealthy taxpayers not only provide the resources to develop state capacity but also have a strong influence in moulding the representational and accountability issues of governance. Moore"s (2004:302) comment is worth noting:

> Members of these three intersecting groups (bondholders, large taxpayers, and legislators) will be well informed about fiscal issues; high levels of trust might exist between them and the state apparatus; and (absent major conflicts within the political-cum-economic elite) the right atmosphere is created for positive-sum decisions that strengthen the state, benefit the elite, and enhance the accountability of the state to the propertied elite over fiscal and policy issues.

In many developing countries LTUs are set up as an enclave tax administration unit, and later rolled out across the entire tax administration. This renovates existing tax policies and taxation, spearheads the unification of VAT and income tax, and introduces modern auditing, electronic filing and the functional organization of work. In broadening the base of self-assessment and withholding taxes, LTUs play a pioneering role. A review of revenue collection in selected OECD countries (see Table 2.3) shows that LTU corporate taxpayers"

share of corporate income tax revenues ranges from a minimum of 16% (Norway) to a maximum of 90% (the US).

Table 2.3: Tax collection by large taxpayer units in OECD countries for 2006-2007

Country	Tax collected (Figures in billion Euros)	Percentage of tax collected	Taxes administered
Australia	€29.3	64.5%	corporate income tax (CIT)
Canada	€12.9	53%	CIT
France	€118	33%	CIT &Business local tax, VAT, Local Tax
Ireland	€18.8	41.3%	CIT, VAT, Employment tax, Excise, Customs, Vehicle registration tax, Stamp duties
Netherlands	€80	60%	CIT, VAT, Employment withholding tax
Norway	€1.25	16%	CIT
UK	€160.8	70%	CIT, VAT, Employment tax, Petroleum tax
US	€228.4	90%	CIT

Source: OECD, 2009

The US Large Business Unit collected 228.4 billion euros of corporate income tax in the tax year 2006-2007, which equals 14.6% of national tax revenues. Australia collects 64.5% of corporate income taxes from LTUs and Canada 53%. In some countries, for instance the UK and France, LTUs collect more than one tax, including income tax, VAT, customs, excise and employment taxes. Seventy per cent of the aforementioned taxes in the UK and 60% in the Netherlands are provided by LTUs. As specialised tax administration units, LTUs stand out because of their sophisticated record keeping and risk management strategies. Almost all LTUs have computerized data management and information systems, even in developing countries. LTUs have a comparatively efficient and less corrupt workforce, and their organization follows a functional design. In particular, their collection efforts through intensive monitoring of filing, and their collection of arrears, make LTUs an essential organ of tax administration (Bodin, 2003; Santos, 1994).

2.8.2 Challenges and Benefits of Managing Large Corporate Tax Compliance

This research will be conducted in the context of developing countries" tax administration, whose common features are: a small revenue base, low tax compliance, high collection costs and a huge informal sector (Joshi and Ayee, 2008). In developing countries, tax administrations suffer from serious problems of poor record-keeping, inefficiency and bureaucratically designed corporate governance systems. Moore"s (2008: 41) findings on developing countries" tax administrations are that, "the taxable units are small, so the overhead cost of collection tends to be high ... the dearth of records of economic transactions and the limited use of banking systems encourage face-to-face interaction between taxpayer and tax assessor/tax collector, and oblige the latter to make discretionary decision about tax liabilities that can easily be independently validated."

In addressing the above issues, the assessment, collection and enforcement of the taxes of large corporate taxpayers in LTUs have been separated through the functional distribution of the work. In most cases, enforcement actions towards large corporate taxpayers are weak compared to the other functions. For instance, the Uganda Large Taxpayer Department (LTD), established as a special wing within the SARA, failed to achieve its monitoring and enforcement goals after an initial success, like other sub-Saharan revenue authorities (DFID, 2001; Kangave, 2005). In evaluating the performance of the Ugandan LTD, the DFID (2001:34) states that, "it is still too soon to judge the impact on revenue of the Large Tax-payer Department in Uganda, but so far this appears to have been limited." It is argued that the explicit focus on large corporations may have an adverse effect on small taxpayers and weaken the LTUs" capacity to raise tax compliance in a socially cohesive manner (Terkper, 2003; Phillips, 2008). Phillips (2008: 129) reiterates that, "state-building … is undermined when developing country governments depend on narrow tax base and coercive tax

collection … dominant enterprises may use political influence to secure tax exemptions. Micro and small firms can go into informality."

In addition to the above, large corporate taxpayers" view of tax law complicates the compliance issues further. McBarnet (1992) argues that the tendency of large taxpayers is to follow tax law by its intention, not by letter of the law. Large taxpayers actively try to transform the law into routes of tax avoidance, or finally break the law in such a way that they are not caught (Braithwaite and Wirth, 2001) with the help of hired expertise and political contacts (Brondolo, 2009; Phillips, 2008). Braithwaite and Wirth (2001) point out that managing large corporate tax compliance is more daunting than managing that of individual taxpayers because of the differences in their compliance patterns. The individual tax compliance pattern (see Figure 2.4) is pyramidal, with most of the taxpayers lying at the bottom, whereas the large corporate tax compliance pattern is oval, with most of the taxpayers in the grey area in the middle. What is needed, according to Braithwaite and Wirth (2001), is for tax compliance strategy to push the middle group towards the bottom to make the compliance pattern pyramidal and to deal with their compliance by self-regulation instead of command and enforcement.

Figure 2.4: Patterns of individual (left) and corporate (right) tax compliance
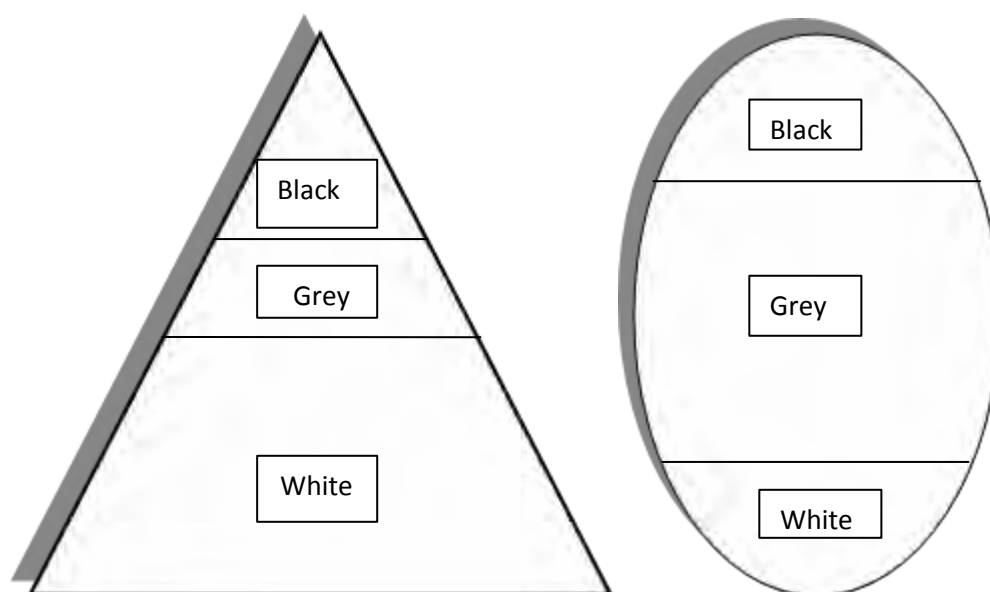
Source: Braithwaite and Wirth, 2001

A further challenge for corporate tax compliance management is a continued lack of professionalism, widespread corruption and political intervention. Many large taxpayers successfully hide income by setting up "shell" offshore corporations or having a partnership with their parent corporation instead of a subsidiary relationship (Easter, 2008), or enjoying tax holidays through undue political intervention (McCarten, 2004). According to the OECD (2009), some of the major compliance issues faced with respect to the tax compliance of large corporations are: parent-subsidiary and related-party cross-border transactions (e.g. transfer pricing); tax havens and offshore entities transactions; claims for foreign tax credit and captive insurance; entity misclassification and distortion of market valuations; differential accounting practices for parent and subsidiary corporations; inter-corporation financing arrangements and thin capitalization; and tax avoidance through foreign currency option accounts, complex arbitrage pricing and valuation of derivatives. A survey of US corporations shows that nearly all large corporations and more than half of medium sized

corporations have been offered safe transfer of money by tax shelter promoters (Slemrod, 2004).

The good side of managing large corporations is that, due to the requirement of high-quality financial and accounting standards by the local and international accounting bodies, large corporations have to fulfil strong reporting and compliance requirements with respect to their investment and international trade (Kieso et al., 2011:6). These control requirements ensure access to the transaction records needed to make the auditing process transparent. Large corporate taxpayers are particularly helpful in collecting taxes from other taxpayers under the withholding tax arrangement. Their role in increasing FDI (Foreign Direct Investment) and employment in developing countries is also acknowledged.

2.9 Large Corporate Tax Compliance Models: Are They Coercive or Persuasive?

The tax compliance philosophy as a whole assumes that taxpayers are not homogeneous in their risk and revenue characteristics. Each group of taxpayers poses different risk and revenue potentialities to the tax base, and therefore requires a different set of compliance tools to address them. The ultimate objective of these strategic tools is to increase the level of self-assessed voluntary compliance.[6] The leading compliance models employed to induce large corporate tax compliance are examined below.

2.9.1 Co-operative Compliance Model (CCM)

This compliance model is an innovation by the Australian Tax Office (ATO). The unique feature of the model is that it can be tailored according to the risk and revenue characteristics

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[6]Under a self-assessment compliance scheme, the taxpayer-tax authority relationship is fundamentally based on mutual trust and cooperation, where a taxpayer functions as his/her own assessor. But under an administrative assessment scheme, the tax authorities assess all returns, irrespective of their revenue and risk characteristics.

of the taxpayer (Braithwaite, 2007). To control compliance, the CCM encourages self-regulation through consultation and taxpayer services on the one side and audit and prosecution on the other (Brondolo, 2009). The idea that this model restricts the capacity of tax agencies to examine tax compliance through coercive actions is therefore not correct. In practice, audits are conducted on a random basis and prosecutions are used as a last resort. The basic philosophy of this compliance approach is to prioritize community cooperation and confidence-building. In developing this approach, the major categories into which taxpayers are classified, as Morris and Lonsdale (2004) present them are:

a) Commitment: Willing to do the right thing

These are taxpayers who: are prepared, eager, and able to comply; are dedicated to achieving their obligations; have accepted that they have a responsibility and are ethically obliged to comply; and control their own compliance.

b) Capture: Try to, but don't always succeed

This group represents those who do not aggressively oppose tax payment but sometimes need assistance to fulfil their obligations due to lack of skills. They make mistakes unintentionally and acknowledge them.

c) Resistance: Don't want to comply

This group includes those clients who aggressively resist the self-regulatory system and attempt to avoid their compliance obligations. They believe that tax agencies are actively trying to police taxpayers rather than help them.

d) Disengagement: Have decided not to comply

This group represents those clients who are committed not to participate in the taxation system. They do not care that they are not fulfilling their tax obligations and will never attempt to change their decisions.

e) Game Players

This group represents taxpayers who accept the challenge of outsmarting the tax agencies and do not essentially think they are non-compliant. They often believe that they are honouring their social obligation and operating within the bounds of the law.

The compliance pyramid presented below (see Figure 2.5) shows that the huge majority of taxpayers are managed at the bottom by motivational procedures, and the non-compliant at the top are managed by coercive procedures.

Figure 2.5: Regulatory practice of ATO cooperative compliance model
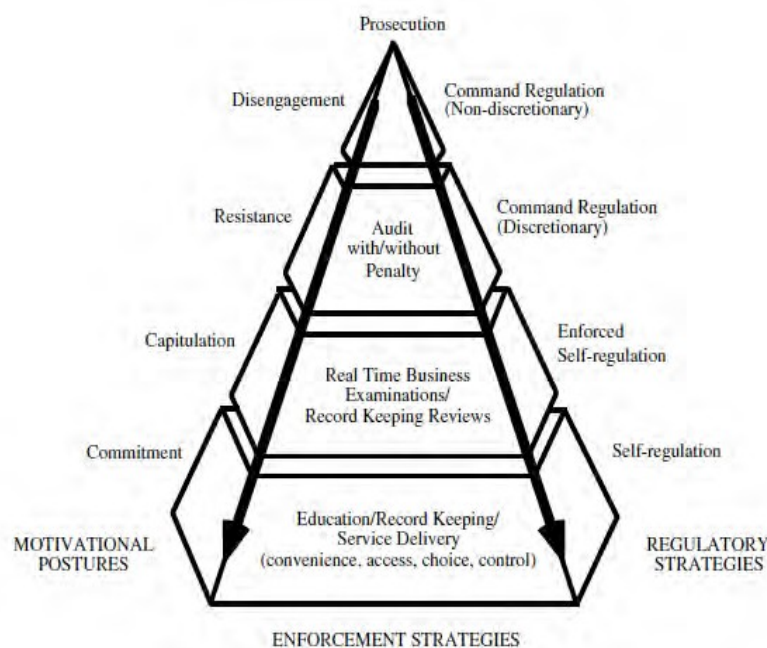
Source: Braithwaite, 2003

The main driver of this model is the committed professional relationship between tax agencies and large corporations that reduces compliance costs, increases voluntary compliance, and improves the clarity of the law. Seven principles underlie the functioning of the model: understanding taxpayers; building partnerships; increasing flexibility and responsiveness towards taxpayers; reviewing tax law; liaising with the judiciary; responding to global business situations; and escalating enforcement when necessary. To organize the compliance model these principles again encompass five processes, i.e. understanding business; assessing risks; planning strategies; implementing strategies; and reviewing and improving compliance performance.

2.9.2 Horizontal Monitoring Approach and Compliance Covenants

Developed by the Netherlands Tax and Customs Administration (NTCA), this compliance model focuses on corrective measures to improve large taxpayer compliance and assumes that risk-based approaches do not solve all compliance problems. Based on findings about risk-based approaches, changing social norms and values, and the behaviour of taxpayers, the following have been quoted as the essentials of the horizontal monitoring approach (CIAT, 2009: 2): mutual trust; understanding and transparency; shared responsibility; real-time working; advance ruling; cooperation with other authorities; and focus on outcome rather than output.

In effecting its changes, this approach replaces the traditional vertical approaches of compliance monitoring. It decides which compliance instruments are to be used to change particular compliance behaviour. It emphasizes pro-active rules and taxpayer services instead of audits and investigations. The pro-active tools attempt to avert non-compliance before it happens to bring long-term improvements in tax compliance. The approach is successful where taxpayers have been persistently failing to comply because of a lack of knowledge of tax laws, enhanced communication or quality taxpayer services. But in some cases the approach demonstrates the need for audit measures to increase awareness among the taxpayers.

During compliance supervision, this approach proceeds thematically through tax and non-tax issues. For example, during the measurement of tax risks in the labour market, issues of illegal labour, including human trafficking, are studied in order to understand the problem comprehensively. In the supervision mechanism for tax compliance, the roles and responsibilities of all partners are well-defined, and issues of transparency, equality, and mutual trust are acknowledged. The most significant aspect of this approach is mutual trust,

which is embedded in the compliance framework through the Internal Control Framework (ICF).

Figure 2.6: The Onion Model of the Horizontal Monitoring Approach
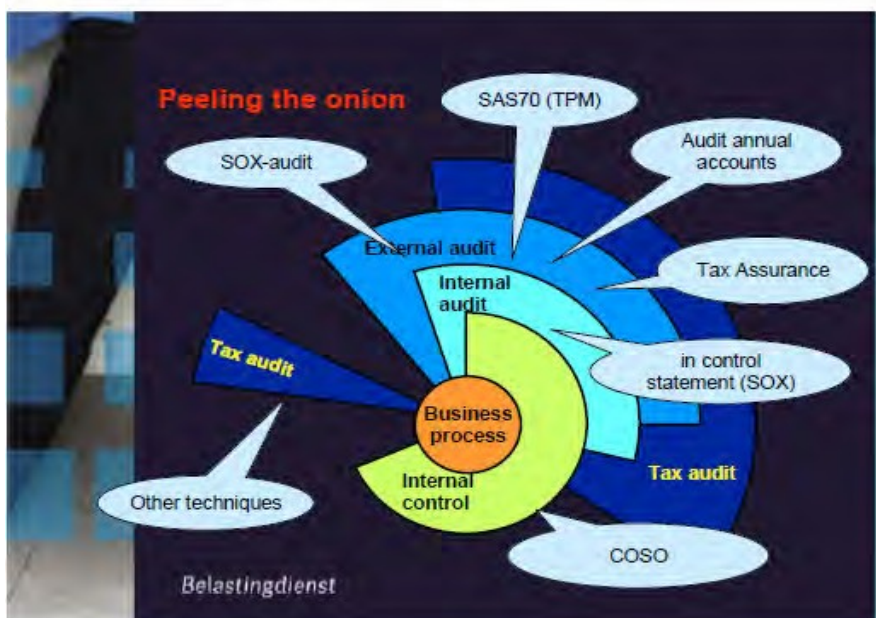
Source: CIAT, 2009

The ICF influences the business process by placing tax assurance and tax audit strategies at the top of the model, as shown in Figure 2.6. The internal control statement is prepared in response to the corporate governance codes and laws that large corporations have to comply with. The ICF designed by businesses organizations must ensure that tax liabilities and their timing are properly reflected in the Tax Control Framework (TCF). According to the NTCA (2008:4), the term TCF refers to, "an internal control instrument that focuses especially on business"s tax processes." The ICF and the TCF are both products tailored for their own use by business organizations and subject to change based on business needs and characteristics. The tax administration"s job is to check whether or not the design and operation of the model is effective (Bette, N.D). This approach is called the onion approach, since all the layers of control surrounding the business processes are stripped away first and then the work is done

by third parties – for example, an external accountant and tax auditor and an internal auditor.

The tax department"s role is to judge whether an organization has developed sufficient tax expertise to be capable of maintaining an adequate standard of work (CIAT, 2009).

As shown above, mutual trust lies at the centre of this compliance approach, and is nurtured through transparency and understanding between large corporations and tax agencies. For the most part, the role of the tax agencies is corrective, motivational and persuasive in the actualization of higher tax compliance.

2.9.3 Real Time Compliance Approaches

In terms of genre, this approach belongs to the cooperative compliance model. The essence of this approach is to address a compliance problem before it arises and resolve it immediately. The approach is different from others in that it does not depend on post-facto analysis of risk. Some of the methods and programmes commonly in use are as follows.

2.9.3.1 Forward Compliance Agreement (FCA)

This model was developed by the Australian Tax Office to offer early resolution of compliance issues. It allows taxpayers to discuss return-filing and tax payment issues easily, in order to avoid penalties and interest. The method is expensive and time-consuming, and has recently been replaced with the Annual Compliance Agreement (ACA). The only difference between the FCA and the ACA is the requirement to conduct discussions annually, with the opportunity to hold open dialogues throughout the year. Through discussion and continuous disclosure, the ATO makes a list of the potential risk areas for tax compliance and draws up a plan to be addressed throughout the year to minimize those risks and gear up compliance.

2.9.3.2 Advance Ruling

Slightly different from the above, this approach interprets tax laws, and their revenue and non-compliance implications, for specific business transactions by large corporations, usually cross-border transactions. The major objective of this approach is to cut the high cost of forward compliance agreements and at the same time solve real compliance issues. For example, in order to handle potential compliance risks in transfer pricing, the tax agency may define the pricing methodology in consultation with the concerned parties through an Advance Pricing Agreement (APA) (Arnold and Mclntyre, 2002). The rulings frame the transaction procedure to be followed under certain terms and conditions for a certain period, failing which sanctions and penalties will be attracted.

Agreed documentation created under the ruling allows taxpayers to avoid penalties, provided the transfer pricing documentation is correct. There are however, variations in the arrangement and use of this method across countries. In France, the taxpayer submits a transfer pricing agreement for the approval of the tax administration that has been prepared on the basis of pre-set questionnaire designed by the tax authority. This brings greater certainty in dealing with compliance risks related to transfer pricing arrangements. In the Netherlands, the tax agency approves the pricing agreements taking into consideration how well the tax control framework (TCF) has been followed in conducting business transactions. In some cases, for example the Compliance Assurance Program (CAP) in the US, an interview is arranged prior to return filing to identify the risks. In Australia, APAs are found to be more effective than audit investigations in plugging revenue leakages from transfer pricing arrangements (Braithwaite and Wirth, 2001).

2.9.3.3 Customer Relations Manager

The UK version of a real-time arrangement involves a customer relations manager. In this arrangement a tax official, supposedly a specialist, is assigned to manage the compliance issues of one or several corporations. Usually, the tax agency expert and the corporation(s) jointly review the compliance risk and make a plan to address it. A risk summary framework concerned with business systems, processes, transactions and behaviours is prepared for monitoring purposes. In the customer service approach, the HMRC builds a quasi-partnership relationship with large corporations to avoid confrontations and power-based regulatory relationships (Clarke et al., 2007). The customer discourse, however, may not be well received by large corporations. The tax director of a UK large corporation had this to say about resisting the customer-service provider relationship (Tuck, 2004: 12): "I just struggle to understand the product they are giving to me as a taxpayer.... I"m quite happy for them to be [HMRC] and collect the tax and I respect that and understand that and that"s their job and I want them to do it properly. They don"t have to pretend I"m a customer."

2.9.4 How Effective Are the CCM and Other LTU Compliance Approaches?

A concern at this point in the study is how well large corporate compliance models are working on the ground. To start with the CCM model, as Shover et al. (2003) argue, despite the ATO providing sufficient resources to implement the model, there was huge ambivalence among field-level tax officials about its long-term effect on tax compliance. Moreover, the model was introduced at a time when there were other changes in the tax agencies, which made it difficult to isolate its impact on large corporate tax compliance. In order to improve large corporate tax compliance, Shover et al. (2003) suggest that a supportive legal and regulatory framework is essential. Shover et al. (2003) particularly state that the effectiveness

of any tax policy or approach depends on the degree of bureaucratic influence and on the flexibility of the tax administrative framework.

Poor payment compliance by large Australian corporations gives some evidence of the model"s shortcomings. Sixty percent of large corporations in Australia were found to be underpaying taxes in the 1990s and their compliance seemed to be below the OECD average (Braithwaite and Braithwaite, 2001). A recent ATO report shows that almost half of the 1100 largest corporations, of which 20% made a profit, did not pay any taxes between the tax years 2005 and 2008. In terms of taxes not paid by large corporations, the ATO levied $2.1 billion in 2009, $3.3 billion in 2008 and $2.5 billion in 2007 through its tax audits actions – about a third of which were made up of penalty payments (ATO report, 2009).

Not only the ATO, but also members of the Australian large taxpayer community, have criticized this compliance model for its poor responsiveness and lack of consistency in providing private rulings and informal advice to the taxpayers (Shover et al., 2003). On the other hand, small and medium taxpayers criticise the model as specially designed to safeguard the interests of large corporations. These resentments by taxpayers, and the evasive tax culture among large corporations, call into question the contribution of cooperation and gentle persuasion to improving tax compliance (CATA, 2006).

There is concern not only about the ATO model, but also about the large corporate tax compliance approaches of the UK and US. It is reported that of the 700 largest business taxpayers with the Large Business Service (LBS) of the HMRC, 181 did not pay any taxes in the tax year 2005-2006 (House of Commons, UK, 2008). The report states that, "businesses pay little or no corporation tax because, for example, they have made a loss, or had losses in previous years, or they are using tax reliefs, or *engaging in tax avoidance* (ibid: 1)." It is also reported that UK multinational corporations largely avoid and underpay their taxes. In 2007,

the LBS estimated a tax evasion of £8.5 billion by large businesses and successfully detected £2.7 billion of false claims for capital allowances and tax relief. To deal with tax evasion, the LBS has found it necessary to introduce a new penalty regime and extensive investigations into high-risk corporations. Under the new penalty regime, not only negligence or detected fraud, but also any attempt at non-compliance, will be penalised. This reflects the significance of coercive measures rather than persuasion in managing tax evasion by large corporate taxpayers.

A similar situation was found among large multinational corporations in the US (ICFTU, 2004). Records show that one third of the 275 largest multinationals in the US did not pay any taxes from 2001 to 2003. In 2003, 46 of these corporations paid no taxes or were entitled to a refund, despite the fact that they disclosed profits of US$ 42.6 billion. Other multinationals paid taxes at a falling effective tax rate during the period mentioned. The ICFTU found that large multinationals paid an effective federal tax rate of 26.5%, in 2001 and 21.4% in 2003.

2.10 Large Corporate Tax Compliance Process

The administrative and legislative procedure of an organisation plays a pivotal role in creating tax compliance (Pashev, 2005). For large corporate taxpayers in LTUs, this fact applies even more strongly. The purpose of this section is to identify the large corporate compliance process and focus on how this may be relevant to understanding compliance issues further. By tax compliance procedure we mean the process and system designed to control the activities of taxpayers.

2.10.1 Return Submission and Tax Payment

A simple and convenient system of filing and paying tax is one of the main objectives of large corporate tax compliance models (Shome, 2004). The filing and tax payment procedures for large corporate taxpayers in most developed countries are electronic, which allows them to submit their returns online and save time and money. Electronic filing ensures accurate records of return submissions and prompt appraisal of taxpayers" liability. Returns and taxes in most countries are submitted directly to an LTU. In some countries, however – for example, Latvia, Uganda and El Salvador – returns are first submitted to designated commercial banks and then the banks send the returns to an LTU. Banks" role as an intermediary may slow down the compliance process, because large corporations may not get priority over the banks" other customers. Moreover, there is a delay whilst information is passed from the banks to the tax office. Evidence shows that the filing rate is higher when returns are directly submitted to LTUs rather than to banks. Baer et al. (2002) find that El Salvador and Honduras, where returns are filed through banking channels, experience a significant amount of filing non-compliance.

Returns in most LTUs can be submitted online or in paper form. This complicates the filing procedure and adds to compliance costs. Some countries, for example Kenya, have a centralized return filing procedure, which helps effective monitoring of large corporate compliance. As regards tax payment, taxes are directly debited from the corporations" bank accounts, while in developing countries most large taxpayers pay their taxes through banks. To expedite tax payments and to collect unpaid tax arrears, a major concern in large corporate tax compliance (Baer et al., 2002), the IMF recommends streamlining filing and payment compliance by electronic filing and automated debit card payment.

2.10.2 Audit Operations

The heavy concentration of tax revenues among large corporate taxpayers requires that tax audit is robust and regular. This is all the more the case given the ability of large taxpayers to siphon off domestic resources by shifting profits abroad so as not to pay any tax on them. The OECD (2009) proposes that a standard auditing body should have a three-level audit operation. The first level lies with local offices, which conduct verification and issue-oriented audits. At the second level, tougher, in-depth, comprehensive audits are conducted by more expert auditors. At the third level, audit planning and monitoring issues are dealt with. LTUs in most countries have audit operations combining these three tiers: issue-based, desk-based, and comprehensive audits. Baer et al. (2002) find that in most countries, LTUs have specialized audit operations suited to the industrial clients they deal with. In many countries large taxpayers have more sophisticated tools for accounting and internal auditing systems than the tax agencies. To make the audit process effective, LTUs need more efficient staff with expert knowledge of auditing, international trade and accounting.

2.10.3 Enforcement and Collection Activities

The necessity for enforcement activities in relation to large taxpayers arises mainly from the need to ensure timely collection of taxes and prevent arrears. Easter (2008) states that a strong indication of non-compliance is tax arrears. Easter finds that tax arrears from large industrial enterprises in Poland in 1998 totalled three per cent of GDP and in Russia five per cent. In order to deal with arrears, an important function of the enforcement wing of LTUs is to take punitive measures against delinquent taxpayers. According to the IMF (cited in Baer et al., 2002), the following facilities should exist within an LTU to streamline delinquent taxpayers.

- Regular and visible procedures to determine payment schedules, collect advance taxes and punish delinquent taxpayers;

- Sufficiently skilled enforcement officers and effective logistics;

- An arrears monitoring system to allow the LTU to classify arrears into recoverable and non-recoverable, and to identify which arrears could be the subject of payment agreements and which could be written off;

- Tough legal backing with experts to enable the LTU to go for search and seizure, freezing of bank accounts, detaining goods and commodities, and to take legal action in the courts to recover revenues from delinquent taxpayers;

- A fitting system of penalties, interest and other sanctions to facilitate easy collection of taxes from non-compliant large taxpayers.

Trends in arrears collection through enforced actions are found to be different across the LTUs in different countries. In Europe, for example, in Hungary and Bulgaria, the collection of tax arrears from large corporate taxpayers has increased during the LTU period. On the contrary, in Latin American, for example in Bolivia, collection of arrears dropped to 4.4% in 1995 from 12.4% in the 1990s. Tax arrears in the Baltic States and in the CIS countries also increased during the tenure of LTU administration. Similarly, in Azerbaijan, Georgia and Moldova tax arrears owed by large taxpayers increased as a percentage of LTU collections during the period 1997 to 1999 (Ebrill and Havrylyshyn, 1999).

2.10.4 Risk Profiling and Compliance Management

Managing risk is a key issue in the realization of optimum tax compliance. According to HMRC (2006: 9), "the concept of risk reviews arises from the New Compliance Process and is the cornerstone of our approach to service and tax compliance." Risk analysis ensures benefits for both tax agencies and large taxpayers. Tax agencies assess the level of confidence they place in corporations; and corporations, on the other hand, can influence tax agencies by changing the level of revenue risk they pose.

A joint approach to risk analysis by a tax authority and taxpayers involves client profiling and identification conducted from the point of view of the whole market or a specific market segment (e.g., for a specific client or clients in a specific industry). In the UK, New Zealand, Canada and South Africa best practice is based on risk profiles (e.g., sector risk profiling). The sector focus is made using a mixture of factors including the complexities of the legislation, the difficulties of particular industries or businesses, and/or the probable revenue at risk. Risk focus may be based on a special activity, for instance, a merger or acquisition[7], which is considered to offer a potential threat of non-compliance.

Figure 2.7: Risk Profiling Framework for Large Corporate Taxpayers
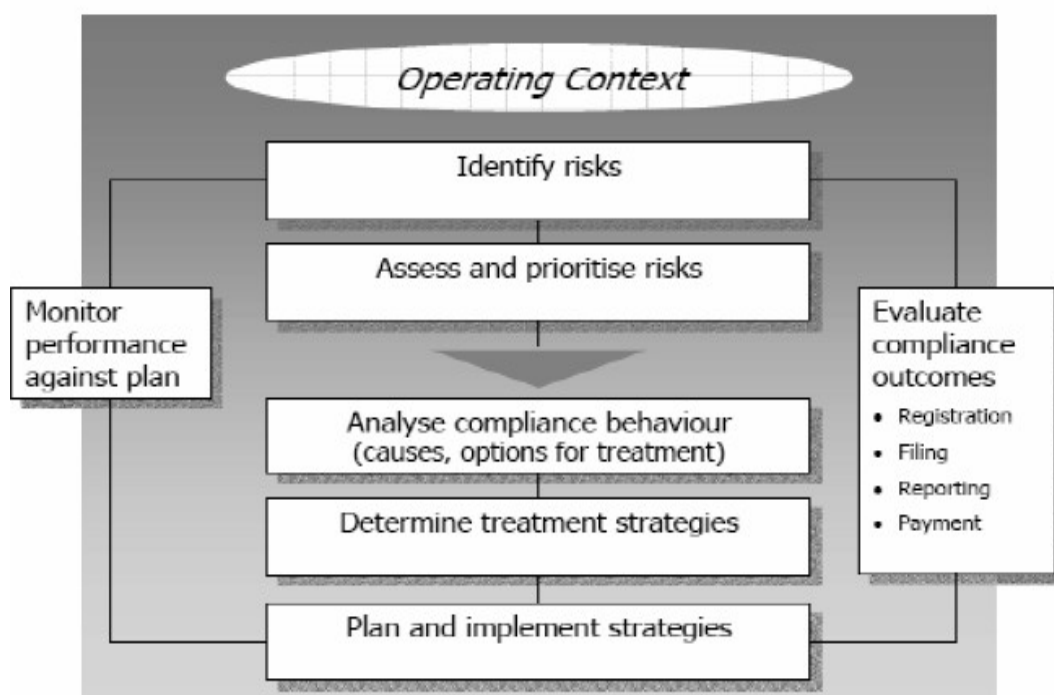
Source: Deloitte, 2005

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[7] A corporation is said to be merged with another when, by agreement, they are combined into one corporation by a legal procedure; whereas in an acquisition a corporation acquires substantial control over another corporation but the legal status of both as entities remains unchanged (Gu, 2010). Mergers and acquisitions can cause increased tax liability through changes in the amount of stock or the par value of the stock, among other considerations (Vines, 1996).

According to Deloitte (2005), as illustrated in Figure 2.7, large corporate risk profiling starts with identifying the potential risks for different corporate sectors. Then the identified risks are assessed and prioritized in order of their potential impact on revenues and compliance. Since all large corporations are not equally risky, they are classified into different groups. Appropriate treatment i.e., whether carrot or stick measures have to be applied, is decided on based on their risk characteristics (Morris and Lonsdale, 2004). The South African Revenue Service Annual Report 2004 shows that risk profiling was applied to all the corporate sectors to enhance the quality of the tax audit. Thus the final step of risk profiling action is to evaluate the outcomes of that action measured in terms of filing, payment or reporting compliance.

Risk analysis approaches involve a wide range of financial and tax-specific indicators, which may include frequent changes in banks, attorneys or auditors; significant related party transaction; changes in management structure and ownership; taxpayers" knowledge of tax law and tax policy; and internal auditing and governance systems. These criteria are applied irrespective of the nature and the source of income of corporations. To decide whether a corporation should be put in the high-risk category, the following criteria are considered:

- The extent to which the financial and tax indicators of the taxpayer in question differ from the industry average. A huge gap suggests a thorough examination of the taxpayer"s financial reports;
- Past records are always considered to be a strong measure of compliance risk. A corporation deviating enormously in terms of its shown income and tax payments from previous years indicates a high risk of reporting non-compliance;
- Economic productivity, e.g., turnover or sales has been huge, but corresponding taxable income or tax payment has been questionably low;
- Evidence of aggressive tax planning and avoidance policies, and involvement in huge non-arm"s-length transactions with related corporations. In the case of non-related corporations, the opportunity for under-or over-invoicing of import prices;

- The nature of corporation ownership – whether public or privately incorporated and whether listed on the stock market or not. Privately incorporated corporations are more risky in general than public limited corporations, since the check on accountability in the latter is higher.

It is recognized that the risk management functions performed in relation to large corporate tax compliance are important to ensure corporate good governance. The Sarbanes-Oxley Act 2002 in the US and tax legislation in a number of other countries have resulted as an increased awareness of effective tax risk management as an inevitable part of good tax governance.

2.11 Use of Coercive and Persuasive Instruments among Large Corporate Taxpayers

In achieving greater control over large corporate taxpayers, both coercive and persuasive approaches are employed by tax agencies. There is no concrete evidence of whether these compliance tools have succeeded or failed in creating tax compliance. The huge book-tax differences among large corporations causes Hamilton (1994) to argue that tax compliance cannot be purely voluntary and therefore a matter for persuasion. If tax payment were really persuasive and voluntary, there would not be any need for penal measures in the tax system. In practice, there are strong punitive measures in tax laws, which taxpayers have to take account of. Hamilton (1994) proposes that the effect of legislation and its link to fairness have to be taken into account in understanding large corporate tax audits. In an IMF study of the Philippines Bureau of Revenue (BIR), it was found that coercive measures were less strongly pursued, which raise questions as to whether coercive actions are crowded out by the use of persuasive actions in the case of large corporate taxpayers (IMF, 2002).

Moore (2008) points out that large corporate taxpayers enjoy huge bargaining powers in relation to the tax authorities and force tax agencies to be persuasive in their disposition.

Persuasive working ensures a certain flow of revenues to the tax authorities, and in exchange large corporations feel safe of their investments (Easter, 2008). A coercive, uninformed and one-sided approach to taxation by a tax authority may induce large corporations to disinvest and to shift capital elsewhere. Moore (2008) argues that negotiating with the largest taxpayers becomes a more necessary choice for a state when the state has few internal and external sources of revenue. This is particularly the case for developing countries, where the informal sector is large, and import revenues are shrinking due to international pressure for tariff reductions. Because of the huge contractual power of large corporations, the governments of developing countries even tend to spare these corporations when they break local labour and environmental laws (Steinmann and Kumar, 1998).

Easter (2008) argues that in order to pay off public debts with tax revenues, the post-communist tax administration in Russia applied a coercive approach to large corporations. Unfortunately, this attempt ended in fiasco in terms of the intra-elite conflicts that arose in the process of state formation, where the bargaining power of the taxpayer was one of the pivotal considerations. Easter (2008: 67), in comparing the post-communist state building processes of Russia and Poland and their impact on revenue generation, comments that:

> In Russia… post-communist state building took place amid a protracted and polarizing intra-elite conflict over the direction of the transition. …. unlike in Poland …protest claims over local revenue resources. Elite bargaining produced a tangled web of special favours that ultimately undermine the efforts of the state to build the capacity to extract sufficient funds.

Similarly, Tanzi (1995) points out that coercive corporate marginal tax rates may affect the competitiveness of large business investments. As a result, large businesses may relocate their business. Clausing (2009: 703) argues that, "decisions of governments regarding corporate taxation affect the decisions of multinational firms regarding where to locate

economic activity and where to book profits. Yet, multinational firm decisions also impact governments, affecting the amount of revenue that they receive and ultimately the types of tax policies that they choose." Clausing (2009, quoted in Mooij and Ederveen, 2005) states that a one percent reduction in the host country tax rate raises foreign direct investment by 2.9%. Supporting this, McCarten (2004) reminds us that the process of globalization plays an active role in the creation and recreation of large business investment. In other words, forced taxation anywhere engenders a threat of reduced tax compliance and reduced public revenues. In an open international economy the practice of attracting foreign capital by reduced or concessional tax rates is found to be stronger (Radaelli, 1997; Tanzi 1995). However, how cuts in tax rates affect the competitiveness of foreign investments depends on the nature of the large taxpayer-tax administration relationship. In a welfare state, tax cuts result in increased capital and business, whereas in an interventionist state, things may go in the opposite direction, as Leroy (2004) argues.

2.12 Chapter Conclusion and Summary

Coercive tax compliance techniques are the antithesis of persuasive tax compliance techniques, as demonstrated in the above review of the literature. Contemporary tax administrations, LTUs in particular, have employed both techniques in addressing the tax compliance issues of large corporations, with a greater tendency towards persuasive techniques. LTUs" mission statements and procedures categorically declare trust and cooperation as the main compliance mantra to be pursued among their large corporate taxpayers. Persuasive instruments and mutual co-operation are fully exhausted before resorting to coercive practices. A range of socio-economic reasons has been attached to this marked shift from the stick to the carrot approach in dealing with large corporate taxpayers. Despite more emphasis being given to persuasive instruments than to coercive ones, little is

known about the comparative effectiveness of these techniques with respect to the compliance behaviours of large corporate taxpayers. This gap in the knowledge of tax compliance literature needs to be filled. This research is an attempt to fill the gap by finding an answer to the problem of how these two antithetical compliance techniques are implicated in the income tax compliance issues of big corporate taxpayers in the context of a developing country"s tax agency.

CHAPTER III
ANALYTICAL FRAMEWORK

3.1   Introduction

The previous chapter provided a survey of coercive and persuasive tax compliance theories and instruments in relation to large corporate taxpayers, and it identified a gap in the literature. This study aims to fill that gap, and the present chapter presents its analytical framework, which includes the research problem, the items for analysis, and the underlying research logic. The chapter will show how the research design was built up to identify important research variables, translate them into observable items, and indicate the key data to be collected from the field. It will cover the research method, so as to describe data sources, sampling and collection techniques, and the means of data triangulation. It will set out the data analysis techniques and the structure followed in order to produce significant evidence from which conclusions could be drawn. It will provide a guide to the fieldwork to be carried out in Bangladesh and the potential problems in researching large corporate tax compliance. Kramer (2007:17) defines an analytical framework as "a construction of theoretical ingredients to tackle specific question" that is "used for selecting data and interpreting patterns."

This chapter is organized as follows. First, we follow the development of the research question. Second, the study perspective and variables are identified. Third, the design, content, and validation of the research instruments are discussed. Fourth, data sources and sample procedures are outlined. Fifth, the data analysis techniques are reviewed.

3.2   Research Questions

The main research question of this thesis, as already discussed in section 1.3, was formulated after a review of the relevant body of knowledge as presented in chapter 2. The literature reviewed showed that empirical evidence on the impact of coercive and persuasive tax compliance measures was sparse. The very few works focusing on the effects of coercive and persuasive instruments on individual and sole proprietor tax compliance included the works of Murphy, 2005; Hasseldine et al., 2007; Doyle et al., 2009; Frey and Feld, 2002; Kornhauser, 2007; Torgler, 2005; Chung and Trivedi, 2003; and Blumenthal et al., 2001. The few works that focused on large corporate taxpayers studied only the influence of selective coercive tools, such as penalties, audits and tax rates. These included works by Kamdar, 1997; Short, 1997; Slemrod and Venkatesh, 2002; Okike, 1998 and Aparicio et al. 2011. Only Taliercio (2004) had looked at the taxpayer service issues of large corporations. Although the persuasive paradigms provoked strong arguments, the empirical research had focused exclusively on coercive instruments (Jacobsen, 2010). Hasseldine et al. (2007:173) state that, "although persuasive communications have been examined in some accounting-related studies (Kadous, Koonce and Towry, 2005), to date none of those studies has used persuasive communications to encourage compliant reporting behaviour and to deter noncompliant reporting."

None of these studies had looked at how these contrasting compliance paradigms contributed to higher tax compliance among large corporations. Another of their limitations was that they had been conducted in developed countries using survey data, due to a lack of access to real tax office data (Gupta and Mookherjee, 1998; MacLaren, 2003). Some researchers had used real tax office data for behavioural studies of taxpayers, but these data were not very good for generalization (Hasseldine et al., 2007). To date, the comparative effects of motivational and

sanctions-based enforcements had not been examined in studying the tax compliance of large corporations, which triggered the following research question:

Are coercive or persuasive tax compliance instruments more important for the tax compliance of large corporate taxpayers in the LTU of Bangladesh, and why?

The research question was divided into several sub-questions, each of which focused on a particular aspect of the study. The first aspect of the problem was to measure the level and pattern of tax compliance. The second was to find how much of the achieved compliance was attributable to coercive, and how much to persuasive compliance techniques. And the final aspect of the study was to investigate potential explanations as to why coercive or persuasive compliance techniques were important. The following important as well as intriguing sub-research questions were to be attempted:

Research sub-questions

1. To what extent are large corporate taxpayers compliant?

2. What contributions do coercive instruments make to the tax compliance of large corporations?

3. What contributions do persuasive instruments make to the tax compliance of large corporations?

4. Why do some instruments contribute more to the tax compliance of large corporations than others?

Once the research questions had been formulated, the next challenge was how they would be answered. The next section describes the creation of a theoretical structure to define coercive and persuasive instruments and how they might influence tax compliance. It gives a summary of the research process and the tax compliance environment.

3.3   Research Logic to Tackle the Research Questions

Explaining the tax compliance performance of large corporations in terms of coercive and persuasive instruments is the key theme of the questions raised in this study. The number and nature of coercive and persuasive tax compliance instruments is varied, and depends on the nature and class of taxpayers. This study, based on previous tax compliance research and on LTU compliance models and approaches (see sections 2.7 and 2.9), identifies three coercive and three persuasive instruments. The coercive instruments are: *tax penalty, tax audit, and imprisonment*. The persuasive instruments are: *taxpayer service quality, simplified tax law, and mutual understanding*. Operational definitions of each of these instruments have been placed in Appendix A.

As shown in Figure 3.1, box 3, tax compliance instruments can be classified into two groups, persuasive and coercive, and these groups are placed in boxes 4 and 5 respectively. These boxes are further elaborated to specify the coercive and persuasive instruments to be studied in this research, which are placed in boxes 6 and 7 respectively. The influence of these instruments on tax compliance is to be tested through statistical modelling (elaborated in section 3.12). In the statistical models, the coercive and persuasive instruments are treated as independent variables, and tax compliance as the dependent variable. Tax compliance, the dependent variable, is shown in box 8, and has three components – filing, reporting and payment. The three components together form overall compliance (see sections 5.4.1 and 5.5.1).

Theoretically speaking, a large corporate taxpayer may fail or succeed in all three compliance components, or may fall somewhere in between these extremes. This means that a large corporate taxpayer may be fully compliant, partially compliant or not at all compliant. Similarly, a tax compliance instrument may not affect any of the compliance components or

may affect one or more components. Thus the level of influence may be of three kinds: zero, partial or full. A coercive or persuasive instrument influencing all three components – i.e., affecting overall compliance – is more important than one influencing a single component. The links from boxes 6 and 7, for this reason, lead to box 8, indicating influence on the compliance components. The final link is drawn between boxes 8 and 9, as box 9 contains the cumulative effect of the changes occurring in box 8. Boxes 1 and 2 show the broad socio-economic and tax administrative environment within which the large corporations and tax agencies operate.

The two-way arrow in the figure implies that there exists an interactive and mutual reinforcement between coercive and persuasive instruments. The effectiveness of a coercive instrument in producing higher tax compliance may depend on the effectiveness of a persuasive instrument, or vice versa. For instance, a huge financial penalty can only be justified and may only bring a successful outcome if an attempt has first been made to persuade the taxpayer with quality services. Again, the coercive force of a tax audit or imprisonment may be less necessary if tax laws are really simple and communicable. The complex interactions between tax compliance and attitudinal measures (Sheffrin and Triest, 1992) and between friendly persuasion and a taxpayer"s gender (Chung and Trivedi, 2003) are considered a potential factor in the compliance literature. Although considering gender, as a compliance factor, is confined to the study of individual taxpayers" compliance, it has significant bearing on understanding corporate tax compliance. Ayres, 1991 (quoted in Conley and O"Barr, 1997) empirically examined the impact of gender and race on corporate misconduct in the automobile industry. He found that the car dealers" expected profit from female customers was much higher ($504) than that from male customers ($362), and customer discrimination was high when the salesperson"s gender was the same as that of the customer. To explain this finding, Ayres, proposes a ‚revenue based" theory that posits that

peoples' willingness to pay depends on their gender and race. Thomson et al. (2005) claim that to turn corporations into good citizens, a better gender balance is needed on corporate boards, because female directors tend to make better decisions *on tax and ethical matters* than male directors. Thomson et al. (2005:18) state, "Woman are more interested than man in ethical and corporate social responsibility issues …or the presence of woman limits the power of the male …to…creating policies that are ethically questionable." In support to this, Klenke (2011) shows that the involvement of woman directors in large corporate audit and compensation issues has a positive correlation with corporate financial performance. This suggests that the gender of corporate managers and directors is important for corporate investment and tax payment decisions.

The interaction between the coercive and the persuasive instruments, as represented by the two-way arrow however is not fixed over time. Rather, they change due to changes in the environment and external agents in the form of taxpayer services or mutual understanding (Kornhauser, 2007).

Figure 3.1: Summary of Research Logic
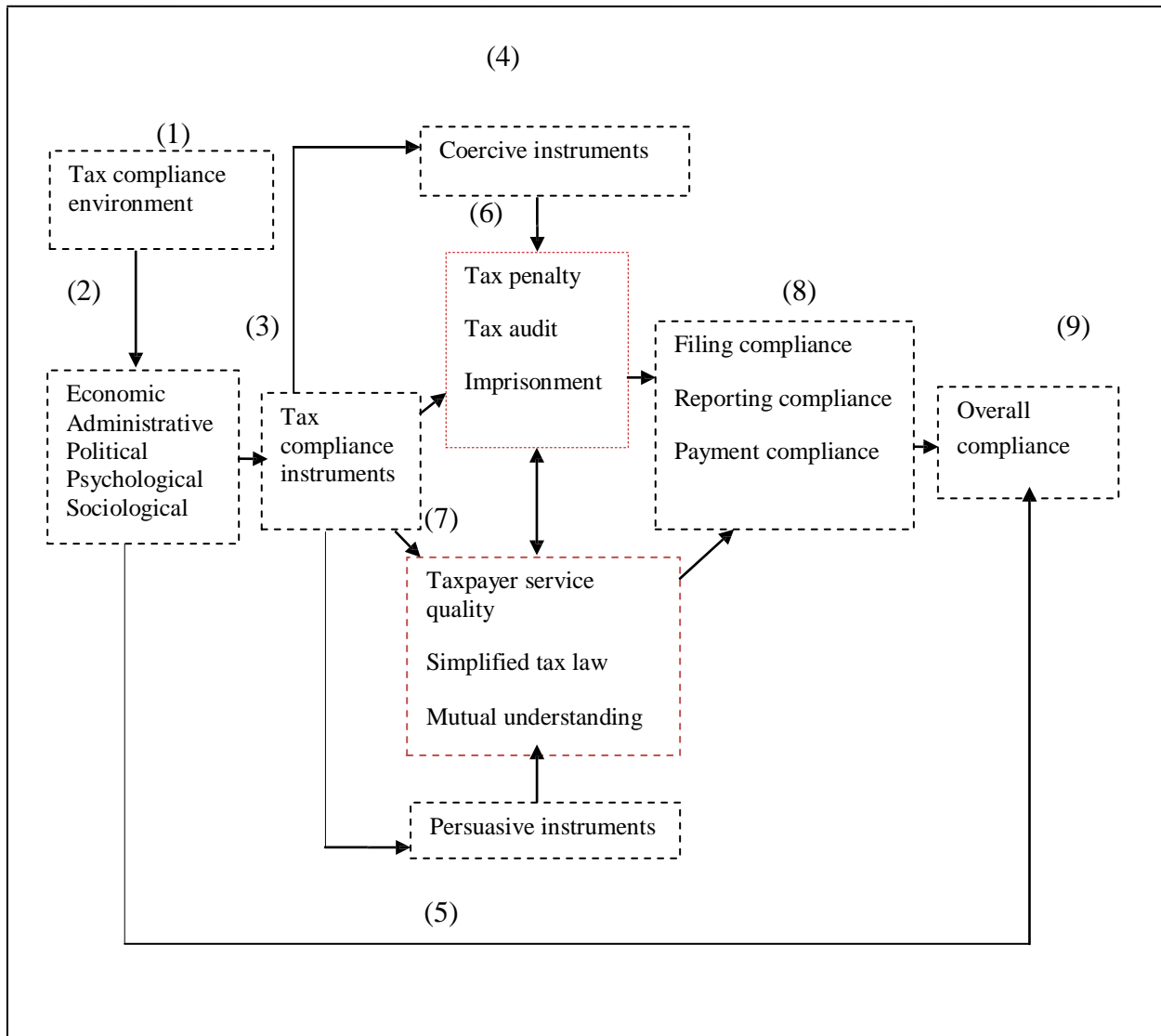
Source: Own figure

At this stage, the obvious question is: what might be the underlying reasons for a coercive or persuasive instrument to be important or unimportant? This is the fourth or the final research sub-question of the study. Answer to this question is explored by examining the links between created tax compliance (box 9) and the extant compliance environment (box 1). To put it differently, large corporate taxpayers are an integral part of the broad socio-economic and tax administrative environment and their compliance behaviours are likely to have direct and/or indirect links to these perspectives. Therefore, understanding the complex socio-

political network and seeking answers in the light of these realities will make the research arguments convincing. Based on this theoretical structure and argument, the next section spells out the steps to be followed in the collection, analysis and interpretation of data with respect to each research sub-question.

3.4 How to Answer the Research Questions?

As demonstrated in section 3.2, the main research question was broken down into four sub-questions. The approach taken to answer a research question depends on the type of research design and the methods employed for the research (O"Leary, 2009). For this study it was decided that a mixed method approach would be the best for answering its research question. Detailed explanation about why mixed method approach best fits to this study has be presented in section 3.7. The survey questionnaire would mainly provide data for answering questions 1 to 3, and the elite interviews would feed into question 4. Survey data would be summarized, analysed and interpreted by regression methods, and the interview data would be analysed through an interpretivist approach (see section 3.12.4).

3.4.1 Answering the First Research Sub-Question

The objective of the first research question, as Table 3.1 shows, was to measure the level of tax compliance among large corporate taxpayers, which would also be used as the dependent variable in the statistical models. First, tax compliance as a variable would be divided into three components: filing, reporting and payment; Second, the components would be added to measure overall compliance. Data needed for tax compliance measurement would be collected from the *real tax returns* of large corporate taxpayers. However, data for some of the predictor variables would be collected from a questionnaire survey (see section 3.12.1.3).

To measure whether a corporation was filing compliant, the date of its return submission would be collected from the returns register (see Panel A, Table 3.1). Data on reporting compliance would be available from the audit register, and this would show whether a corporation had received any audit demands or adjustments. Corporations without audit demands would be treated as reporting-compliant, and corporations with audit demands as reporting-non-compliant. Similarly, corporations without any shortfalls in payment would be payment-compliant, and corporations with shortfalls in payment would be payment-non-compliant. Collected data would be analysed through frequency distribution and percentages to measure the component and overall compliance of large corporate taxpayers.

3.4.2 Answering the Second Research Sub-Question

The objective of the second research question was to investigate the contribution of coercive instruments to tax compliance. The summary logic, as outlined in the previous section, charts these instruments and provides reasons for including them in this study. Required data on the effect of coercive instruments would be collected both by survey and from tax office records(see Panel B, Table 3.1). Data on audits would be gathered from real sources – tax audit records. For penalties and imprisonment – the other two coercive instruments – data would be gathered by a questionnaire survey among large corporations (see Appendix C for the survey questionnaire and section 3.11 for sampling techniques). The reason for this was that tax penalties and imprisonment as coercive actions were not frequently applied by the LTU, and relevant data were not well managed. It might also be that some taxpayers were more affected by a particular type of coercive action than others, and the frequency of using the various coercive measures might differ across taxpayers. Moreover, for a regression model to work, variation across observations was an essential requirement, and this could be ensured in survey data reflecting different opinions from different respondents.

Table 3.1: Evidence needed to answer research questions

Sub-questions	Dependent (outcome) variable	Data sources	Analysis	Output	Interpretation
Panel A Question 1 To what extent are large corporate taxpayers compliant?	Filing compliance	Return register	Descriptive univariate statistics	Frequency, crosstab, ratio	Interpreting compliance levels for component and overall compliance
	Reporting compliance	Audit register	Descriptive univariate statistics	Frequency, crosstab, ratio	
	Payment compliance	Tax payment register	Descriptive univariate statistics	Frequency, crosstab, ratio	
	Overall compliance	Combining data from filing, reporting and payment registers	Descriptive multivariate statistics	Frequency, crosstab, ratio	
Panel B Question 2 What contributions do coercive instruments make to the tax compliance of large corporations?	Penalty	Survey data	Binary logistic regression, CHAID, and multilevel logistic regression with statistical controls	S.E, Wald stat, sig., pseudo r-square, CHAID models, fixed and random effects	Interpreting regression outputs- level of significance, Beta values, S.E., CHAID models, fixed and random effects etc.
	Audit	Tax office data	As above	As above	
Question 3 What contributions do persuasive instruments make to the tax compliance of large corporations?	Imprisonment	Survey data	As above	As above	
	Taxpayer service	Survey data	As above	As above	
	Simplified tax law	Survey data	As above	As above	
	Mutual understanding	Survey data	As above	As above	
Panel C Question 4 Why do some instruments contribute more to the tax compliance of large corporations than others?	Regressions outputs ,interviews and other documents are used as the basis to answer sub-question 4	Interview themes and document analysis + Own experience and judgment (ad-hoc reasoning) + Theoretical plausibility (priori reasoning) = Observations			Explaining, interpreting and exploring interview excerpts and other documents to establish links

Source: Candidate"s own figure

Survey data on tax penalties and imprisonment would be dummied to fit into logistic regression models (see sections 3.12.1.1 and 3.12.1.2) and to show likely association between instruments and tax compliance.

However, it is difficult to get a robust estimate of the significance of instruments without looking at the corporate context. Large corporations in the LTU are grouped into finance, manufacturing and service sectors. Again, they are grouped as private versus public and local versus multinational. This grouping or clustering of the corporations into different corporate sectors or ownership patterns might itself be a strong reason for the generation of tax compliance (see section 3.12.3 for detailed discussion). Therefore to answer this and the next research sub-question dealing with the significant persuasive instruments, considering the effects of corporate context would be important. Once the significant instruments were identified, the next job would be to explain why the instruments were found significant. In doing this, it would not be necessary to carry on the discussion on context variable (i.e., either corporate sector or ownership pattern or location status) in the work reported on in chapter 7. But chapter 8, which summarises and concludes the thesis, will recapitulate on the issues of corporate sector and its influence.

3.4.3 Answering the Third Research Sub-Question

The objective of this research question was to tease out the role of persuasive instruments in the compliance measured in question one. Data on all persuasive instruments would be collected by survey and would be dummied to fit into the regression model, as was to be done in the case of coercive instruments. Technically, this question would be answered in the same way as the second research question (see Panel B, Table 3.1). It is important to note that the

statistical measurements for both sets of instruments would be compared to identify which one was more significant in understanding large corporate tax compliance. For this reason, their coefficients and statistical significance would be compared.

3.4.4. Answering the Fourth Research Sub-Question

The purpose of this question was to explain why some instruments were more important than others in the achievement of tax compliance. This would be done mainly in three phases: first, in the data analysis stage, where statistical control would be applied to get rid of intervening or confounding variables between the independent and dependent variables (see section 3.12.1.4 on control variables). Second, the research contexts and perspectives would be taken into account through elite interviews, and observations would be generated from there (see Panel C, Table 3.1). Observations might turn into a valid and acceptable proposition if they could be supported by empirical evidence or by reasoning from the works of other researchers. This necessitated looking at similar work done by other researchers, which would be the third step towards making claims about causality. Systematic comparison of links observed between tax compliance and the selected instruments would make it possible to produce a causal pattern. As the third and final step, to arrive at the causal pattern, the judgement of the researcher himself would be a strong resource (this is called ad-hoc reasoning). The next section describes the creation of the research design to be used for the study.

3.5   Research Design

The nature of a research question, whether descriptive or explanatory, informs its design. Guifree (1997:1) points out that, "the only clear rule in selecting a design is that the question dictates the design." The exploratory nature of this study required it to ensure two attributes: logical structure and sufficient evidence (Yin, 1989). From this perspective, several designs

could fit the study. These included a laboratory experiment, a field experiment, and a survey. Laboratory experiments offer good control over variables and the random assignment of variables, yet they lack realism and generalizability. Kornhauser (2007:142) argues that, "one of the more important limitations of empirical research regarding compliance is the fact that much of the research has been conducted in a controlled laboratory situation. Although this allows researchers to isolate individual effects, it also weakens the results. In any controlled experiment, there is always the question of whether what the subject does in the controlled environment represents what he or she would do in the real world." On the other hand, the field survey is strong on realism and possesses theory orientation, though it lacks control over independent variables and thus lacks precision (Anderson, 1988).

It was decided that this study would use a cross-sectional design – a kind of correlation research – to contrast different people or issues at a point in time (Barlow and Durand, 2011). Using a cross-sectional design, measures from two different sets of issues (e.g., coercive and persuasive instruments) or people can be collected at a point in time and the degree to which they differ over the dependent variable (e.g., tax compliance) can be compared (De Vaus,2009). In defining cross-sectional design, Ruane (2004:93) points out that, "it is the research design equivalent of the ‚Polaroid moment" ... a snapshot freezes a moment in time ... obtains information from a single group of respondents without any attempt to follow up."

The major concern of this type of design, as opposed to a randomized control or experimental trial, is the issue of causation. Cross-sectional research design, which is highly dependent on regression-based quantitative analysis, can define the independent variables, but fails to manipulate them in the way an experimental design does (Kumar, 2005). Bryman (1989:87) points out that, "survey designs in which data are collected at a single juncture are frequently referred to as ‚correlational" or ‚cross-sectional" survey designs." Bryman adds that finding a

relationship between variables is the main focus of a cross-sectional design, not causality. Causality, in general terms, refers to "the regularity or the succession of one kind of events and another of the kind which usually follows" (Harré and Secord, 1972, cited in Bryman, 2004). Since cross-sectional design lacks a time dimension, involving only one-off data, it cannot focus on changes in an observed relationship over time (Ruane, 2004).

However, Marsh (1982) disagrees with Bryman and argues that cross-sectional designs rather take a passive approach to establishing causal conclusions by correlating variables. Marsh claims that correlated variables in a cross-sectional design do not establish direct causation as such, but they do not indicate that finding causation is impossible. As an example, Marsh (1982:73) states that, "finding a correlation between smoking and lung cancer in no way proves that smoking causes cancer, but it does mean that the hypothesis cannot be ruled out." Likewise, Blalock (1964, cited in De Vaus, 2009) argues that time-ordered variation between two variables, as we see in panel or experimental design, does not confirm causal links. This is because there may be intervening or confounding variables in the causal chain.

3.6   Establishing Causality in a Cross-Sectional Research Design

In tax compliance research, the use of cross-sectional surveys was not new. Slemrod had used cross-sectional analysis to measure the complexity of US income tax law, with the acknowledged limitation that the independent variables might be confounded with absent variables. Other prominent and early tax compliance research based on cross-sectional design had included the work of Blumenthal et al. (2001) and that of Clotfelter (1983).

Inferring causation between tax compliance and chosen tax compliance instruments required the fulfilment of two basic criteria: first, there should be a co-variation between tax compliance and the tax compliance instruments; and second, the co-variation must be explainable by logic (Cook and Campbell, 1979). The first condition could be fulfilled by

conducting a standard correlation and regression model. The test for co-variation could be made stronger by controlling the variables at the data analysis stage; and through multilevel modelling the influence of contextual variables on co-variation could be reduced (Guo and Zhao, 2000; Wong and Mason, 1985; Hayes, 2006). But establishing logical sense in a co-variation would be difficult without information on its temporal order.

There is, however, a strong argument that temporal order does not necessarily mean trend analysis or measurement of some phenomenon over time. Temporal order in cross-sectional design can be imputed in terms of the work of other researches and current theories (John Stuart Mill, quoted in Cook and Campbell, 1979). Imputations can also be drawn from our common-sense understanding or ad hoc reasoning of a fact. De Vaus (2009: 179) argues that, "a priori reasoning involves proposing on the basis of theoretical considerations and ... on the other, ad hoc reasoning on the basis of observed correlation on the data." For example, a causal relationship between sex and income can only be in the direction of sex affecting income. The opposite proposition, that income affects sex, does not make sense and can be plausibly denied without any empirical examination (Davis, 1985; De Vaus, 2009; Tashakkhori and Teddlie, 2003; Bryman, 2004).

Lack of contextual reasoning is another impediment to making causal claims in cross-sectional designs (Kumar, 2005; Yin, 2003; De Vaus, 2009). Improper understanding of study contexts creates difficulty in the allocation of meaning to a participant observation. Without considering the actor"s interpretation of the situation, it may be difficult to understand the intervening process that may lie between variables. However, there are three ways to improve the level of meaning in social sciences (Creswell, 2009; Hakim, 2000): first, by taking an adequate number of factors relating to the economic and social exposure of the

participants; second, by asking people to provide a meaning for certain behaviour or for a phenomenon; third, the researcher may also give a meaning to the behaviour or phenomenon.

Reducing ambiguity of meaning and capturing the unique context of corporate tax compliance issues would thus demand an in-depth discussion with the respondents in addition to survey data. In recognition of this fact, the study would gather evidence by interviewing the relevant individuals in and around the large corporate taxpayer community.

An advantage of cross-sectional design is that the external validity or generalizability – the possibility of generalizing a study"s results to other times, places or persons – is better than that of experimental or panel studies (Bryman, 2004). This is because the design is free from common threats to internal validity, for example, maturation, history and attrition (Cook and Campbell, 1979). Again, ensuring a representative sample from the population is easier for a cross-sectional design because it does not have a time dimension.

Cross-sectional designs can also be better in terms of construct validity and statistical conclusion validity (Campbell and Stanely, 1963; Bryman, 2004; De Vaus, 2009). Construct validity confirms whether the measures employed in a study essentially measure what they claim to measure. And statistical conclusion validity shows the capacity of the model to ensure co-variation between/among variables at a given level of probability and dispersion for a sample size (Gorard and Taylor, 2004; Cook and Campbell, 1979). Bryman (2004) argues that, following the above techniques, cross-sectional designs can also strengthen the internal validity – the causal links between and among independent and dependent variables – of the study.

3.7   Data Collection: Mixed-Method

The purpose of this section is to set out the research method chosen for the study. Research method informs the techniques by which data are collected (De Vaus, 2009). A mixed-method research uses several sources of information from several approaches to get an insight into the research question (Babbie, 2004; Becker, 1996). Axinn and Pearce (2006:1) put forward the idea that, "mixed method data collection strategies are those that are explicitly designed to combine elements of one method, such as structured survey interviews, with elements of other methods, such as unstructured interviews, observations or focus groups, either in a sequential or simultaneous manner."   Varying data sources enables the researcher to collect information that one approach can provide but another cannot, to reduce non-sampling error, and to make sure that the potential bias of one approach does not affect the other(s) (Green and Browne, 2005). Therefore a mixed-method approach uses both quantitative and qualitative methods, which helps to counterbalance the strengths and weaknesses of each method.

In view of the above benefits, this study would employ a mixed-method approach, also called an eclectic or a triangulated research method. This would involve the use of a survey questionnaire, unstructured interviews and document analysis as the major sources of data collection. Another important benefit of this study would be its bridging of the quantitative-qualitative divide, a long-standing debate in social science research.

The quantitative method claims that only science can lead us to know the objective world, which is independent of social, political and cultural influences (Bamberger, 2000). The qualitative approach, on the other hand, argues that to understand the world is to know how people see and define it and attempt to unfold the world through interpretation and contextual reasoning. Each approach has strong logic on its side, and drawbacks as well. Quantitative

investigations sometimes produce an answer that may not make sense. Qualitative research, on the other hand, may pay too close attention to individual behaviour, or give results that fail to establish a connection with larger probable causes of behaviour. To make the division clear, Kalof et al. (2008) and Harding (1987) state that the differences between the two approaches emerge from our understanding of epistemology and ontology. By ontology, according to Harding (1987), we mean the theory of what exists in the real world, whereas epistemology informs us what we can know, who can know and what tests our beliefs should pass through to make a legitimate claim to knowledge.

According to mixed-method research, on the other hand, the quantitative-qualitative divide is not meaningful, because in understanding a fact, numbers and words can play similarly significant roles (Bazeley, 2003). Methodological pluralism can also reduce much of the epistemological tension and the anti-quantitative or anti-qualitative views (Kalof et al, 2008; Harding, 1987; Sechrist and Sidiani, 1995). A further reason for choosing mixed-method research for this study was the multidisciplinary and multi-perspective nature of tax compliance research (Lamb, 2004; Norris et al., 1995). Tax compliance research needs both numbers and words to grapple with its perspectives and its multifarious disciplinary issues. Raabe et al. (2012: 54) argue that, "tax research process requires *mechanical skills* and *critical thinking*. Mechanical techniques are gained and sharpened through knowledge and experience. *Experience* is obtained through working in the field and dealing with real tax problems on a recurring basis."

3.8   How to Integrate the Methods?

A common question in mixed-method research is how to integrate the quantitative and qualitative data. The integration process depends on the sequence, priority and function of the data collected (Morgan, 1998; Morse; 1991).The timing of collecting quantitative and

qualitative data can be simultaneous or sequential, and one set of data may have priority over the other. Similarly, the function and objective of integration may be triangulation or explanation, which may take place at the data collection, analysis or interpretation stage. Based on these variations, the common purposes of integration may be offsetting, completeness, explanation or processing (Creswell, 2009; Grene et al., 1989; Bryman, 2006). No research method is flawless. A valid reason for integration, therefore, may be to offset the weakness of one method by using the other(s). Researchers may be interested in taking a more comprehensive view of the research problem. It is difficult for a single research method to provide a comprehensive view of a problem (Tashakkhori and Teddlie, 2003). Among other purposes, integration is needed to answer different research questions, explain the findings generated by other questions, or to provide a contextual meaning for the variables uncovered through surveys. Mixing both datasets can have an illustrative purpose, which is often referred as, "the meat on the bones" of "dry" quantitative findings (Bryman, 2006).

The purpose of integration for this research was to answer different research questions by different methods. To answer the first to third research sub-questions, quantitative data would be collected through a survey; and to answer the final research sub-question, semi-structured interviews would be conducted. The findings of the quantitative analysis derived through descriptive and inferential statistics would be interpreted or explained by the qualitative data. In explaining the qualitative data, an interpretive approach would be followed (see section 3.12.4). Therefore the purpose of integration for this research was to offset the weakness or complete the findings of the quantitative data through explanation or interpretation from the qualitative data.

3.9   Research Perspectives and Integration

The answer to the question of why taxpayers were non-compliant was not straightforward. Along with economic selfishness, as argued by economists, there might be issues of poor service delivery by the tax administration or political interference in the tax administration (Alm et al., 1992a). Taxpayers might also be influenced by a sense of guilt, peer pressure, or by the rules of social institutions (Schmolders 1959, cited in Anderson, 1988; Gordon, 1989; Myles and Naylor, 1996; Sour, 2002) towards tax payment obligations (see sections 2.2 and 2.4). Along with the main perspectives – economic, social, psychological and political economy – there are tax administrative issues, for example, tax law complexity (Witte et al., 1989) that play an important role in tax compliance studies. Frey (2002) identifies four major perspectives in tax compliance studies, comprising political and fiscal perspectives, socio-psychological perspectives and decision-making perspectives. Morris and Lonsdale (2004) categorize the perspectives as business, sociological, industry, psychological and economic and describe them as factors rather than perspectives. The major perspectives and their features are set out below:

Economic

- Taxpayer is a rational economic calculator;
- Gain from non-compliance is compared against potential losses if the non-compliance is detected;
- Compliance increases with tough enforcement and higher probability of detection.

Psychological

- Taxpayers are problem solvers;
- Personal factors (attitude);
- How willing taxpayers are to take risks;
- What they fear and trust;
- Previous interactions with the tax authority.

Sociological

- Tax compliance is a social problem, depending on group decisions;
- Taxpayers weigh collective rather than individual utility;
- Social codes and institutions deter tax cheating;
- Perceived opportunities for non-compliance;
- Fairness perceptions.

Administrative

- Attitude of tax administration;
- Transparency in tax administration culture and policy;
- Lack of logistic and technical support;
- Capacity and efficiency of tax administration.

Political economy

- Taxpayer"s perception of government actions;
- Political system, institutions, and regime type are important issues;
- Public services are evaluated by cost-benefit of tax payment;
- No taxation without representation" – tax bargaining between state and citizens; forming a social-fiscal contract.

This study argues that a more comprehensive understanding of tax compliance can be gained by integrating all perspectives rather than by extrapolating from a single perspective (Black et al.,1991). However, the economic and tax administrative perspectives seems to be the most relevant to the present research problem.

The reasons for taking economic perspective as the leading intuition is three-fold: first, as Akerlof and Romer (1993) argue, the tendency of profit maximization by large corporations is very high; even large corporations sometimes maximize profits by bankrupting their businesses. One reason for this might be the limited liability of corporate owners and the other is the poor accounting standards coupled with low penalty for law-breaking (Akerlof and Romer, 1993). Akerlof and Romer (1993:2) point out that large corporate behaviours can be better understood by the "the topsy-turvy economics of maximizing current extractable value." Second, Clinard and Yeager (1980) find that large corporations pay little or no

emphasis on corporate social responsibility and engage in bribing officials and violating income tax laws for defrauding tax revenues. On this issue, Hasseldine (2010:11) states that, "There is going concern at large companies" ability to successfully avoid huge amount of taxes. Extremely high-concern is expressed by lobbyists who are agitating for greater corporate social responsibility in the tax area." For the growing significance of the economic approach of tax compliance, Oats and Tuck (2008: 14) note that, "Research regarding tax compliance of large companies tends to adopt an economic rationalist approach and is concerned with developing models that predict the compliance behaviour of large companies." In this connection, it is worthwhile to refer to Slemrod (2004:6) who argues that, although the literature on corporate tax compliance by the non-economists is huge, "much of the modern literature adopts a perspective on corporations that is familiar to economists."

However, corporate profit maximization as selfishness should not be equated with self-interest (Brooks and Dunn, 2009). Slemrod (2004) says that in economics the term "selfishness" does not have the same negative connotations as it usually does. It is the type of individual selfishness that works as the "invisible hand" of the market economy and produces social welfare under certain institutional structures and instruments. The other reason for not limiting the study to a particular perspective is that individual and corporate decision-making are hugely influenced by the broad environment in which they function (Alm et al.,1992a). Investigating large corporations" tax compliance purely from an economic or administrative perspective might exclude important or discerning explanations from the study (McGill, 1988).

Viewing tax compliance from several perspectives requires integration among these. For example, tax audit as a compliance instrument has both economic and tax administrative consequences. Audits are primarily used as a compliance instrument to increase the

likelihood of detection, as argued in the economic school of thought. But how frequently audit action is taken and what criteria will govern it is an administrative matter. Similarly, taxpayer service is provided to increase confidence and reduce the distance between taxpayers and the tax administration, but taxpayer service produces better compliance when taxpayers derive higher utility from the consumption of the service. Further, the issues of the state versus large taxpayer bargaining power on the one hand raise the economic aspects of tax compliance, and on the other remind us of the inability of the political system to handle large corporations, due to corporate ability to relocate businesses globally (Brautigam, 2008; Moore, 2008). Therefore vertical integration of perspectives would provide better measurement of the contribution of tax compliance instruments than horizontal integration.

3.10 Sampling Method and Data Sources

3.10.1 Unit of Analysis

What exactly was to be analysed in this research? The unit of analysis was to measure the tax compliance effects of coercive and persuasive instruments among large corporations dealt with by the LTU, *not* the performance of the LTU as a unit of tax administration. To narrow down the empirical focus of the study, it would look only at the corporate taxpayers of the LTU. Individual taxpayers would remain outside the purview of the study. The population of corporate taxpayers in the LTU of Bangladesh is 275, which includes finance, manufacturing and service sector corporations.

3.10.2 Research Instruments

Both primary and secondary data were to be collected. For primary data, two survey instruments, a questionnaire and interviews, would be used. In the case of quantitative

analysis, a structured questionnaire was favoured; whereas in the case of qualitative research, a semi-structured questionnaire or interviews were to be used.

3.10.2.1 Document Analysis to Measure Tax Compliance

In answering the first research sub-question, as mentioned in section 3.2, and measuring some of the control variables (see section 3.12.1.4), this research would take advantage of rich tax administration and corporate level data collected from the LTU database. Tax office records and documents would produce primary data to provide valuable information on return filing, tax payment, audit adjustment, marginal tax rate and tax appeals. These were real tax office data, which would make this study different from other similar studies. In studying tax compliance in Australia, Tran-Nam et al. (2000:243) state that, "the ability to use the tax authority"s database instead of commercial mailing…represents a significant improvement." The access to the Bangladesh LTU database would provide quality information for this research. Documentary data are important to give meaning to facts, to check response bias, and to cover up a low response rate and improve the validity of the research (Dunsmuir and Williams, 1992). In this research, primary data on return filing and tax payment behaviour would help to measure the reactivity problems of the survey data–the possibility of respondents giving an ethically acceptable reply rather than what they really believed (Bryman, 2004). The sources of data used in this dissertation would be both primary and secondary. The LTU computerized database, corporate tax files, LTU administrative documents, and income tax legal documents such as the income tax ordinance part I and part II, would be sources of primary data; and published opinions in newspaper editorials, reports and trade body pamphlets would be secondary data sources.

3.10.2.2 Survey Questionnaire to Find Important Instruments

To conduct the questionnaire survey, a sampling framework comprised of all LTU corporate taxpayers would be prepared to reduce the chance of mismatched or overlapping samples. A pre-test of the questionnaire would be conducted to avoid ambiguity and weed out weak items (Levy and Lemeshow, 1999). In conducting the pre-test, 10 corporations, at least two from each of the corporate sectors, manufacturing or service, would be taken. Based on the critiques at the pilot stage, the practicality and comprehension of the survey questions would be evaluated and the draft questionnaire would be revised where necessary. This would reduce measurement error. The questions would be mutually exclusive and accept all valid alternative responses, such as „don‟t know‟ and „not applicable‟ in order to reduce bias. Questions would be asked specifically to avoid misinterpretation. In some cases double-barrelled questions might be asked to make an answer multidimensional. Loaded questions would be avoided so as not to create the possibility of introducing personal bias (Schofield, 2006).

3.10.2.3 Elite Interviewing

For in-depth information on the research context and explanations on compliance behaviour, one-to-one personal interviews based on semi-structured questions were to be conducted. In-depth information refers to semi-structured or loosely structured interviewing, which Webb and Webb (quoted in Burgess, 1982:164) state as, "the Method of the Interview, or „conversations with a purpose‟, a unique instrument of the social investigator." Through interview it is possible to clarify and extend the meaning of a respondent‟s observation and to confirm or rule out ways of reasoning (Kvale, 1996). In a tax compliance study like this, as Hasseldine et al. (2007) argue, field interviews enable the researcher to probe attitudes to sanctions and motivational issues, and to understand the research problem well.

Elite interviewing was the particular type of interview technique to be used in this research. A significant strength of elite interviews is that they allow the respondents to elaborate on their attitudes, beliefs and perceptions through an open and flexible discussion (Schofield, 2006). Elites are individuals who are "considered to be influential, prominent, and/or well-informed people in an organisation or community" (Marshall & Rossman, 1999:113). As elite respondents, tax advisers, corporate directors, tax accountants and tax officials would be interviewed. Interviewing tax professionals or people from the corporate world would enable me to understand complicated compliance issues. These people would have the ability to provide better explanations and more insightful answers about why some tough measure might fail and others succeed. In conducting the interviews, Jonson"s (2002:106) wise comment would be followed: "The informant would be a kind of teacher and the interviewer a student, one interested in learning the ropes or gaining member knowledge from a veteran informant."

Interview bias would be quite absent, since there would be one interviewer for this work. Snowball sampling would be used for locating the experts to be interviewed. In the snowball process, as Warren (2002:87) states: "one respondent is located who fulfils the theoretical criteria, then that person helps to locate others through her or his social networks." In selecting the first interviewees, the Chamber of Commerce and Trade, the Bangladesh Tax Lawyers Association and the Association of Chartered Accountants would be consulted. This might provide an idea about which people would be useful sources of information on corporate tax issues.

3.10.3 Data Triangulation

The data for the research would be collected from multiple sources. Table 3.2 provides a complete picture of data sources and data triangulation for each of the dependent, independent and control variables. Survey and interviews would be the central data collection methods for the independent and control variables. For the dependent variable, the LTU database would be the only source.

Table 3.2: Data triangulation chart

Variables	Source 1	Source 2	Source 3
a. Dependent variable			
Filing compliance	Documents		
Reporting compliance	Documents		
Payment compliance	Documents		
Composite compliance	Documents		
b. Independent variables			
Penalty	Survey	Interview	Documents
Imprisonment	Survey	Interview	Documents
Tax audit	Documents	Interview	Documents
Taxpayer service	Survey	Interview	
Simplified tax law	Survey	Interview	
Mutual understanding	Survey	Interview	
c. Control variables			
Corporation size	Survey		Documents
Marginal tax rates	Survey	Interview	Documents
Ownership pattern	Survey	Interview	Documents
Corporate locationality	Survey		Documents
Corporate sector affiliation			Documents
Employee salaries		Interview	Documents
Corporate age			Documents
Type of tax advisor	Survey		Documents

Source: Candidate‟s own table

In many cases, tax office documents such as tax files, tax registers, reports, and correspondence would be used to check the reliability of data collected from other sources. In the case of employee pay, to be used as a control variable, interview and document analysis would be the major sources of data collection. Employee pay data could be found in the audited financial statements of corporations submitted with their tax returns. A request for

information about respondents" income in a mailed questionnaire is highly likely to be unanswered and may increase non-response.

3.11 Sampling Procedure and Sample Size

For the questionnaire survey in this study, a stratified random sampling was to be adopted, where every item of the strata would have an equal chance of being selected. Random sampling is the precondition for generalizing research findings over a population and stratification of the sample preserves all the advantages of random sampling except the disadvantage of a reduced confidence interval (Gorard and Taylor, 2004; De Vaus, 2009). An advantage of stratified sampling is that separate results may be generated for each stratum, which is important for comparative performance. As the sample size increases, the sample distribution approaches normal. Sample size affects the level of precision, the statistical level of confidence and the variability one expects (Lohr, 2010).

Heuristically, a sample size needs to be five to ten times higher than the number of independent variables (Gorard and Taylor, 2004). It is also suggested that for a useful analysis the minimum size of the sample should be 30, and three factors should be considered while determining sample size: margin of error; the confidence or alpha level; and the degree of variability of interest (Tabacnick, and Fidell, 1996). In social science research, the alpha level applied in determining sample size is .05 or .01, with the tradition of using .05 more commonly. And the standard margin of error is 5% for categorical data (Lohr, 2010). Israel (2009) suggests using the following formula to determine the sample size for a given population.

$n = N/ [1+N (e)^2]$

where

n= sample size
N= population
e = alpha level

Using the above formula, the sample size derived for the study is:

n = 275/ [(1+275(.05)^2] = 162

From the above calculation, the sample size for the study is 162. This calculation of sample size is also corroborated by the sample size estimation formula by Lohr (2010). On the basis of corporate sector characteristics, the large corporate taxpayers in the proposed research would be divided into three groups: finance, manufacturing and service. Of a total of 275 large corporations, 147 belonged to the finance sector, for example, banks, insurance, and leasing corporations. Of the remainder, 76 corporations belonged to the manufacturing sector, including cement, pharmaceuticals, and textiles; and 52 belonged to the service sector. Of the 162 sample, proportionately, a total of (147x162/275) = 87 would be taken from the finance sector, (76x162/275) = 44 from manufacturing sector, and (52x162/275) = 31 from service sector. In selecting the sample, standard random sampling tables would be used.

For qualitative data, this research planned to conduct a total of 30 interviews, ten from each of the elite group: large corporations, tax officials and tax professionals. However, in snowball interviewing it is difficult to decide the number of respondents in advance. Moreover, as with a survey questionnaire, there is no standard sampling technique to be used for interview respondents. In interviewing these two opposite groups of people, a sequence would be maintained so that the answers of one group of respondents could be investigated against those of the other group.

3.12 Data Analysis and Interpretation

Data analysis refers to the systematic processing, searching and arrangement of data to elicit the meanings that lie behind its surface content (Onyebuchi, 2007). Denscumbe (2007:243)

mentions that the purpose of data analysis is "to probe the data in a way that helps to identify the crucial components ... to explain the nature of the things being studied with the aim of arriving at some general conclusion." Data interpretation, on the other hand, is the generation of ideas from the analysed data and the relating of them to the relevant literature and broader concepts (Bogdan and Biklen, 1998). Since data can be either in numbers or in words, they can be analysed quantitatively or qualitatively (Tashakkhori and Teddlie, 2003). As explained in section 3.7, this study would conduct both quantitative and qualitative data analysis. The quantitative analysis would include descriptive and inferential statistics. Descriptive statistics would organize, analyse and present survey data through numerical and tabular techniques (Argyrous, 2011; Bryman, 2004). Uni-variate and multivariate techniques would tease out the important features of the data set and its distribution. The answer to the first research sub-question (see section 3.4.1) would be made through descriptive statistics that includes frequency, ratio, average and standard deviation.

In finding an answer to the second and third research sub-questions (see sections 3.4.2 and 3.4.3), inferential statistics would be needed to ensure that randomized samples accurately represented the population, and sampling errors did not distort the relationship between the dependent and independent variables (Heiman, 2010). Two important aspects of the inferential procedure are the design and the scale of measurement of the dependent variable (Heiman, 2010). This research was to be based on a cross-sectional design with the dependent variable being measured nominally by binary responses and therefore requiring a non-parametric inferential procedure. It would use logistic regression as the base model to establish the relationship between the variables. Later, the robustness of the relationships would be checked by advanced data mining (e.g., CHAID) and multi-level logistic models. However, the limitation of regression-based analysis is that it does not shed light on the

causal chain underlying the relationship between the variables (Kittel, 2006). Therefore, qualitative data would be analysed by the interpretative approach.

3.12.1 Quantitative Analysis

The quantitative analysis for this research would begin with descriptive statistics, specifically frequencies and cross-tabulations. Frequencies would mainly be used to measure tax compliance with respect to the major demographic characters of large corporations. Cross-tabulations would include chi-square tests to assess the extent to which the survey could measure the variables and correlation, in order to make a preliminary assessment of the co-variation, association or degree of relationships between the variables (Chou, 1975; Simpson and Kafka, 1971). The next requirement would be to see how much impact the independent variables had on the dependent variable, or to estimate the magnitude of the effect of the independent variables on the dependent variable, by running regression analysis (De Vaus, 2009). Regression analysis is of two kinds: simple (one dependent and one independent variable) or multiple (single dependent and one or more independent variables). Multiple regressions have a better or more complete name – *ordinary least squares multiple linear regressions*, or simply OLS regressions (Allison, 1999).

OLS regression models might have been the best option to study the impact of the independent variables on the dependent variable. But such models run into problems in maintaining two of their basic assumptions when the dependent variable is dichotomous, as it is in the present study: a) *homoscedasticity* – the variance of the random disturbance term – is equal for all observations; and b) the random disturbances are normally distributed (Allison, 1999). Allison states that because the dichotomous variable can have only two values – one or zero – the disturbance term too can have only two values, and therefore it is impossible for it to have a normal distribution. Again, the variance of the disturbance terms must be

different for different observations when it varies as a function of the independent variable. For these reasons, this research would adopt a logistic regression analysis, or logit analysis, to estimate the magnitude of effects between the variables.

To analyse the data, logistic regression would be conducted by the enter method, which allows simultaneous entry of all independent variables into the model and then individually analyses the influence of each independent variable on the dependent variable (Andrew et al., 2011). In other words, under this method an independent variable is entered into the model as if it were entered after all other variables, and its contribution to the model is evaluated in terms of what it adds to or detracts from the model (Tabachnik and Fidell, 1996). Enter as a regression method is important to maximize the predictive power of the regression equation.

Other possible methods were stepwise regression and the hierarchical method. Stepwise regression is used for large sets of independent variables; and the hierarchical method is used when the researcher knows from past experience or believes that one set of independent variables is more important than the other set of variables (Andrew et al., 2011; Bajpai, 2011). As regards the stepwise method, Rawlings et al. (1998) warn that it should not be used blindly without thoroughly checking any deficiencies and validating the regression outputs against an independent data set.

3.12.1.1 The Logit Model

To understand logistic regression models, it is important to understand *odds* and *odds ratio,* a better scale for comparison of the relationship between two dichotomous variables. The odds of an event is the ratio of the expected number of times that an event will occur to the expected number of times that it will not occur. Odds of four means four times as many occurrences as non-occurrences. Odds ratio is the ratio of the odds of a proposition or event

occurring in one group to the odds of it occurring in another group. Odds can be translated into probability values by the following simple formula (Hair et al., 2006):

O= (p/ 1-p) = probability of event/ probability of no event

P=O/1+O

In logit models, the estimated coefficients of the independent variables can be interpreted using either the logit value or the odds value as shown here:

$Logit_i = ln\ [prob_{event}/1\text{-}prob_{event}] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_n X_n$ .... *(Equation 3.1)*

$Odds_i = ln\ [prob_{event}/1\text{-}prob_{event}] = e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_n X_n}$ .... *(Equation 3.2)*

The two formulations are equivalent, with the only difference being in how the coefficients are interpreted. The left hand side of the equation – the one before the equal sign – is called logit and it is the log of the odds of an event occurring. β_0, β_1, β_2 and β_n are the coefficients for the respective variables X_1, X_2 and X_n. The coefficients measure the change in the ratio of the probabilities. In the first model (e.g., equation 3.1), the logistic coefficients are expressed in logarithms, and so are difficult to interpret. In the second model (e.g., equation 3.2), the coefficients are expressed in exponentiated logistic coefficients (i.e., the antilog of the original logistic coefficients), and therefore are easy to understand. The value *e* is the exponential constant, approximately equal to 2.71818, and its defining property is log $(e^x) = x$.

Logistic regression has some important advantages over OLS regression. The independent variables can be quantitative or categorical or mixed (Kleinbaum and Klein, 2010). It does not have disturbance terms, and can measure independent variables without error. However, this does not mean that logistic regressions are deterministic rather than probabilistic. Another advantage is that independent variables do not require a normal distribution and a linear functional relationship. Logistic regressions use the maximum likelihood procedure,

which instead of minimizing the least squares, as in OLS regressions, maximizes the likelihood that an event will occur (Hair et al., 2006). It follows that logistic regressions require the following assumptions: that there is no multicollinearity; that there is no specification error (i.e., important independent variables are included and unimportant ones are excluded); and that the independent variables are measured at summative response scale, interval or ratio level (Meyers et al., 2006).

3.12.1.2 Model Specification and Measurement of Variables

In our econometric model, compliance would be modelled as a function of the selected coercive and persuasive instruments. This research would divide tax compliance into three components: filing, reporting and payment, and these would be summed to find the overall compliance performance. In total, therefore, four logit models would have to be run: the first equation would model the impact of the independent variables on filing compliance; the second equation on reporting compliance; the third equation on payment compliance; and the fourth one on overall compliance. Thus the four models would be as follows:

a) **Filing Compliance Equation**

$$ln(prob_{FilCom}/1\text{-}prob_{FilCom}) = \beta_0 + \beta_1 TaxPen + \beta_2 TaxAud + \beta_3 Imprison + \beta_4 TaxServ + \\ \beta_5 TaxLawSimp + \beta_6 MutUnd + \beta_7 CorSiz + \beta_8 CorOwn + \\ \beta_9 Corloc + \beta_{10} CorpSect + \beta_{11} MarTaxRate + \beta_{12} EmpSal + \\ \beta_{13} CorAge + \beta_{14} TaxAdv$$

(Equation 3.3)

b) Reporting Compliance Equation

$$ln(prob_{RepCom}/1\text{-}prob_{RepCom}) = \beta_0 + \beta_1 TaxPen + \beta_2 TaxAud + \beta_3 Imprison + \beta_4 TaxServ + \\ \beta_5 TaxLawSimp + \beta_6 MutUnd + \beta_7 CorSiz + \beta_8 CorOwn + \\ \beta_9 Corloc + \beta_{10} CorpSect + \beta_{11} MarTaxRate + \beta_{12} EmpSal + \\ \beta_{13} CorAge + \beta_{14} TaxAdv$$

(Equation 3.4)

c) Payment Compliance Equation

$$ln(prob_{PayCom}/1\text{-}prob_{PayCom}) = \beta_0+\beta_1 TaxPen+\beta_2 TaxAud+ \beta_3 Imprison + \beta_4 TaxServ+$$
$$\beta_5 TaxLawSimp + \beta_6 MutUnd+ \beta_7 CorSiz + \beta_8 CorOwn+$$
$$\beta_9 Corloc + \beta_{10} CorpSect +\beta_{11} MarTaxRate + \beta_{12} EmpSal+$$
$$\beta_{13} CorAge+\beta_{14} TaxAdv$$

(Equation 3.5)

d) Overall Compliance Equation

$$ln(prob_{OvlCom}/1\text{-}prob_{OvlCom}) = \beta_0+\beta_1 TaxPen+\beta_2 TaxAud+ \beta_3 Imprison + \beta_4 TaxServ+$$
$$\beta_5 TaxLawSimp + \beta_6 MutUnd+ \beta_7 CorSiz + \beta_8 CorOwn+$$
$$\beta_9 Corloc + \beta_{10} CorpSect +\beta_{11} MarTaxRate + \beta_{12} EmpSal+$$
$$\beta_{13} CorAge+\beta_{14} TaxAdv$$

(Equation 3.6)

Where:

$Prob_{FilCom}$	-probability of filing compliance(For Equation 3.3)
$Prob_{RepCom}$	-probability of reporting compliance(For Equation 3.4)
$Prob_{PayCom}$	-probability of payment compliance(For Equation 3.5)
$Prob_{OvlCom}$	- probability of overall compliance(For Equation 3.6)

Where for all equations:

TaxPen	- Usefulness of tax penalty
TaxAud	- Tax audit adjustments
Imprison	- Effectiveness of imprisonment
TaxServ	- Quality of taxpayer service
TaxLawSimp	- Whether the tax law is simple
MutUnd	- Whether mutual understanding is good
CorSiz	- Total assets of the large corporation
CorOwn	- Ownership pattern
Corloc	- Locational identity - local or multinational
CorpSect	- Sector affiliation - finance, manufacturing or service
MarTaxRate	-Corporate marginal tax rate
EmpSal	- Salaries paid to employees
CorAge	- Age of incorporation
TaxAdv	- Nature of tax advisor appointed

In the above equations, the left hand column measures the log of the odds for each of the models. The independent and control variables for all the models are the same. The variables and the notations are defined as follows.

3.12.1.3 Dependent and Independent Variables

The dependent variable for regression and other statistical analysis was to be tax compliance, which would be measured as a dichotomous variable. A variable is dichotomous when it can have only two possible values. Examples of dichotomous variables include gender, pregnancy, employment status – that is one is male or female, pregnant or not pregnant, employed or not employed (Nachmias and Guerrero, 2011). In the current research, tax compliance was dichotomous because a large corporate taxpayer is either compliant or non-compliant. In equation 1, filing compliance is the dependent variable and the selected six instruments are the independent variables. In equation 2, reporting compliance, and in equation 3, payment compliance, are the dependent variables. Equation 4 takes overall compliance as the dependent variable. In all cases, the selected coercive and persuasive instruments are the independent variables. These variables are measured in the following way as shown in Table 3.3.

Table 3.3: Measurement of dependent (outcome) and independent (predictor) variables

Variables	Symbols	Descriptions	Variable type
Dependent variables			
Filing compliance	FilCom	Actual filing date (AFD) compared with statutory filing date (SFD). AFD occurring before SFD is considered filing compliance and AFD occurring after SFD is filing non-compliance.	Nominal
Reporting compliance	RepCom	Reported Income (RI) compared with audited income (AI) adjusted with appeal effects. RI equal to AI is treated as reporting compliance and RI less than AI is treated as non-compliance.	Nominal
Payment compliance	PayCom	Actual tax payment (ATP) is compared with statutory tax payment (STP). ATP higher or equal to STP leads to payment compliance and ATP less than STP is payment non-compliance.	Nominal
Overall compliance	OvlCom	Compliant in all three components; meaning AFD occurring before SFD, RI equal to AI, and ATP higher or equal to STP.	Nominal
Independent variables			
Tax penalty	TaxPen	Measuring the usefulness of penalties for non-compliance based on respondent"s stated preference on a five-point Likert scale of 1-	Ordinal

		Strongly Agree, 2 -Agree, 3 -Undecided, 4 - Disagree and 5 -Strongly Disagree.	
Tax audit	TaxAud	Audit adjustments made by tax audit action in the LTU are common log transformed to smooth out the possibility of distribution having very low and very high audit demand	Continuous
Imprisonment	Imprison	Measuring the effectiveness of imprisonment based on respondent"s stated preference on a five-point Liker scale of 1 - Strongly Agree, 2- Agree, 3-Undecided, 4-Disagree and 5-Strongly Disagree.	Ordinal
Taxpayer service	TaxServ	Measuring the quality of taxpayer service based on respondent"s stated preference on a five-point Likert scale of 1 - Very Good, 2 - Good, 3 - Fair, 4 - Poor and 5 - Very Poor.	Ordinal
Simplified tax law	TaxLawSimp	Measuring whether tax law is simple based on respondent"s stated preference on a five-point Likert scale of 1 - Strongly Agree, 2 - Agree, 3 - Undecided, 4 - Disagree and 5- Strongly Disagree.	Ordinal
Mutual understanding	MutUnd	Measuring how good is mutual understanding between the corporations and the LTU authority on a five-point Likert scale of 1 - Very Good, 2 - Good, 3 - Fair, 4 - Poor and 5 -Very Poor.	Ordinal

Source: Candidate"s own table

To explain the dichotomous dependent variable, usually a suitable cumulative distribution function (CDF) is used (Christensen, 1997). The logit models use cumulative logistic functions where the probability of the random variable is no larger than a given value when the total order is defined. This, however, is not the only probability distribution function. There may be a normal probability distribution function describing a random variable as an approximation that tends to cluster around a single mean. In some cases, normal cumulative functions are found to be the most useful. The estimating model that uses a normal CDF is known as the probit model, and this could have been an alternative to the logit model. Practically, there is little difference between the logit and the probit models, because they produce similar results. UCLA (2007:1) states that, "In logistic regression…the transformation is the logit function which is the natural log of the odds… in probit models the function used is the inverse of the standard normal cumulative distribution …in reality, this difference isn't too important: both transformations are equally good at linearizing the model; which one you use is a matter of personal preference." However, the estimates of parameters

of the two models are not directly comparable (Demaris, 2004; Shariff et al., 2009). For this research, therefore, probit analysis would not be required.

3.12.1.4 Control Variables

The expression control variable refers to a possible independent variable other than the variable of interest that is held constant in statistical models (Kantowitz et al., 2009). According to Brym and Lie (2007: 661), "A control variable is a variable whose influence is removed from the association between an independent and a dependent variable." We control variables because there is always a possibility that the relationship between the dependent and the independent variable is explained away by other variables, called extraneous variables (Rubin and Babbie, 2010; Porta, 2008). For example, tax advisors might influence the relationship between filing compliance and penalty. When the role of tax advisor is considered by putting it in the statistical model, it is no longer an extraneous variable, but a control variable. Healey (2009:409) states that, "Control variables come from the theory underlying the research project and from creative and imaginative thinking and planning during the early phases of the project."

Following a review of the relevant literature, eight control variables were chosen for inclusion because they were thought to have an influence on tax compliance (see Table 3.4). These included corporate demographic factors – size, ownership pattern, locationality, corporate sector and incorporation age. Also included were marginal tax rate, employee salaries and type of tax adviser appointed. The demographic features would be used as control variables because compliance behaviour might be affected by the age of incorporation, ownership pattern and similar factors. There were enough theoretical and empirical reasons why the marginal tax rate imposed, or the salaries paid to tax administration employees, might impact on the study findings. Similarly, whether tax advisors were hired on a

temporary contract or appointed full time might affect tax compliance. Theoretical arguments regarding this are presented in Appendix A. The control variables were measured from tax office records in the following way.

Table 3.4: Measurement of control variables

Control variables	Symbol	Description	Variable type [8]
Corporate size	CorSiz	Measured on the basis of corporate total assets, and common log transformed to smooth out the possibility of distribution having low and high assets	Continuous
Corporate ownership	CorOwn	Defined on the basis whether the shares of the corporation are traded in the stock market.	Nominal
Corporate locationality	Corloc	Decided on the basis of foreign equity finance in the corporation. 25% or more foreign equity is treated as multinational and all other as local.	Nominal
Corporate sector affiliation	CorSect	Decided on the basis of goods and services produced by the corporations. The categories are: finance, manufacturing and service.	Nominal
Marginal tax rate	MarTaxRate	Actual corporate marginal tax rates imposed. Three different rates are 27.5%, 37.5% and 45%.	Ordinal
Employee salaries	EmpSal	Measured on the basis of total salary paid to the staff divided by staff number. To normalize the distribution, figures are natural log transformed.	Continuous
Corporate age	CorAge	Considers how long the corporation has been running the business and counted by the period of time from the date of business incorporation to current date. Three age groups are: 7-10 years old, 11-14 years old and 15 years or more.	Nominal

---

[8]A variable is continuous if it can take different values at different times, for example income or age. A variable is nominal when it refers to a classification or category of individual items without any rank order among them, for example, gender or religious identity. A variable is ordinal when the nominal categorization holds a meaningful sequence. A continuous variable is a quantitative variable, whereas nominal and ordinal variables are qualitative variables.

Type of tax adviser appointed	TaxAdv	Looks at how the corporate tax compliance issues are resolved. Three major categories are: in-house tax department; temporary contract tax professional; both-in house and temporary contract professionals.	Nominal

Source: Candidate"s own table

3.12.2 Scaling Techniques: The Stated Versus the Revealed Preference Methods

This research would employ Likert-type scaling in measuring respondent attitudes to variables. Three common scales used for measuring attitudes are: differential scales, cumulative scales, and summative scales (Bordens and Abbott, 1991). The Likert scale is a summative scale that adds up the scores of items to measure the variables, and therefore is easy to understand and construct. The other scales, cumulative and differential, are hard to construct and often inefficient because of a higher probability of response error. Likert-type scaling is more useful because the social world is a multi-dimensional one where a summative scale fits better than cumulative or the differential scales, which seek to study the uni-dimensionality of the problem (Hoyle et al., 2001). In scaling, a common issue is how many categories are desirable to reflect the respondents" attitudes. It is argued that for better reliability and validity, the number of categories can go from a minimum 5 up to 10, depending on the type of the variable to be measured (Sullivan, 2001). This research would use a five-point scale and the categories would be regarded as forming an ordinal scale.

In any scaling technique, the respondent"s attitudes or opinions are drawn out by the direct asking of hypothetical questions or by looking at their real, expressed behaviour. The former is called "the stated preference method" and the latter is called "the revealed preference method." The Likert scale, as a scaling technique, is based on the stated preference method,

which has its benefits and limitations just like the revealed preference method. It is important to bear in mind these benefits and limitations while reading the analytical framework.

Stated preference methods employ hypothetical data to predict the *ex-ante* impact of an action or policy change using contingent valuation and conjoint analysis (including logistic regression) techniques (Whitehead et al., 2007). Questions are asked about a particular concept (e.g., about the probable impact of specific tax compliance instrument in this case) over a range of fixed alternatives (Louviere et al., 2000) and the respondents freely state their opinions and attitudes about the concepts (Mitchell and Carson, 1989; Bateman et al., 2003).While asking a question, a hypothetical situation and problem are posed to the respondents. Respondents are presented with multiple scenarios and are requested to choose among them.

The strong point of stated preference approaches is their flexibility, and they can be used to create practical policy scenarios for the most novel policies. Hypothetical questioning is, most often, the only way to gain information from respondents about policies and concepts, and to measure the non-use value of these. Another advantage is that preference indicators can be ranked or rated to reflect the choice. The major flaw of stated preference methods is their imaginary or hypothetical scenario. It may be difficult to gain information when respondents are faced with unknown imaginary situations. In such cases, respondents may give unhelpful, meaningless answers to the questions.

Revealed preference approaches, on the other hand, depend on *ex-post* data to measure a policy or a concept (Andreoni et al., 2011). For example, the traveller"s decision to visit a new tourist spot can be measured in terms of the price he or she paid to enjoy the spot in comparison to other spots (Whitehead et al., 2007). The strength of this approach is that it is dependent on real information. The approach employs real cost-benefit data relating to a

choice made rather than being based on hypothetical cost-benefit data, as in the stated preference approach. Choices made on real costs and benefits, or on practical information, reveal a real preference for some action, and therefore the measurement becomes objective. This approach is used in measuring the consistency of consumers" choices in studying consumer behaviour, for example in measuring the demand for goods. The main limitation of the method is that it only counts historical data and past experience. Often, new policy instruments or products need to be measured, and in such cases this method suffers from measurement error, particularly in the case of measuring intangibles.

3.12.3 Measuring the Impact of Corporate Context: CHAID and Multilevel Models

As discussed in section 3.4.2, logistic regression would identify the statistically significant instruments for tax compliance. It does not, however, throw any light on the effect of context variables on the dependent-independent-variable relationship, which is important to answer research sub-questions 2 and 3 to be presented in chapter 6. Context variables are the unique research characteristics that may have an influence on the outcome variable (Aykin, 2009; Ingrassia et al., 2011). Three corporate demographic features were suitable to be taken as the context variables for this study: corporate sector affiliation, corporate location and corporate ownership. Based on respondent interviews, logistic regression outputs and the pattern of the LTU dataset, this research would select the appropriate context variable (see sections 5.5.5 and 6.3.2). In the Deloitte analysis of large corporate risk profiles, the sector characteristics of the corporations, their location and structure, were considered as important contextual factors (see section 2.10.4). Hanlon et al. (2005) also argue that if there are particular characteristics

that may facilitate abusive tax practices, for example, corporate intangibles[9], these need to be modelled in the equation.

3.12.3.1 The CHAID Model

With this purpose in mind, CHAID (Chi-squared automatic interaction detection) models would be run first, so as to provide "a cross-over analysis... to correlate themes emerging from a qualitative analysis with quantitative variables", as argued by Onwuegbuzie and Collins (2010:297). CHAID is an algorithm assuming that dependent and independent variables can be segmented into different layers and the most significantly related segments can be identified (Kass, 1980; Pietersen and Daminaov, 1998; Lowe and Hughes, 2002). For its data mining structures, CHAID is eminently good for interpreting logistic regression and producing multi-level splits as graphical tree outputs (Ratner, 2003). CHAID is considered appropriate when the dependent variable is dichotomous and the independent variables are ordinal and/or nominal, as in the proposed study.

The essential characteristics of the CHAID algorithm are merging, splitting and stopping. For each independent variable X, it merges those categories that are non-significant and maintains the ones that are significant, called child nodes (Chen, 2009). In the splitting stage, the best predictor for each of the final categories or child nodes is selected. The splitting process stops when the best predictor for each of the child nodes is found. In the case of dichotomous and other non-metric variables, a chi-square test is suggested for merging and splitting, whereas in case of metric variables, F statistics are used (Schmidt and Hollensen, 2006; Diepen and Franses, 2006). Chi-square tests are used in the case of discontinuous data involving mutually exclusive categories (e.g., tax compliant and non-compliant) and allow

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[9]Corporate intangibles refer to any gain that accrues to the shareholders through a lower effective tax rate. Such gains get eroded when competitors in the same sector enjoy similar benefits (Hanlon et al., 2005).

testing of whether the categories are significantly different, although drawn from the same populations (Field, 2010). They also allow comparison of the observed frequencies with the theoretical frequencies derived from a particular hypothesis. The general formula for chi-square is:

$$\chi^2 = \Sigma \left[(f_o\text{-}f_e)^2 / f_e \right] \qquad\qquad (Equation\ 3.7)$$

Where,

f_o= *observed frequency*
f_e= *expected or theoretical frequency*
For a 2 x 2 table, an alternative formula may be
$\chi^2 = N\ (ad\text{-}\ bc)^2 / (a+b)\ (c+d)\ (a+c)\ (b+d)$

In the performance of chi-square tests, as above, the fragmentation process will continue until no more significant relationships are found between the dependent and the independent variables (Eherler and Lehmann, 2007). The segmentation process and the results of CHAID for tax compliant and non-compliant groups can be illustrated by the following diagram:

Figure 3.2: Data segmentation in CHAID based tree diagram

Y

```
                          ┌─────────────┐
                          │  n_y=1      │
                          │  n_y =2     │
                          │  n_y=3      │
                          └─────────────┘
                                X_1
        ┌───────────────────────┼───────────────────────┐
        1                       2                        3
┌─────────────────┐    ┌─────────────────┐    ┌─────────────────┐
│ n_y =1, x_1=1   │    │ n_y=1,  x_1=2   │    │ n_y=1,  x_1=3   │
│ n_y=2,  x_1=1   │    │ n_y=2,  x_1=2   │    │ n_y=2,  x_1=3   │
│ n_y=3, x_1=1    │    │ n_y=3, x_1=2    │    │ n_y=3, x_1=3    │
└─────────────────┘    └─────────────────┘    └─────────────────┘
        X_2                                            X_3
   ┌────┴────┐                            ┌──────────────┴──────┐
   1         2                            1                     2
```

$$n_y=1, x_1=1, x_2=1$$
$$n_y=2, x_1=1, x_2=1$$
$$n_y=3, x_1=1, x_2=1$$

$$n_y=1, x_1=1, x_2=2$$
$$n_y=2, x_1=1, x_2=2$$
$$n_y=3, x_1=1, x_2=2$$

$$n_y=1, x_1=2, x_3=1$$
$$n_y=2, x_1=2, x_3=1$$
$$n_y=3, x_1=2, x_3=1$$

$$n_y=1, x_1=2, x_3=2$$
$$n_y=2, x_1=2, x_3=2$$
$$n_y=3, x_1=2, x_3=2$$
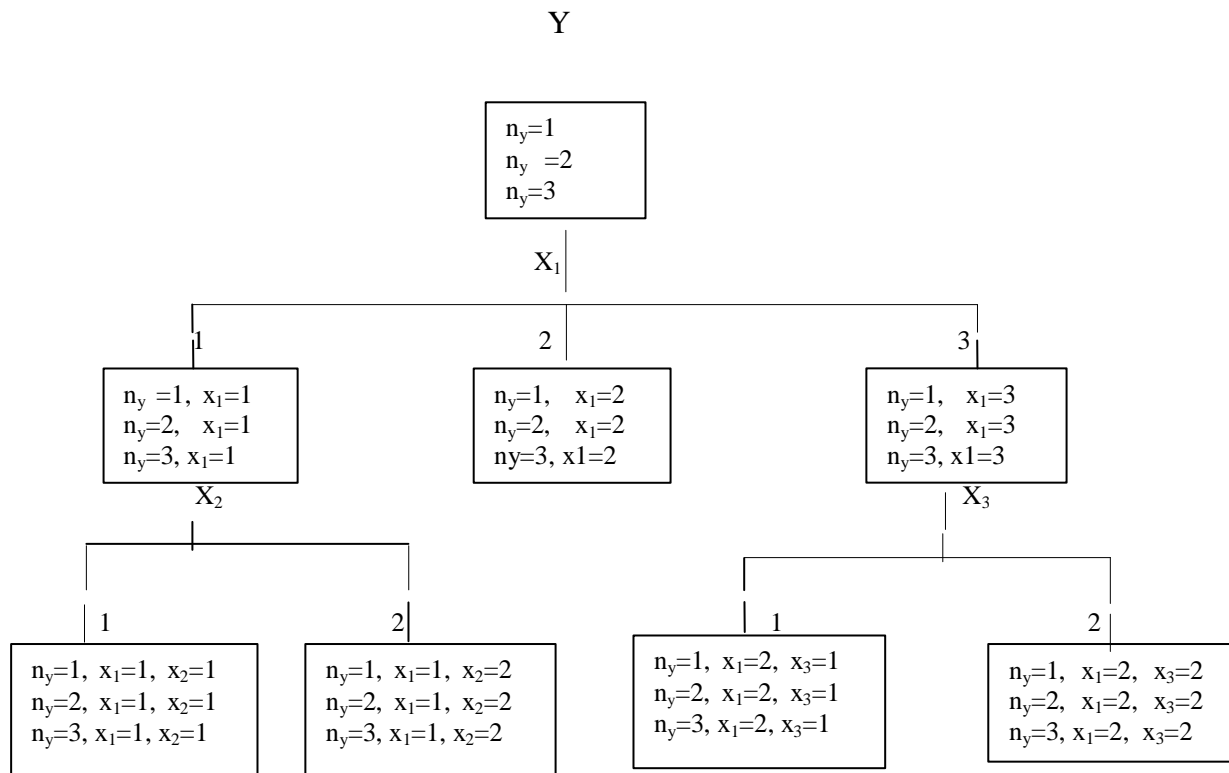
Source: Adapted from Eherler and Lehmann, 2007.

The nodes in the diagram as in Figure 3.2 signify sample sub categories. The core node includes the entire sample and the complete frequencies n_i for each category of Y. At the next stage of the diagram, the sample is segmented by the best predictor, X_1, of the outcome variable. The child notes under the best predictor represent the categories of the predictors and show the frequencies of the outcome variable related to that particular category. The sample can be further segmented by the other predictors, X_2 and X_3. The segmentation continues until the best predictor for each of the child nodes is found.

3.12.3.2 Multilevel Logistic Regression (xtlogit): Fixed and Random Effects

An important aspect of the analysis that still remains unexplored is the proportion of variation in the coefficients that is explainable by the context variable. Whether the character or content of an item exerts any influence on the target variable can be studied by several models, for instance item theory analysis, structural equation modelling and multilevel models (Balluerka et al., 2010). This study specifically focuses on multilevel models (Raudenbush, 1993; Goldsten, 1987; Snijders and Bosker, 1999; StataCorp; 2011) for two reasons: first, multi-level models can combine the results obtained from logistic regressions and compare them with one another to explain the observed variations in the coefficients. Second, the hierarchical nature of the data – for example the large corporate taxpayers are embedded into different corporate sectors – and its influence on the target variable can be studied. Multi-level modelling, unlike OLS regression, assumes that the observations we make are not independent of each other but rather that observations are dependent or nested into one another (Kreft and Leeuw, 1998). The multilevel model for dichotomous dependent variable can also be called hierarchical logit model, xtlogit model or multilevel logistic regression. Therefore, this study used these terms interchangeably.

The form of the model depends on the number of levels or tiers in the data, and it can take a minimum of two levels to a maximum of six levels (Luke, 2005). This study opted for two levels: the level-1 model would take large corporate taxpayers (subject level) as the unit of analysis; and the level-2 model would take corporate characteristics (item levels) as the unit of analysis. Therefore the level-1 models would be the logistic regression models and the level-2 models would be the ones treating the coefficients of the logistic regressions as random variables, whose variations would be explained by the context variable. The variations would be estimated in two parts: one part covering the slope of the overall model –

called the *fixed effects* – and the other part covering the slope variance that is the divergence of each group from the overall slope – called the *random effects* (Stata Corp, 2011; Hamilton, 2008; Field, 2010).

To explain the multilevel model, the standard logistic regression model would be taken as the baseline approach, and this would assume the intercept, β_0, and the slopes or coefficients, β_1, as fixed. In multilevel models, the assumption of regression models that intercepts and coefficients are fixed is challenged, and it is argued that intercepts and coefficients can be random and may change and therefore the logit model needs to be amended in the following way:

$$Logit\ (p/\ p\text{-}1) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n \qquad (Equation\ 3.8)$$

Amending the standard logistic model with fixed and random effects (Hedeker, 2008), the model yields:

$$Logit\ (p_{ij}/\ p_{ij}\text{-}1) = (\beta_0 + u_{0j}) + (\beta_1 + u_{1j})X_1 + (\beta_2 + u_{2j})X_2 + \cdots + (\beta_n + u_{nj})X_n$$

(Combined model- Equation 3.9)

Multilevel logistic models typically include a systematic component and a random error that is independent of subjects and cluster (Congdon, 2006), because random variables are selected from probability distributions (Kreft and Leeuew, 1998). Thus the model becomes:

$$Logit\ (p_{ij}/\ p_{ij}\text{-}1) = (\beta_0 + u_{0j}) + (\beta_1 + u_{1j})X_1 + (\beta_2 + u_{2j})X_2 + \cdots + (\beta_n + u_{nj})X_n + \varepsilon ij$$

(Equation 3.10)

In the literature of multilevel models, the combined model (equation 3.9) above can be described by the following equations (Guo and Zhao, 2000; Cho, 2003).

$$Logit\ (p_{ij}/\ p_{ij}\text{-}1) = \beta_{0j} + \beta_1 x_{ij} \qquad (level\ 1\ model) \qquad (Equation\ 3.11)$$

$$\beta_{0j} = \beta_0 + u_{oj} \qquad\qquad (level\ 2\ model) \qquad (Equation\ 3.12)$$

The intercept has changed from a fixed β_0 to a random β_{0j}, and the slope has changed from a fixed β_1 to β_{1j}, which can be shown in separate equations:

$\beta_{0j} = \beta_0 + u_{0j}$, where u_{0j} is normally distributed $(0, \sigma u_0^2)$ *(Equation 3.13)*

$\beta_{1j} = \beta_1 + u_{1j}$ *(Equation 3.14)*

The js in both equations reflect variations in the intercept and the slopes, where β_0 and β_1 imply the mean of the intercept and the slopes, therefore u_{0j} and u_{1j} are the variance parameters (Mourouga, 2004). Also, β_0 and β_1 measure the fixed and u_{0j} and u_{1j} the random effects of the model. In running the model, *Stata xt* procedures, such as xtlogit models, are applied (Xie and Powers, 2008; Menard, 2009). In *Stata 11.00* the *xt* commands are documented in the cross-sectional time-series manual, which offers tools for analysing cross-sectional one off datasets (Stata Corp, 2011; Mourouga, 2004)**.** In deciding the panel or group variable for the xtlogit model, an analysis of other contending panels, for example, corporate ownership patterns and corporate local and national identity, would be checked, in addition to the review of interview transcripts (see section 6.6.1).

In the case of dichotomous dependent variables, the estimation of between-group variance is similar to the estimation of chi-square tests (see 3.14.2.1) and the estimation of within-group variance is a function of the group mean (Snijders and Bosker, 1999; Leeuw and Meijer, 2008). These suggest that in multilevel models, sector level aggregate measurements, for example the mean filing compliance of a particular sector should be treated as the outcome variable.

3.12.4 Qualitative Evidence: Interpretative Approach

A strong approach to data analysis is to explain the meaning of quantitative results on the basis of qualitative data. This research would conduct semi-structured interviews among elite

respondents from large corporations and from the tax administration. In analysing the massive interview data, and to give meaning to the respondents" observations, an interpretational approach, also called interpretivisim, would be followed. This approach focuses not only on the individual, but also on the *unique individual context* to explain and predict human experiences (Holloway, 1997; Heeks, 2001). It argues that numerical measurements are probabilistic and produce the analysed data mechanically, whereas qualitative measurement of data concerns itself with an interpretative understanding of human actions. In defining interpretivisim, Holloway (1997: 93) states that, "the experiences of peoples are essentially context-bound and not free from time, location or the mind of the human actor." Interpretivisim emphasizes the researcher"s understanding and the marrying of the social construction of the organization with individual behaviours (Capper, 1993). The researcher does not enter into the social setting with an *a priori* construct; rather, he or she develops concepts through natural interaction with respondents. The researcher in this way earns *reflexivity* that allows him/her to place in the research context as the main research tool. This makes the interpretivist approach a naturalistic inquiry that minimizes the researchers" manipulation of the study setting (Decorp, 2006; Lincoln and Guba, 1985; Patton, 1990).

The rationale for using an interpretivist approach in this study was that it would involve discussions with those participants who were directly involved in the research context and were able to influence their immediate surroundings. By using this approach, it would be possible to investigate the tax compliance process from the perspective of the parties who were involved in tax compliance generation. It would also generate empirical data and novel insights into the broader socio-politico-tax administrative aspects of the tax compliance process.

To describe the phenomenon under study, the interpretational analysis proceeds through establishing constructs, themes and patterns. According to Gall et al. (1996, quoted in Onyebuchi, 2007) the analytical process of this approach has five steps: (a) segmenting the database; (b) developing categories; (c) coding segments; (d) grouping category segments; and (d) drawing conclusions. There is an argument in this approach that data analysis should start from the field when the first interview is completed or the first document read. This helps to generate a possible list of coding categories, regularities and patterns (Richie and Lewis, 2003). Interview patterns and regularities are further processed through a creative logical approach based on intelligence, judgement and theoretical bases to make the data meaningful and explanatory (Creswell, 1998; Weston et al., 2001).

To develop interview themes and patterns for this research, first a model reflecting respondents" experience of tax compliance would be developed that would provide a pre-structure for coding. Coding, as Merriam (1998) defines it, consists of short designations – in the form of words, letters, numbers, or any combination of these – assigned to the various features of the data. To ensure that the coding represented the research questions and remained free from the researcher"s personal biases, an iterative process would be followed (Weston et al., 2001; Mason, 2000).

From the coded data, a matrix (Glesne and Pushkin, 1992) would be designed to show how instrument patterns were linked with compliance performance. By creating patterns and themes from interviews, interpretivisim seeks to explain textual narratives and to make sense of them (Victor, 2007; Bevir, 2005; Corvellec, 2006; Mason, 2000). This research would gather data from tax office records, reports, income tax laws and other relevant laws, besides interviewing respondents. Therefore, explaining the text narratives would be another contribution of the interpretive analysis approach. Text narratives would be classified into

three categories: *what, how and why*. The "what" narratives would contain the events, location or proper substance of tax compliance and the determinants needed to lay the story or the basic plot. The "how" narratives would include the discourse – the formal phrase, i.e., the way phrases on tax compliance and related factors were delivered by the interviewees, which might be straight or oblique. The story would be analysed within the plot, which would carry the connecting sequences of action and events. Finally, and most importantly, a typology consisting of explication, explanation and exploration would be adopted, which would answer the "why" question (Corvellec, 2006). By explication, as Corvellec (2006: 14) puts it, we answer the question, "What does the transcript say?" By explanation, we attempt to understand the question, "How does the text say what it says?" And exploration answers the question, "What does the text do to us?" Altogether, this typology would make a "narrative mode of knowing" (Czarniawska, 2004), the underlying logic between tax compliance and the selected instruments.

3.13 Methodological Limitations and Constraints

It is important to keep in mind several limitations regarding this study before claiming any authoritative conclusions. First, all the limitations commonly associated with a survey methodology are applicable. Of particular relevance is the possibility that participants" stated preference is subjective and may bias variable measurements. Wu (2005) argues that perceptual and self-reported psychometric data may be seriously affected by trash talking by respondents. Variable measurements in survey methods are also affected by how questions are phrased and placed (Kornhauser, 2007). However, Frey and Feld (2002: 2) point out that in economic theories, "Tax compliance is studied by using the subjective expected utility maximization calculus."

An associated limitation was that the survey asked a single question on a five-point scale that was not part of a cluster of statements on a similar topic. Single-item questions, however, are not new in research. With single-item questions, Khalek (2006) conducted successful research on measuring happiness, and DeSalvo et al. (2006) on measuring health status. In tax compliance research, Sheffrin and Triest (1992) use a two-item question in measuring tax compliance and attitudes towards tax compliance; and Murphy uses two-item questions in measuring trust. Moreover, to mitigate this problem, respondents" observations would be measured on a test and re-test basis. Martindale et al. (1992) used a Likert-type scale on a test-retest basis to measure attitudes to the complexity of US IRS income tax laws among tax professionals. And Khalek (2006) conducted a test-retest reliability check with a single-item Likert-type scale in his assessment of happiness among university undergraduates (Discussed further in section 5.3.1.2).

A limitation of the study was that it took a sample of large corporate taxpayers from the LTU of Bangladesh only. The emphasis on only one country"s LTU would limit the external validity or generalizability of the study results. Observations from the large corporate taxpayers of two separate LTUs within the same or different geographical locations would give further insight into how a mix of coercive and persuasive instruments influenced the compliance process. The results of the present study could only be generalizable to the large corporations of the geographical area studied. To overcome this limitation, efforts would be expended to take into account the corporate context. A contextual analysis of coercive and persuasive instruments would extend the external validity of the research to regions with similar contexts.

3.14 Chapter Conclusion and Summary

This chapter has described the creation of the analytical framework to be employed for this research. It has attempted to justify the research question and the perspectives to be used in answering the question. The chapter has developed the logical framework for the study and has explained why the particular dependent, independent and control variables were selected. The design and the logical sequence to be followed in the research have been discussed. The validity and generalization issues have been reviewed. The appropriateness of the research method has been examined with particular emphasis on a mixed-method approach. Detailed discussion has been presented on sampling and data collection issues. The data analysis techniques to be used for the study have been elaborated. Before moving on to the data analysis, which is planned to start from chapter 5, a short presentation is made in chapter 4 of the fieldwork methods for the study.

CHAPTER IV
FIELDWORK METHOD

4.1   Introduction

The purpose of this chapter is to discuss the strategies and actions undertaken to collect data in the field. The chapter spells out the time frame of field visits, details of the survey and interview respondents, and the ways of establishing contact with them. It gives details of the collection of documents from the LTU and other wings of the tax administration. It discusses the checklists that helped in planning and implementing a balanced and varied fieldwork programme. In one sense, this chapter provides the practical programme for the theoretical structure we saw being designed in chapter III to guide the data collection and analysis techniques. It will present the significant fieldwork events and show how they were recorded to produce and make sense of the data. It will show how pre-testing and piloting of the surveys and interviews was carried out before starting the data collection. The chapter starts with an introduction to the basic features of large corporate tax compliance before moving on to how the fieldwork plans were implemented.

4.2 The Bangladesh LTU and Large Corporate Taxpayers

The level of tax revenue in Bangladesh is among the lowest in the world. Tax collection is largely ad-hoc and leakage from the system is endemic. In 2002, before the LTU was introduced, the total ratio of revenue to GDP, at 9.7%, was low compared with other countries in the region. To increase tax revenues through enhancing tax compliance by the biggest taxpayers, the National Board of Revenue – the apex revenue authority of Bangladesh established the Large Taxpayers Unit (LTU) in November, 2003, under a DFID funded reform programme (NBR, 2005). Achieving this objective has been crucial, since a high

proportion of income tax revenue, around 30%, is collected from a few large taxpayers. It shows that non-compliance by a few hundred corporate taxpayers may cause a disaster in the revenue administration of Bangladesh.

At the organizational level, four basic functions – taxpayer service, revenue accounting and return processing, collection enforcement, and audit – have been designated as the purpose of the LTU. Each of these functions, directly or indirectly, has a role in identifying non-compliance, with major support from the revenue accounting and audit wings. The revenue accounting function is to track the filing of tax returns, and the assessment and arrears situations, and thus identify filing and payment non-compliance. The audit function detects reporting non-compliance by reviewing unusual patterns and inconsistencies in tax returns. Revenue accounting and audit functions generate workload for the enforcement wings. The service function, on the other hand, is designed to educate taxpayers about complex tax laws and prepare documents to support legal actions in the courts. However, in practice there are deviations and overlapping of functions among the four wings that jeopardize the tax process to some extent.

4.2.1 LTU Jurisdiction

When the LTU came into being in Bangladesh in 2003, the NBR, by its order no.12 (8) kar-4/paribikkhan/96(aongsha-1)/2003/574, dated 1/11/2003, placed 254 large corporate taxpayers under the LTU"s jurisdiction. Subsequently, in tax year 2004-2005, the number of corporate taxpayers answerable to the LTU increased to 267; in tax year 2005-2006 the number increased to 276; and in tax year 2006-2007 it increased to 281. In contrast, during tax years 2007-2008 to 2009-2011, the number of corporate taxpayers dropped to 275, due to mergers by some large corporations, while in tax year 2011-2012, the number increased to 317 as a result of the initiative that placed merchant banks under the LTU"s jurisdiction. This

suggests that the LTU has had an increase of (317-254) = 63 corporate taxpayers during the last 9 years.

In addition, there were 706 large individual taxpayers, who were the directors of those large corporations placed under LTU Jurisdiction. Large finance sector corporations are the mainstream corporate taxpayers, along with some large pharmaceutical and cement corporations. All the banking and financial corporations in Bangladesh fall under the LTU administration as a result of special orders of the NBR.

Table 4.1 Annual returns submitted and tax collections

Tax year	Total submitted returns	Corporate taxpayers			Individual taxpayers		Total collection (In mill. Taka)
		Total corporate files	Submitted returns	Tax collections (In mill. Taka)	Submitted returns	Tax collections (In mill. Taka)	
2005-2006	856	276	272	58.00	584	1	59.00
2006-2007	878	281	265	136.00	613	3	139.00
2007-2008	828	275	252	323.00	576	11	334.00

Source: LTU publications

In each year, as we see from Table 4.1, returns submitted by corporate taxpayers fell, meaning a filing non-compliance. In the tax year 2007-08, (275-252) = 23 corporations did not submit returns or pay any taxes, which implies payment and reporting non-compliance by these corporations. However, quite surprisingly, tax collections have increased, even though there has been a decrease in filing compliance. Tax payment by corporations at the filing stage, which presumably represents self-assessment returns, went up about 6-fold in 2007 compared with 2005. This shows that some corporations paid more taxes in the tax year 2007-2008 than in the previous tax years, perhaps, due to increased corporate profits and/or corporate marginal tax rates, or to decreased exemptions. Another reason for this might be the tough enforcements of coercive, or the gentle use of persuasive, actions, which this research seeks to explore.

4.2.2 Tax Collections from Large Corporations

The average real growth rate of income taxes paid by corporate and non-corporate taxpayers in the LTU during the period 2004-2009 was 24.01% (see Table 4.2), against growth in real GDP of 5.73% over the same period (CIA, 2010). In 2004, the total income tax collection from large corporate taxpayers was 14,756 (million Bangladeshi Taka). In 2009, it rose to 48,100 (million Bangladeshi Taka) equivalent to about 707.35 million US dollars.

Table 4.2: Annual total tax collections in the LTU in millions of Bangladeshi Taka

Financial Year (1)	Yearly target (2)	Taxes collected (3)	Excess/deficits in collection compared with yearly target (4)	Increase/decrease in collection compared with previous year(5)	Nominal growth rate (6)	Real growth rate (inflation adjusted) (7)	National tax collection (8)	% of LTU to national income tax (9)
2004-2005	21,000	14,756.1	(6,243.)*	-	18.96 %	12.96%	55770	26%
2005-2006	22,000	22,506.2	506.	6,750.0	52.50 %	45.5%	71620	31%
2006-2007	31,000	31,044.8	44.8	(461.4)	37.73 %	30.53%	87210	35%
2007-2008	39,500	40,420.0	920	8,75.2	30.10 %	21.00%	130145	31%
2008-2009	48,000	48,100.0	100	(820.)	19.00%	10.1%	150020	32%

Source: LTU publications, * figures in the parentheses indicate deficit or fall in tax collection compared with previous year

After the start of its fully-fledged operation in April 2004, the LTU showed a massive improvement in income tax collection. In each subsequent year, the targeted budget was achieved with surplus revenues (column 4), although the amount of the surplus fell gradually from 2004. In the fiscal years 2006-2007 and 2008-2009, surplus tax collections had fallen, as compared with previous years (column 5), by 461.4 and 820.00 million Taka respectively. Notably, revenue growth in nominal and real terms had gradually decreased over the years (columns 6 and 7). The real growth, after making adjustment for inflation, rate of tax collection fell to 10.1% in the financial year 2008-2009 from 45.5% in financial year 2005-2006 (column 7). Targeted quantitative standards in revenue administration, however, as Crandall (2010) states, are very often set to give a simple direction to tax collection without

considering the potential for obtaining those tax revenues. Tax revenues may not rise with GDP growth because of important dependence on the agricultural sector or weak institutional capacity (World Bank, 2009; IMF, 2002). For the large corporate taxpayers, a potential reason for this may be a fall in the bank interest rate and its effect on the profit-making capacity of the banking sector, which provides 52% of LTU income tax revenues. Other reasons include a cut in the corporate tax rate over the years, extended tax holidays and accelerated depreciation allowances to corporate taxpayers. In addition, there may be accumulated tax arrears remaining uncollected for lack of adequate enforcement capability in the LTU.

However, a striking feature of LTU revenue collection is its increasing share of national tax revenues. During 2004 to 2009, the LTU"s share of tax collection in proportion to national income tax collection increased from one-quarter to one third. In financial year 2004-05, LTU"s share of national income tax collection was 26%. In 2008-2009, the year the LTU reform was completed, the share went up to 32%, a net rise of 8% within five years. This prompts a question as to how the LTU compliance model, which claims that persuasive compliance strategies are equally as significant as, or more significant than, coercive strategies, contributes to improving tax compliance and revenues.

4.2.3 Audit Action on Large Corporations

Large corporations are subject to auditing on a selective basis once the deadline for return of submissions, as defined by the income tax law, has passed. The audit programme is based on those returns submitted within the time stipulated by tax law. Those who fail to submit returns on time incur a penalty. Before the audit decisions are made, the tax returns are screened through the revenue accounting wings to detect any apparent non-compliance, for example, miscalculation of tax liabilities. The audit rate – the percentage of filed returns to be

audited– is not made known to the corporations; but the audit rate of large corporate taxpayers in Bangladesh is usually high, given the possibility of revenue leakages from non-reporting. It is pertinent to mention that the rate of large corporate audit actions is high across the world. For example, in Hungary all large corporations are audited every second year (Pitti and Vazquez-Caro, 1998). In the US, the audit rate for large corporations was one in six (16%) in 2004 and this shot up to 64% in 2008 (TRAC Report, 2011; Dubin et al., 1990).

Audit cases in the Bangladesh LTU are selected on the basis of pre-determined audit rules decided and approved by the NBR. Audits are of two kinds mainly – desk verification; and comprehensive audit. In a desk audit, tax returns and financial statements are verified away from the taxpayers" offices, without any legal engagement of the taxpayers at the point when the audit begins; while comprehensive audits start with the legal engagement of the taxpayers, and the audit team carefully examines how the taxpayers have attended to their statutory obligations under the tax laws rather than carrying out a traditional audit of the tax return. Comprehensive audits necessarily require fieldwork in taxpayers" and related offices to make the audit results acceptable to taxpayers.

Table 4.3 Annual audit outputs from large corporate taxpayers in millions of Bangladeshi Taka

Tax year (1)	Completed audits				Audit demands created (6)	Collected from audit demands (7)
	Desk verification audit		Comprehensive audit			
	Files targeted to audit (2)	Files audited (3)	Files targeted to audit (4)	Files audited (5)		
2003-2004	80	80	0	0	5,340.0	3,320.0
2004-2005	193	193	6	6	1,501.1	752.0
2005-2006	196	196	6	6	3,142.3	1,527.1
2006-2007	180	180	3	3	1,012.5	542.5
2007-2008	84	26	0	0	112.3	23.5
Total	733	675	15	15	11,108.2	6,165.1

Source: LTU Annual Report, 2009

As Table 4.3 reveals, the amount of audit demands (column 6) and collections from these (column 7) have decreased over the years, except in tax year 2005-2006. For example, in tax year 2003-04, additional tax of 5,340.00 million Taka was demanded from the tax audits of 80 files (column 2) i.e., per file audited tax demand was 66.75 million Taka. In 2005-06, per file audit demand decreased to 16 million, and in 2007-2008 to 1.33 million. Declining audit demands may have two potential explanations: first, audit actions have been successful in reducing the amount of income underreporting. Second, the deterrence effect of tax audit has fallen in the face of complicated game-playing techniques by the corporations. It should be noted that roughly half of the demands created in every tax year remained uncollected (column7), may be because the audit demands were bogus or the enforcement measures were weak or ineffective.

4.3 Fieldwork: Major Stages

Being effectively and correctly equipped for fieldwork not only influences the success of a research project but also makes a positive experience of the whole process of data collection (Nash, 2000; Robson and Willis, 1997). The fieldwork for this study was conducted from August, 2010,to November, 2010, and involved five major steps. The first step was to contact the LTU and other organizations to ask for data support and identify the most appropriate people to interview. Tax compliance data are regarded as classified information by tax agencies, and so it is difficult to get access without written permission from the concerned authority. The second step was to conduct the survey by using random sampling techniques. For this, a simple random table was used. A list of 275 large corporations was drawn up on a separate sheet and the samples were selected based on Stat Trek"s computer-generated random number tables. The third important step was to design the preliminary questionnaire and present it to the sample respondents.

The fourth important step was to design a comprehensible and unthreatening, semi-structured, open-ended questionnaire for the interviews to be conducted among the selected elites. The sample interview guide is shown in Appendix C. A list of potential interviewees was drawn up, with their contact details, and these people were asked for an appointment at a time and place convenient to them. The final task was to analyse the LTU administrative records involving tax files, the audit reports of the corporations, tax audit findings, related registers, and reports and statements prepared for taxpayers and for higher authorities, particularly the NBR. Documents were mainly collected at off-peak office hours. Based on these five major stages, the total process of the fieldwork was broken up as follows.

Table 4.4 Time taken and work flow organization of fieldwork

Fieldwork task	Approximate Duration
1.Establishing contact with LTU	3 days
Informal discussion	1 days
Submitting formal letter	1 days
Getting approval from LTU	1 days
2.Sample design	5 days
Sample design	2 days
Making list of respondents	1 days
Preparing mails	2 days
3.Questionnaire: design and respondent opinion	35 days
Piloting questionnaire	7 days
Making changes in questionnaire	2 days
Sending questionnaire to 162 respondents	1 days
Collecting questionnaire by three research assistants	25 days
4.Interviews	32 days
Identifying initial interviewees	1 days
Requesting time, appointment	1 days
Conducting interviews	30 days
5.Document analysis:162 tax files (8 tax files a day)	23 days
6. Re-testing part of the questionnaire by assistants	20 days

As the steps listed in Figure 4.1 show, the fieldwork involved different tasks in the six designated stages. The data collection process began after written permission was received from the LTU Commissioner. During August, in addition to making contacts, the sample

design and piloting of the questionnaire were partially completed. The main workload began in September, when the survey questionnaires were sent out to respondents and a few interviews were completed. Once the survey questionnaire was sent to the respondent large corporations by registered post, the research assistants were appointed to collect them in the first and second stream of survey questionnaire. The appointment of research assistants saved time for the researcher to conduct face-to-face in-depth interviews and collect data from tax office records. However, the researcher maintained telephone contact with the respondent corporations to make sure that the questionnaires were filled without fear or pressure.

Chasing respondents by telephone continued until they finished answering the questionnaire. In some cases, the respondents were systematically approached three/four times to fill in the questionnaire. Questions were asked sparingly, keeping in mind that large corporate managers and directors are extremely busy. The research assistants were particularly instructed to collect the questionnaire once all questions had been addressed. It was therefore possible to get almost all questionnaires filled in (see section 5.2) and to keep non-response bias to the minimum.

Checking for non-response bias[10] was easier for questions 1 to 5 (see the questionnaire in appendix C) as they included data on corporate business type, ownership pattern, etc., and could be compared with LTU file records. But there was a high possibility of response bias for those questions that included self-reported perceptual data. To check for bias in data drawn from the self-reported questions, these data were collected on a *re-test* basis, as discussed in sections 3.12 and 4.5. The reliability and validity of the self-reported data were checked and presented in section 5.3.

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[10] In statistical surveys, non-response bias refers to a situation where the potential answers of non-respondents systematically differ from the answers of respondents. If the response rate is high, non-response bias causes no problem. Response bias, on the other hand, relates to answers made on the basis of favouritism rather than the merit of the question. Both response and non-response bias can severely affect the generalizability of the study outcome (Edwards et al., 1997).

For the semi-structured interview, in total, 27 respondents were interviewed. As the interviews were planned to be in-depth, and the appointments were pre-set, some interviews went on for three to four hours to enable a full discussion of the issues. The time frame set for data collection included 24 days off for weekends and public holidays. When the extent of the data required is considered, the time spent in the field seems reasonable, although Delamont (2002: 122) thinks that, "proper fieldwork is like a casserole: it should simmer for a long time at a low heat." The following discussion elaborates some of the important activities in the field.

4.4 Fieldwork Gatekeepers and Contacts

As gatekeepers of areas of important information, the following people were contacted: the LTU Commissioner; a member responsible for tax administration at the NBR; a member responsible for tax policy at the NBR; the Deputy Commissioner of Taxes at LTU Headquarters; and the Deputy Commissioner of Taxes, Appeal and Enforcement at the LTU. In the process of negotiations with the gatekeepers, and subsequently with the participants, the following issues took priority:

- Ensuring that these people were interested in participating in the research;
- Explaining the research topic, its purpose and procedure;
- Explaining the risks and benefits, if any, for taxpayers of participating in the research;
- Explaining the voluntary nature of cooperation;
- Emphasizing the confidentiality of the interviews and that the anonymity of survey respondents would be ensured;
- Underlining that the consent of the participants was being sought before any data was asked for.

Negotiating access to interviewees is part of the data collection process, and the first stage of the "field journey" (Maso, 1995). Two documents are vital to start these negotiations and to eventually complete the fieldwork successfully: fieldwork permission from the academic authority involved; and authorised access to the organization or community involved (Scheyvens and Storey, 2003). The Ethical Review Committee of the University of Birmingham granted their unconditional approval to the fieldwork, first by email confirmation and then by formal letter (see Appendix C). The next step was to get access to the LTU database. Access to tax administration databases may sometimes be difficult, because of entrenched bureaucracy in tax offices. With this caveat in mind, the process of establishing contact with the LTU authority of Bangladesh and large corporations under its jurisdiction was begun on the first day of the fieldwork. The top LTU officials were formally informed of the data requirement for the research, and were assured that all data would be treated with confidentiality. After an informal discussion, the researcher submitted a formal application to get written permission to access the computer database, income tax files, registers, reports and correspondence. The researcher was permitted access to the LTU database by LTU office order no LTU/admin/2010-2011/62, dated August 16, 2010 (see Appendix C). This permission was vital for selecting the sample taxpayers and contacting them for data. In addition, I attended a few conferences and symposiums arranged by trade bodies during the field visits. This provided me with the opportunity to know the corporate world better and widen my corporate networks. It also helped me in developing a personal relationship with potential elite interviewees and requesting an appointment.

The other purpose of establishing contact with the tax authority was to collect documents, which would be an important source of data for the fieldwork. These documents included NBR bulletins, magazines and annual reports; local newspapers; semi-public documents

(records of tax advisors" associations); and semi-private documents (taxpayers"/tax advisers" documents prepared for submission to the LTU).

4.5 Administering the Questionnaire and the Interviews

The big challenge of conducting a survey is to translate the research objectives into a well thought out and methodologically sound questionnaire (Warwick and Lininger, 1975; Tuck, 2004). A questionnaire is an efficient and fitting method for collecting information by setting closed-ended or opened-ended questions. For closed-ended questions, a list of possible answers is offered, from which respondents are asked to select one (O"Sullivan and Rassel, 1994). Surveys of this type are called respondent dependent questionnaires (Chadwick et al., 1984). They have, however, some drawbacks: pre-set answer patterns cannot dig down into the inner or deeper meaning of a respondent observation. Respondents have little or no liberty to change or explain an answer once made, and nobody other than the intended participants can participate in filling in the answer.

To get accurate information, a questionnaire should not be more than 11 pages long and not have more than 125 questions (Dillman, 1978). The major information for this research was collected from tax office documents. For the remaining data, a very brief and simple closed questionnaire with 14 questions over four pages was framed. The survey package posted to each respondent contained a covering letter, the questionnaire and a consent form. No reply-paid envelope was needed, since the questionnaire would be collected by a research assistant in a personal meeting. The covering letter explained the aim of the study, guaranteed participants strict confidentiality for their responses, and gave the email and mobile contact numbers of the researcher and his lead supervisor (see Appendix C).

The draft questionnaire, through a cognitive piloting exercise among a cross-section of large corporate tax professionals and accountants, was finalized. The questionnaire survey was

conducted twice. The second survey was conducted in the final month of the fieldwork, among the same respondents and using the same procedure followed for the first survey. The second questionnaire survey contained only five questions (see Q10-Q14 in the questionnaire, Appendix C). Three research assistants were appointed to help in conducting the survey. They were well trained in the use of the questionnaire and its contents and were instructed in how to interpret it to the respondents when they visited the respondents" office to collect the filled-in questionnaire.

Similarly, to select the participants for the semi-structured interviews, I first reviewed the LTU database to trace good and bad corporations. The Deputy Commissioner (Appeals and Enforcement) prepares a list of recalcitrant corporations that need chasing. This list was one of the documents taken as a guide in selecting the initial interviewees for the compliant and non-compliant groups. The initial interviewees so selected paved the way to get to other taxpayers who would help the researcher to arrive at an in-depth analysis of corporate tax compliance. Experts, who had a thorough knowledge about corporate tax compliance, irrespective of their corporate position, were selected. Such people were either referred to me by an expert already interviewed, or I found them by attending trade body seminars and symposiums.

Fourteen tax officials involved with the tax affairs of large corporations were interviewed. Of these, six were interviewed from the LTU and eight from other tax bodies. According to the Income Tax Ordinance (ITO), 1984, tax officials are not allowed to provide any opinion or records of any taxpayer without receiving permission from a higher authority. To make sessions with tax officials easier and more relaxed, the researcher had to make his academic and research identity clear through formal applications. In some cases, interviews were tape

recorded and transcribed. Where the interviewee refused permission to tape record, complete notes were taken and were transcribed soon after the interview.

4.6 Insider Research: A Challenge and an Advantage

This is insider research in the sense that the researcher had spent about 14 years of his life in the tax administration of Bangladesh before embarking on the research. Insider research refers to a situation where the researcher has some experience of, or insight into, the world being researched, either from a personal or a professional perspective (Aguilar, 1981). Insider research is often attacked on the grounds that it deals with the researcher"s own organization"s work and he/she is so involved that it may inhibit his/her perception of the social and cultural process. Insider research may affect the power relationship between the interviewee and the interviewer, and may cause an asymmetric flow of information from the conversation. Another limitation is that the researcher may not have the curiosity essential for the research because he/she is too close to the research setting and may not be interested in the behaviour of the research subjects from a scientific point of view (Aguilar, 1981). This may hamper him or her from in getting the objective information that is essential for credible research. To tackle this issue, Brannick and Coghlan (2007) propose that researchers have reflexive awareness of the relationship between them and the object of their research, which is one means of reducing the problems associated with insider research.

The advocates of insider research argue that insiders are less likely to disrupt the social setting of their investigation and have already acquired a vast amount of knowledge on the community and its members (Sikes and Potts, 2008; Alvesson, 2003). This makes it less likely participants will conceal facts from them. Insider research thus becomes more economical and efficient (Atkinson et al., 2003). The advocates of insider research also argue that the possession of intimate knowledge of a community and its members does not

necessarily mean the researcher has been employed by a particular organization (Hellawell, 2006). The word "community" has wider implications than "organisation", and knowledge of the local tax culture and the fact that he had established a prior relationship with respondents would enable the researcher to have unencumbered access to participants. Further, doctoral research is meant to create new knowledge, which comes through a combining of professional and higher academic practice with the researchers" individual projects (Drake and Heath, 2010). This requires the insider researcher to maintain a fluid and flexible stance, behaving sometimes as a practitioner and sometimes as a researcher and author, in order to make meaning out of his or her interactions and relationships with members of an organization.

The current researcher more than fulfils Twumasi,s (2001) requirements for conducting insider research, understanding the local language at a grass-root level and being well informed about the sentiments and aspirations of the participants. Because of a prior relationship with the tax administration of Bangladesh, the researcher had privileged access to important and sensitive information on tax compliance issues that would otherwise have remained unnoticed and unused by outsiders. For example, it was through an informal discussion that the researcher found out that many financial institutions prepare their audit reports on an incremental basis, based on the previous year"s performance, to avoid the huge workload of starting them afresh.

On balance, the advantages that accrued to the researcher from being an insider outweighed the disadvantages, especially considering that the issue of context was pivotal to the study. Knowledge of the language of the area of study meant that the researcher prepared and translated the interview guide and questionnaire himself. Thus the researcher was able to

ensure plenty of control over the data collection process by reducing the involvement of assistants in its crucial stages.

There was however a danger that corporate directors and tax professionals might be victimized for sharing sensitive tax-related information and opinions with someone who was a tax official. To reduce such concerns, the researcher did not emphasize his official position, nor did he lie about it, but rather attached value to corporate views and experiences from a purely academic point of view. The researcher did not rigidly pursue answers to research questions; instead, in some cases, he allowed the respondents to focus on other issues of concern to them. For instance, some respondents commented that they were more concerned about and interested in a tax environment of strong inspection and surveillance than in the mere imposition of penalties or imprisonment as a means of coercive tax practice. It seemed that listening to the respondents in a greater detail and adopting a flexible approach boosted their confidence, shifted the power imbalance, and reduced their concerns. To further reduce anxiety, strict adherence to ethical standards was promised at every stage of the research process (see next section). As a result, respondents" concern did not greatly affect the study results.

4.7 Ethical Issues

Tax compliance research is highly sensitive, especially when the research is based on real tax office data. Disclosure of classified information to the public, either for research or newspaper reporting, may endanger the tax administration. It would not be safe for large corporations to disclose their tax evasion and non-compliance practices, particularly to an insider researcher. There is every chance that at a later date they will run into trouble for sharing such sensitive information. The only reason that the tax administration and the corporation will take the risk of sharing their data is if they receive an assurance of high

ethical standards and confidentiality from the researcher. Ethical considerations are important, particularly when fieldwork is involved which probes respondents" private lives and seeks for information they would prefer to keep secret.

Ethical considerations raise the question of how to guard the interests of those who willingly take part in research and how to minimize any potential conflicts between researcher and respondents (Flick, 2009; Cash et al., 2009). A researcher, throughout the research process, has no right to intimidate or harm the respondents for giving or not giving any information. Methodological and ethical issues are inextricably interwoven (Chen et al., 2007). Gillam and Guillemin (2004) state that ethical codes and standards oblige researchers to respond and react to the most sensitive disclosures made by respondents and to manage the disclosure dilemma. If a respondent reveals vulnerability in answering a question, this should be an ethically important moment and the researcher in that case has to decide how far he can probe the respondent.

While interviewing and administering the survey among the tax officials, corporate directors and professionals, it was emphasised that respondents should share only information they were willing to give. A consent form was placed before the respondent giving the identity of the researcher, and the title and purpose of the research, in order to ensure informed consent. The consent form informed the respondent that he could withdraw from the interview at any time without any hesitation, and that he could refuse to answer any question. However, an unequal power relation between researcher and respondents, particularly when the latter were tax advisors, could cause them to refuse to answer a question. In such cases, the researcher relied more on body and facial signals, to avoid causing the respondent discomfort and uneasiness.

An important aspect of ethical practice is the confidentiality of the research process and the anonymization of the individuals interviewed (Somekh and Lewin, 2011). Respondents have every right to know where the information they give will be disclosed and how it will be stored. In the case where researchers have to disclose their sources to authenticate information gathered, pseudonymization can be used in such a way that the real respondents cannot be identified (Simons, 2009).To ensure confidentiality and anonymization, Mochmann and Muller (1979) suggest the separation and removal of identifying items; the erasing of data after a fixed period; the controlling of physical access to data by anyone other than the researcher; and giving respondents the right to withdraw or to get back the data they have supplied at any time later. However, in some cases, for example where participants carry out research into their own background or policy area, anonymization may not prevent recognition of the contribution of some participants.

4.8. Chapter Conclusion and Summary

This chapter has focused on the „who, what, where, when and how" of the fieldwork activities for this research. It has explained how the fieldwork plan was implemented during the data collection stage of the research. It has identified the roles and responsibilities of the researcher in the field. And it has shown the time frame and the way different fieldwork tasks were coordinated and integrated to make the fieldwork successful. The data for the research were gathered over a period of three and a half months. The next chapter analyses the data to measure the extent of tax compliance achieved by the large corporate taxpayers.

CHAPTER V

HOW COMPLIANT ARE LARGE CORPORATE TAXPAYERS?

5. 1 Introduction

The purpose of this chapter is to measure the level of tax compliance achieved by large corporations in Bangladesh and to assess the validity of the data obtained by survey. In pursuit of this objective, tax compliance is divided into two levels: component level and overall level. At component level, tax compliance is measured by its components, namely, filing, reporting and payment. At overall level, individual components are totalled to measure overall tax compliance. Taxpayers originally labelled "non-compliant", but who subsequently got a ruling from the appellate authority that they were compliant, were considered during the measurement process. Measured compliance was reviewed on the basis of corporations" demographic features. Thus this chapter is mainly divided into three sections: First, it measures the reliability and validity of the data. Second, it measures the tax compliance levels in component and overall terms. Third, it contextualizes the measurement process by taking the corporate sector as the contextual variable.

5.2 Sample Description

The data for this study were drawn from two sources mainly: tax office documents and surveys (see section 3.10.3). From the data on tax compliance collected from the LTU database, information on 154 out of the 162 sample corporations was found, which was used to measure the tax compliance performance of the large corporate taxpayers. Seven tax files could not be traced as they had been sent to the appeal court. The survey was conducted among large corporate taxpayers registered with the LTU of Bangladesh. The questionnaire

was mailed to 162 large corporations, of which 154 responded adequately. The response rate for the survey was 95.65%. A detailed description of the sample corporations and their demographic characteristics is presented in Table 5.1.

Table 5.1 Descriptive statistics on sample corporations and their demographic characteristics (N = 154)

Characteristics	Categories	Frequencies	Percentages	Cumulative ratios*
Ownership Structure	Public limited	115	74.7	74.7
	Private limited	39	25.3	100
	Finance	80	51.9	51.9
Corporate sector	Manufacturing	43	27.9	79.9
	Service	31	20.2	100
Corporate location	Local	129	83.8	83.8
	Multinational	25	16.2	100
	A(assets)<$3m	25	16.2	16.2
	$3m<A<$7m	36	23.4	39.6
Corporate size	$7m<A<$25	31	20.1	59.7
	$25m<A<$80m	24	15.6	75.3
	$80m<A<$500m	17	11.0	86.3
	A>$500m	21	13.7	100
	3-6 years	13	8.4	8.4
Incorporation age	7-10 years	52	33.7	42.1
	11-14 years	28	18.1	60.2
	15 years or more	61	39.8	100

*For all characteristics cumulative percentages are calculated on valid percentages, e.g., 154

Table 5.1 shows the demographic composition of the large corporate taxpayers in the sample. As it shows, 74.7% of the corporations had public limited ownership, with only 25.3 % being private. Of these, finance sector corporations constituted the major part (51.9%) followed by the manufacturing (27.9%) and service (20.1%) sector corporations. Large corporations with multinational locations numbered only a few (16.2%), and the majority were local corporations (83.8%). Corporations having total assets of between three and seven million US dollars made up the major band (23.4%), followed by the seven to twenty five million

asset band (20.1%). Statistics for incorporation age (e.g., age group) show that large corporations in the "15 or more years" group formed the principal category (39.8%).

5.3. Reliability and Validity Test

5.3.1 Reliability

Reliability is the extent to which a test yields consistent scores on repeated trials (Stangor, 2011). Reliability in quantitative research, according to Hartas (2010:71), "is the consistency and stability of a measurement, and is concerned with whether the results of a study are replicable (repeatable)." Hartas (2010) suggests that the consistency of a measurement can be examined in three ways: consistency over time, equivalence and internal consistency. This research employed the test of consistency over time, which refers to the extent to which the measurement is the same each time if the survey is conducted under the same conditions (Stangor, 2011). Under this method reliability is measured by the test-retest procedure, where two equivalent tests are conducted on the same respondents on different occasions. To see the stability of measurement between test 1 and 2, intraclass correlation is useful (Trochim, 2006; Hartas, 2010). Generally, with intraclass correlation, a score of from .30 to .49 is regarded as modest; from .50 to .69 is regarded as moderate; and from .70 to 1.00 is high (Brigham et al., 2009). Accordingly, in this research, intraclass correlation (ICC) was computed.

Table 5.2: Reliability test statistics for the survey questionnaire

Variables (questions)	Intraclass correlation*	
	Single measures	Average measures
Attitude to taxpayer service quality	.63	.77
Attitude to mutual understanding	.60	.75
Attitude to simplified tax law	.52	.68
Attitude to tax penalty	.71	.83
Attitude to imprisonment	.83	.91

*all significant at the .01 level

Table 5.2 illustrates the intraclass correlation with 95% confidence intervals for test and retest values of the concepts. It shows that the single measure ICCs for all concepts range from .52 to .83 and the average measures (ICC) range from .68 to .91, all significant at the $p < .001$ level. This indicates high consistency and thus reliability between the tests conducted on the two occasions.

5.3.2 Validity

A measure is valid if it reflects the content of the concept in question. Bryman and Cramer (2005:80) state that, "the question of validity draws attention on how far a measure really measures the concept that it purports to measure." It can be difficult to measure concepts accurately, due to measurement error, and this is even more the case with a single-item scale. However, there are good and bad sides to both the single-item scale and the multiple-item scale. Bergkvist and Rossiter (2007: 175) argue that when the construct is unambiguous, "there is no difference in the predictive validity of the multiple-item and single-item measures." It is argued that a holistic impression is useful when the respondent is busy, or ill, or is dismissive of the meticulousness of the multiple-item measures (Youngblut and Casper, 1993; Wanous et al., 1997). With single-item scales, Zimmerman et al. (2006) effectively measured quality of life, Wanous et al. (1997) studied job satisfaction, Robins et al. (2001)

assessed self-esteem, and Cook and Perri (2004) studied compliance with medication. Bergkvist and Rossiter (2007: 176) further argue that, "preference for single-item measures is not theoretically based but rather is practical, in that single-item measures minimize respondent refusal and reduce data collection and data-processing costs." The only caveat, as Bergkvist and Rossiter state, is that a single-item scale may not adequately measure a non-concrete construct. Therefore Bajpai (2011) suggests that the research objective should dictate whether to take a single item or multi-item scale.

The predictive validity of a single-item scale can be assessed by bivariate correlation, called "validity coefficient", and by multivariate regression (Rossiter, 2002). Point-biserial correlation and P values are two simple tools that can be used to investigate whether the test is measuring what it purports to measure. Verma (2006) used item point-biserial correlation to check for student class test reliability and validity. Point-biserial values range from +1 to -1, with a value of at least .15 recommended, and above .25 considered good (Verma, 2006).

Table 5.3: Item point-biserial output

Variables(Questions)	Corrected item-total correlation	Cronbach's Alpha
First Survey (Test)		
Taxpayer service quality	.273	.683
Mutual understanding	.292	.697
Simplified tax law	.275	.652
Tax penalty	.300	.708
Imprisonment	.428	.761
Second Survey (Retest)		
Taxpayer service quality	.162	.602
Mutual understanding	.325	.731
Simplified tax law	.101	.503
Tax penalty	.181	.615
Imprisonment	.399	.755

Table 5.3 above shows that the point-biserial correlations (e.g., corrected item total correlation in the table) are within acceptable limits, except for the measurement of simplified

tax law in the second survey (.10). For all other single-item questions the values range from .16 to .42, and therefore the predictive validity is well maintained. Some scholars, however, argue that it is important for a researcher to estimate the construct validity of a measure (Bryman and Cramer, 2005), which does not require empirical testing of the survey questions; it requires a theoretical specification of the relationship (Carmines & Zeller, 1979), for example, drawing upon ideas about the impact of technology on work experience. The theoretical relationship between the concepts used in this research, like taxpayer attitudes to penalties, has been specified (see sections 2.7.1 to 2.7.6). Moreover, in the pilot stage, the questionnaire, particularly the portion involving single-item scale, was reviewed by the LTU senior tax officials and professional accountants of large corporations.

In addition to the above, how respondents" attitude to coercive and persuasive instruments differ across different corporate sectors (i.e., finance, manufacturing and service) were checked and this has been placed in the Appendix (see point B in Appendix A).

5.4 Tax Compliance Components and Their Relationships

As elaborated in section 2.2.2 of the thesis and in the introduction to this chapter, tax compliance comprises three segments or components: filing, reporting and payment. Filing compliance measures whether tax returns have been filed on time. Reporting compliance measures whether income has been disclosed fully in the tax return. And payment compliance measures whether taxes have been paid in full on taxable income.

The question is what is the relationship between and among the three segments? If there is a filing compliance, it does not necessarily mean that income has been fully reported or taxes have been fully paid. There may be underreporting of income or underpayment of taxes, despite the fact that the tax return has been filed on time. From this point of view, the three segments maintain a mutually exclusive relationship. But the opposite may also happen. If

the return is filed on time, all income is declared, and taxes are paid in full, this makes the three components mutually inclusive and concurrent. Another possibility for the relationship of the components is that returns are filed on time and incomes are reported properly, but taxes are not paid in full; for reporting fully does no not mean paying fully. The only possible absurdity in the relationship would be for taxes to be paid in full but income not to be reported or tax returns not to be filed.

5.4.1 Tax Compliance Measurement

Filing compliance was measured directly from the tax office records that showed whether tax returns had been filed in time or not. According to the Income Tax Ordinance of Bangladesh, 1984, all corporate taxpayers, small, medium or large, are liable to submit their tax return by the fifteenth day of July following the end of their income year. But if this date comes before the expiry of six months from the end of their income year, then filing should come before six months expire from the latter date, unless the submission time is extended.

Table 5.4: Binary measurement of tax compliance – the dependent variable

Compliance type	Compliant	Non-compliant
Filing compliance	1	0
Reporting compliance	1	0
Payment compliance	1	0
Overall compliance, if shown	3	-
Overall non-compliance , if shown	-	0, 1 or 2

Source: Candidate"s own table

The above table on the binary measurement process of tax compliance demonstrates that corporations filing tax returns within deadline are filing compliant and are assigned a value of 1; those failing to file tax returns within the time are filing non-compliant and assigned a value of 0. Filing non-compliance is difficult for a corporate taxpayer, especially a large one,

since getting registered with the tax authority is a pre-condition to incorporation by the Joint Stock Office of Bangladesh.

Reporting compliance is measured from LTU audit adjustments. The audit records contain information as to whether there has been audit adjustment or not. Any adjustment imposed on a firm means that there has been a case of underreporting of income. For measurement purposes, no audit adjustment means the taxpayer has been found clean in its income declaration, although practically it may mean that the audit measures have failed to dig up unreported income. No audit adjustments means the taxpayer is reporting compliant (value = 1), whereas audit adjustments means reporting non-compliant (value = 0). In measuring tax compliance, the effect of appeals relating to initial non-compliance has been taken into account (discussed in section 5.4.3).

Payment compliance, the final component, is also measured from the LTU payment registers, which records whether taxes have been paid fully on the correct taxable income. No shortfall between the payable and the paid taxes makes a taxpayer payment compliant (value = 1). Any shortfall between these two makes a taxpayer payment non-compliant (value = 0). Tax evasion through payment non-compliance is also easy to detect. It only requires looking at whether taxes payable on taxable income, some of which was voluntarily reported by the taxpayers and some unreported and later unearthed by tax audit measures, has been paid.

Measuring compliance for any single component, as above, gives information about the status of a large corporation for that particular component only. But tax compliance is a holistic concept that necessitates combining the three components to define a taxpayer as either compliant or not (discussed elaborately on section 5.5.3). The combination process, however, depends on how compliance is defined as a dependent variable. Tax compliance defined as a continuous variable, as Hamm (1995) and Palil (2010) defined it in their studies on personal

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income tax compliance, allows it to be measured in ratio or proportion. In such cases, for example, reported income is divided by the total taxable income of the taxpayer to measure the extent or degree to which the taxpayer is compliant in its reporting obligation. From this approach to measurement, a taxpayer can be fully (when reported and real income is the same) or partially (when reported and real income differs) compliant. But this research defines tax compliance as a dichotomous variable, meaning that large corporate taxpayers can either be compliant or non-compliant.

The binary nature of this measurement therefore justifies totalling compliance components to assess the overall compliance performance of a taxpayer. Based on the above arguments, a taxpayer is considered overall compliant if in each of the components it has scored 1 (filing = 1, reporting = 1 and payment = 1) i.e., a total score of 3. Taxpayers will be overall non-compliant if their total score is less than three (e.g., score from 0 to 2). Total scores of 3 are converted into 1 and scores below 3 are converted into 0 in order to run the analysis in *PASW-18 (former SPSS)* and *Stata-11* and to measure the variables.

5.4.2 Is Tax Auditing A Narrow Measure of Reporting Compliance?

Tax evasion and corruption are endemic in Bangladesh (Khan, 1996). In a recent newspaper article, it was reported that of the 55,000 corporate taxpayers in Bangladesh, only 10,000 declare a profit. The remaining 45,000 corporations do not declare any profit or pay taxes (*The Daily Inquilab*, 18 July, 2011). How effective is tax audit as a measure of reporting non-compliance in a country like this? Two common reasons for tax audit to be imperfect, as Hanlon et al. (2005) argue are: first, ambiguous tax laws; and second, inefficient and corrupt tax administration – both of which occur in the tax system of Bangladesh (Chowdhury, 2006). Adjustment proposed through audit action is always questionable because audited demands are always used as an opening bid to raise declared income or to demand a bribe. Tax audit as

a measure is also criticized for its inability to take into consideration the long-term versus the short-term effects of any audit objections. For example, the audit team disallows an expense on the grounds that it should have been amortized over several years rather than charged as an expense for a particular year. The audit teams will only record the deficiency arising from the difference between the claimed expense and the first-year allowable expenses, but not the future fall in revenue for the amortization. Again, due to the present value of money, both the value of the yearly amortization and the audit adjustment will get de-valued, which the audit team does not record.

Despite these problems, tax audit adjustment is found to be a powerful deterrent to tax non-compliance in many studies, for example those by Mills, 1998; Mills and Sansing, 2000; Mills and Newberry, 2001. Fuest and Riedel (2009) state that micro approaches like tax audit information are quite effective in measuring tax non-compliance through survey. Referring to tax audit successes in the measurement of tax evasion in the US and Sweden, Fuest and Riedel argue that using national accounting data as a measure is disadvantageous for two reasons: they provide the overall picture only; and they are not very well produced in developing countries. Fuest and Riedel (2009:52) suggest that to answer the question of "why taxes are evaded, a desegregated analysis of taxes and taxpayer group would be required." Slemrod (2004) and Hanlon et al. (2005) also support this view by pointing out that tax audit adjustments were used as an estimate of the US income tax gap for small, medium and large corporations from 1977 to 1980. It can therefore be said that tax audit is the best of all the available measures, although it has some limitations.

5.4.3 Effects of Appeals on Tax Compliance

To measure tax compliance, the appellate and tribunal judgments passed in favour of a corporate taxpayer for an initial non-compliance need to be considered. A corporation

declared tax non-compliant by the LTU for any compliance component may opt for an appeal to the Taxes Appellate Authority (TAA). If it fails at the TAA stage, it may opt for a second appeal to the Taxes Tribunal Authority (TTA); and finally there may be an appeal to the High Court (HC) of Bangladesh. The LTU also reserves the right to challenge any appellate or tribunal judgment passed in favour of a taxpayer. Of the 154 sample large corporations (Table B.1 in Appendix B), 85 lodged appeal cases against the LTU"s audit decisions, of which 58 appellants failed, 14 won and 13 had their appeal cases set aside or re-assessed. Of the remaining large corporations (154-85) = 61 were happy with the LTU"s decision and 8 corporations did not opt for an appeal, although there were grounds for one. All the fourteen appeals yielding positive outcome relate mainly to reporting non-compliance.

In consideration of the high appeal rate and its probable impact on study results, adjustments were made in the measurement of tax compliance (see Table 3.3, section 3.12.1.3). For example, while measuring reporting compliance, corporations that were treated as non-compliant by the LTU but were later judged compliant by appeals courts were considered reporting compliant. LTU records show that only 68 corporations were reporting compliant, but when the appeal and re-assessment effects were included, the number of reporting compliant corporations increased to 83. If this adjustment had not been made, the measurement of both reporting compliance and overall compliance would have been affected.

However, no records were found on how many of those who failed in the first appeal opted for further appeals in the TAA or HC levels. Since some appeals were still pending in the TAA and HC levels, at the time the survey was conducted, it was not possible to take into account the effects of these appeals on the study design. Therefore the adverse effect of high appeals on the study outcome could be mitigated largely, but not fully.

Another issue related to the accuracy of this measurement is the quality and neutrality of appeal judgments. It was argued by a respondent that, "the appellate authority is outright corrupt and they sell judgments for money" (Respondent 26). Another respondent made the following explicit comment: "Large corporations know that if the LTU does not accept the audit report, they have to go for an appeal and have to spend money in the appellate offices to get justice" (Respondent 9). Other respondents commented that the money taxpayers spent in buying justice made them underreport income in the audit reports (elaborated on further in section 7.7.3).

Thus the effect of appeals cases can both be positive and negative on tax compliance and there are several tiers through which appeals cases are settled. The appeals process is not neutral and takes a long time to finalize. To get an unbiased judgment from the appellate authorities, the appellant may have to become involved in a collusive practice, which will have a direct bearing on the compliance performance of large corporations.

5.5 How Compliant are Large Corporate Taxpayers?

5.5.1 Compliance Components

Based on the interrelations between tax compliance components and the measurement process discussed in sections 5.4 and 5.4.1, this section measures the level of compliance by large corporate taxpayers.

Table 5.5 below provides summary statistics for compliant and non-compliant taxpayers. The first important observation here is that filing compliance is the highest among the three compliance components (84.41%). Second, as large corporate taxpayers move to the next compliance component, i.e. from filing to reporting, the rate goes down; and it goes up again from reporting to payment compliance. Tax compliance by income reporting is 53.89% and by payment of taxes is 75.32 %. Filing compliance has a mean of 0.84. A mean of 0.84 in

this case means that 84% of taxpayers are compliant, since the higher code 1 was treated as tax compliance and 0 as non-compliance. The mean value for any nominal variable that has only two categories has meaning (Leech et. al., 2008). In the case of tax payment, mean compliance (M = .75) falls as compared to filing compliance; and for reporting compliance, mean value falls further (M = .54). In each case, the modal group is 1, meaning tax compliance.

Table 5.5 Descriptive statistics on the tax compliance levels of large corporations (N = 154)

Tax compliance components	Compliance status	Frequencies	Percentages	Cumulative percentages
Filing compliance (FC)	Compliant	130	84.41	84.41
	Non-compliant	24	15.59	100
Reporting compliance (RC)	Compliant	83	53.89	53.89
	Non-compliant	71	46.11	100
Payment compliance (PC)	Compliant	116	75.32	75.32
	Non-compliant	38	24.68	100
Overall compliance	Compliant	57	37.01	37.01
	Non-compliant	97	62.99	100

5.5.2 Overall Tax Compliance

The method and rationale for totalling components was clarified in section 5.4.1. In measuring overall tax compliance for a particular taxpayer, the individual component scores are added. Table 5.6 shows that 96 large corporate taxpayers in the sample are both filing and payment compliant. If reporting compliance were not included, then overall compliance, based on the filing and payment components, would be 62.33%. But the number of taxpayers who are both filing and reporting compliant is 65, which reduces the level of composite compliance to 42%. The table shows that there are only 57 taxpayers who are filing, reporting and payment compliant, making 37.01% of large corporate taxpayers compliant in overall

terms. Thus, the mean composite compliance is .37 and the modal group is 0, signifying large

corporate taxpayers are mostly overall non-compliant.

Table 5.6 Cross-tabulation on measurement of overall tax compliance

Compliance types			Payment		Reporting		Overall	
			Com	Non-com	Com	Non - com	Com	Non-com
Filing by payment, reporting and overall compliance	Filing	Com	96	34	65	65	57	73
		Non-Com	20	4	18	6	0	24
Payment by reporting and overall compliance	- - -	Payment	Com	72	44	57	59
			Non-com	11	27	0	38
Reporting to overall compliance	- - - - - - -	Reporting	Com			57	26
			Non-com			0	71

At this stage binomial test statistics were derived, which showed whether the proportion of

compliant and non-compliant large corporations differed by chance or by pre-specified

probability (Bryman and Cramer, 2005). The test showed that there was a statistically

significant difference in the proportion of compliant and non-compliant taxpayers in the cases

of filing, payment and overall compliance (p = 0.001). But for reporting compliance, the

difference was not statistically significant (p = 0.375). Again, a McNemar test, conducted to

see the marginal frequencies of two binary outcomes, showed that there was a statistically

significant difference in the proportion of compliant and non-compliant taxpayers between

component and overall tax compliance (p = 0.001). Finally, Phi and Camri"s V, measuring

correlation between binary variables, found these to be weak between filing and overall

compliance (phi and v = .329, p = 0.001) and between payment and overall compliance (phi

and v = .439, p = 0.001). But between reporting and overall compliance, the relationship was

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found to be strong (phi and v = .709, p = 0.001) meaning most of the non-compliance came from the reporting component.

5.5.3 Overall or Composite Tax Compliance: Why Do We Need It?

Tax compliance performance measured by a single component reveals the position of corporations with regard to that particular type of compliance. By fitting a regression analysis between filing compliance, as the dependent variable, and the selected tax instruments of coercion and persuasion, as the independent variables, it is only possible to know the effects of these instruments on filing compliance. Similarly, by fitting a regression analysis between reporting compliance and the compliance instruments, only the effects of the instruments on reporting compliance can be found. But finding the influence of the compliance instruments on filing, reporting or payment gives only a partial or segmented picture of the compliance process. Rather than measuring the influence of the compliance instruments on a particular component, it may be more important to find the influences on the components taken together. This is because tax compliance is a holistic concept comprised of all the three components. A compliance instrument improving filing compliance may not have any influence in securing overall compliance; whilst a compliance instrument influencing overall compliance may not have any contribution to make to the creation of filing compliance. Studying the influence of the compliance instruments for each of the compliance components and then for overall compliance will provide discernible insights into the large corporate tax compliance process.

5.5.4 Tax Compliance by Corporate Demographic Features

Demographic issues are important to contextualize an analysis of organizational studies (Cordes at el., 2007; Hernes, 2004). Corporate size, ownership structure, and membership of a corporate sector emerge as some of the most significant demographic features in this study.

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Measurement of tax compliance in terms of corporations" demographic features will enable us to select the context variable to be used in the multilevel logistic regression (see section 3.12.3), which is important for seeing how the role of selected tax compliance instruments differs when the effects of context variable is taken into account.

Table 5.7 shows the tax compliance performance of large corporations based on their salient demographic features. It shows that overall compliance is higher in private limited corporations (43.58%) than in public limited corporations (34.78%). Tax compliance measured by location shows that multinational corporations (40.00%) are better than the local corporations (36.43%), but only marginally.

In terms of filing compliance, the finance sector has the highest level of compliance (91.25%), followed by the service (80.64%) and manufacturing sectors (74.41%). But in reporting compliance, service and manufacturing corporations jointly reach the highest level of compliance (67.74%) and (67.44%) respectively, whilst rates for this compliance are 41.25% for finance corporations. Finally, in terms of payment compliance, manufacturing corporations are the most compliant (83.72%) followed by finance (73.75%) and the service corporations (67.74%). When the compliance components are combined, manufacturing corporations turn out to be the top compliers (44.18%), in comparison with service (38.70%) and finance (32.50%) corporations.

Table 5.7 Descriptive statistics on the tax compliance of large corporations by type of ownership, membership of corporate sector, and corporate location (N = 154)

Tax compliance types	Compl. status	Ownership structure		Corporate sectors			Location	
		Public limited	Private limited	Finance	Manu.	Service	Local	Multi
Filing compliance	Compliant	100 (86.95%)	30 (76.92%)	73 (91.25%)	32 (74.41%)	25 (80.64%)	108 (83.72%)	22 (88.00%)
	Non-compliant	15	9	7	11	6	21	3
Reporting compliance	Compliant	57 (49.56%)	26 (66.66%)	33 (41.25%)	29 (67.44%)	21 (67.74%)	68 (52.71%)	15 (60.00%)
	Non-compliant	58	13	47	14	10	61	10
Payment compliance	Compliant	84 (73.04%)	3 2(82.05%)	59 (73.75%)	36 (83.72%)	21 (67.74%)	98 (75.96%)	18 (72.00%)
	Non-compliant	31	7	21	7	10	31	7
Overall tax compliance	Compliant	40 (34.78%)	17 (43.58%)	26 (32.50%)	19 (44.18%)	12 (38.70%)	47 (36.43%)	10 (40.00%)
	Non-compliant	75	22	54	24	19	82	15

Note: Figures in the parentheses indicate compliance percentage in the respective category

Two things are worth noting here: first, none of the sector corporations achieves top compliance in more than one component. The finance sector gets the highest compliance in filing, the manufacturing sector in payment, and the service sector in reporting compliance. On average, the manufacturing sector corporations are the most compliant. Now, the question is, why should this be so? Perhaps, central banking regulations and monitoring, as argued by the respondents, require that large corporations in the finance sector prepare their audit reports on time; but such regulations are not enough to ensure they fully report their business income. One respondent expressed his views about this in the following way.

> There are high level manipulations affecting tax compliance behaviour despite there being strong rules and regulations. For example, the accounts of banks are prepared on the basis of papers sent from the branches, which are huge. It is quite difficult, like measuring the size of an elephant for a blind person, to audit all the papers and find underreported income. Thus tax non-compliance may be a capacity-related issue as well as an intentional force attempt to hide some income or expenses. (Respondent 5)

The reason that service sector corporations are the top reporting compliers may be due to the fact that compared to finance and manufacturing corporations, the percentage of multinational corporations is relatively high in service sector. Of the service sector corporations, 29.03% are multinationals, whereas the percentage is 11.25% and 16.27% respectively for finance and manufacturing sector corporations (see Table 5.8).

Table 5.8 Distribution of large corporate sectors by location (N = 154)

Corporate national boundaries		Corporate sectors			Total
		Finance	Manufacturing	Service	
Local or a foreign corporation	Local	71	36	22	129
	Multinational	9	7	9	25
Total		80	43	31	154

As argued by the respondents, multinational corporations are comparatively better in their reporting behaviour than local corporations. Below are some of the comments submitted by respondents:

> I don"t think there is much underreporting in LTU multinational corporations, except over the issue of transfer pricing. (Respondent 12)

> Large foreign corporations comply, if not fully at least nearly fully. They have some subtle non-compliance; the local ones commit very crude non-compliance. (Respondent 22)

> Tax compliance by the multinational corporations is high. Among the others, the publicly traded are better. Privately owned run by the family members have poor tax compliance. (Respondent 3)

> Among the large corporations, multinationals and publicly traded are comparatively good in tax compliance. My only headache is the local big manufacturing. (Respondent 2)

The fact that the manufacturing corporations emerge as the best compliers in payment compliance may be due to the fact that the tax burden for this group of taxpayers is low. Manufacturing corporations are charged tax at a rate of 27.5% (see Table B.10, Appendix B).

It is the lowest of all corporate tax rates. The corporate tax rate for manufacturing corporations whose shares are not traded publicly is 37.5%. The latter tax rate can be even lower if a manufacturing corporation declares dividends of more than 10% in a year. Collected data shows that 63% of manufacturing corporations are charged at the marginal tax rate of 27.5%. Another reason may be that most manufacturing corporations are likely to export their products, and hence may be able to gain from transfer pricing manipulation. But for finance sector corporations the marginal tax rate was 45% in tax year 2008-2009, which may have created a huge tax burden for those that reported and paid taxes properly.

5.5.5 Corporate Sector Characteristics and Tax Compliance

The previous section made an assessment of tax compliance performance by corporate demographic features. This was conducted in line with the questions raised in sections 3.4.2 and 3.12.3. The question is which of the demographic features should to be taken as the most appropriate context variable for the study, and why? This thesis found corporate sector characteristics to be the most fitting context, based on respondent observations and statistical analysis. To start with, the following observations of the respondents are worth mentioning:

> Large corporate tax compliance issues differ across corporate sector. Most manufacturing sector large corporations make more than one audit report to fulfil compliance requirements to different government and non-government bodies. The in-house accounts departments of the manufacturing are understaffed or ill-staffed. Banks and finance sector large corporations have strong in-house accounts departments and most taxes are withheld at source. (Respondent 4)

> Banking and leasing sector large corporations are much better than other large corporate taxpayers. There is usually no underreporting on the income side of their audit reports and they file returns on time. What they do is to inflate expenses to reduce net profits. Even inflating expenses is sometimes very difficult for the tough monitoring they have to undergo from central banking regulations. (Respondent16)

> Tax non-compliance by manufacturing sector large corporations is greater than that by others. They have a lot of scope, for example, inventory valuation, which is linked with the cost of goods sold and thus the profit of the corporation. Underreporting of income not only helps in paying less tax, it also helps in paying less advance tax for the upcoming year. Large corporations are basically tax evaders, except the banking

sector corporations due to the heavy control and regulation of the central bank. (Respondent 2)

Tax compliance issues differ between financial and manufacturing sector corporations. Banks are charged at a rate of 45% and manufacturing corporations at a rate of 27.5% to 37.5%. The tax rate for a manufacturing corporation is even different for corporate ownership pattern, for their sector affiliation and for whether a dividend is declared or not. (Respondent 3)

Unequal tax laws within and between the sectors create many of the tax compliance issues. In our tax system, the agriculture and transport sectors are basically tax exempt and there are many large corporations in these. When a sector is fully exempt or partially exempt from taxes like this, the burden falls on others, and the obvious reaction is non-compliance. (Respondent1)

The common thread of the respondents" arguments is that, due to differences in the regulatory frameworks that governs the large corporations, the level and nature of their tax compliance may vary widely. The respondents attributed a vertical inequality of tax burden and discriminatory tax laws among different sector regimes as the major concerns for large corporate tax compliance. They argued that burdening a particular segment of taxpayers with an unreasonable share of the tax bill might be a reason for non-compliance.

To take corporate sector as context variable for the study, apart from the arguments presented above, logit models were run to see how the number of significant coercive and persuasive instruments changed when the effect of corporate sector and other potential context variables i.e., local versus multinational corporations, or public versus private ownership were considered (see section 6.3.2). The other strong reason for corporate sector to be an important context is that the tax compliance database in the LTU is maintained on the basis of corporations" sector association.

5.6   Chapter Conclusion and Summary

This chapter has measured the level of tax compliance achieved by the sample corporations, dividing tax compliance into three segments: filing, reporting and payment. As revealed in

section 5.5, large taxpayers achieved their highest level of compliance in filing (84.41%), followed by payment (75.32%) and reporting (53.89%) compliance. The overall compliance, measured by totalling these three components, was 37.01% (sections 5.5.1 and 5.5.2). The effect of appeals was considered in measuring compliance (section 5.4.3). The appeals process is lengthy and weighted against appellants, of whom only a few get a favourable judgment. To get insights into the nature of compliance and to identify the appropriate context variable, corporate demographic features were reviewed (section 5.5.4). The finance sector was found to achieve the highest compliance in tax return filing (91.25%), while the manufacturing and service sectors achieved the highest compliance in payment (83.72%) and reporting compliance (67.74%), respectively. In overall terms, manufacturing sector corporations were the top compliers (44.18%). Respondent observations showed that corporate sector was the most relevant context variable. In the next chapter, we shall discuss the analysis done to find out which instruments, coercive or persuasive, might be more relevant in explaining the level of tax compliance reached by large corporate taxpayers.

CHAPTER VI

SIGNIFICANCE OF COERCIVE AND PERSUASIVE TAX COMPLIANCE INSTRUMENTS

6.1 Introduction

The previous chapter discussed how the tax compliance achieved by LTU large corporate taxpayers was measured. It showed that tax compliance is comprised of three components, filing, reporting and payment and these three together make up overall compliance. It showed that the taxpayers were most compliant in their filing obligations and the least compliant in reporting. Against the backdrop of the above findings, the objectives of this chapter are twofold. The first is to find out which are the significant tax compliance instruments for the achieved tax compliance. This will answer the second and the third research sub-questions (see research questions in section 3.2). To gather evidence on how the selected instruments of coercion and persuasion (see section 3.3) contribute to tax compliance, empirical support will be obtained from data collected through questionnaire survey and tax office records. The statistical relationship between the achieved level of tax compliance and the instruments that brought it about will be examined by binary logistic regression. To measure the influence of context on compliance instruments (e.g., predictors), CHAID algorithm and multilevel logistic regression will be used (discussed at length in 3.12.3). The second objective of this chapter is to determine the relative contributions of the instruments. The comparative positions of the odds ratios for the predictors, along with their level of significance, will show whether coercive or persuasive tax instruments are stronger in managing compliance issues.

This chapter is divided into five sections. In section one, instruments affecting filing compliance will be analysed. Section two will look at the instruments affecting reporting

compliance. Section three will examine the instruments affecting payment compliance. And in section four, instruments affecting overall tax compliance will be investigated. Each section will begin by presenting descriptive statistics from ranked questions followed by logistic regression, CHAID and multilevel logistic regression. Finally, the chapter conclusion will be presented in section five with a particular focus on the relative importance of the selected instruments.

6.2   Important Instruments for Filing Compliance

The tax compliance process begins with filing compliance. As seen in chapter 5 above, 84.41% of large corporations were filing compliant (section 5.5). To determine the relative importance of the instruments, this section begins by constructing a rank of choices of the survey respondents. The question specifically asked respondents to rank the instruments of coercion and persuasion in order of their importance for inducing tax compliance. The type of question asked here was different from those asked for measuring the predictors, for example taxpayer service or penalty; in the latter case, questions were asked on a scale, in particular a Likert-type scale. To determine the ranking of the instruments for filing compliance, the question asked was (see question 6 in the questionnaire in Appendix C): *To ensure the timely submission of tax returns, how much would each of the following contribute (i.e., penalty, audit, imprisonment, taxpayer service quality, simplified tax law and mutual understanding)?* To answer the question, respondents were to rank the most important instrument as 1, the least important as 6, and the rest in numerical order, with no equal ranking allowed.

According to their ranking (Table B.2, Appendix B), tax penalty was as the best instrument (68/154) = 44.15% for inducing filing compliance. Simplified tax law (25.34%), mutual understanding (16.23%) and taxpayer service quality (7.14%) came out as the next best instruments. In the ranking, tax audit and imprisonment were found to have a minimal

contribution on filing returns. Seen from the perspective of corporate sector affiliations, $(26/43) = 60.45\%$ of manufacturing and $(35/80) = 43.75\%$ of finance sector corporations rank tax penalty as more important than other instruments for achieving filing compliance. Only $(7/31) = 22.58\%$ of service sector corporations rank tax penalty as the most effective option. The majority of service sector corporations (31.03%) view simplified tax law as the best option to improve filing compliance. However, there are almost equal numbers of finance sector corporations (26.25%) and manufacturing corporations (20.93%) who view simplified tax law as the least favourable choice for improving filing compliance.

A basic description such as that above provides a simple, primary, yet valid, indication of the instruments affecting filing compliance. But what might the results look like using intensity scales? Johnson (2010:122) argues that, "to capture a range of feelings … ranking questions should be replaced with intensity scales." In the next section, the instruments of coercion and persuasion are measured on Likert-type scales. The purpose is to see whether any of the instruments are statistically significant.

It should be noted that these same measurement techniques and stages are to be applied for finding the important instruments that affect reporting, payment and overall compliance.

6.3 Logistic Regressions: Variables, Scales and Estimations

Binary logistic regression was performed to determine the significant predictors for filing compliance. The predictors included 16 dummy variables [11] which represented five categorical variables like tax penalty, imprisonment, taxpayer service quality, mutual understanding and simplified tax law and one continuous variable like tax audit. All the

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[11]Multicollinearity was checked by using VIF and the cut-off value of VIF was 5 (Hutcheson and Sofroniou, 1999; Menard, 1995). The values of VIF ranged from 1.041 to 1.257, and therefore all the 16 predictors were included in the analysis. In running the model, enter method was followed.

variables here, other than tax audit, were measured on a five-point Likert-type scale. For example, taxpayer service was measured with the following question with five answer points (see question 10 in the questionnaire in Appendix C): *The quality of taxpayer service provided to large corporate taxpayers by the LTU is – very good, good, fair, poor or very poor.* However, in consideration of the sample size of the study, the measurement categories were subsequently collapsed from five into three. The reliability and validity of this measurement have been discussed previously in section 5.3.

In the logit models, each of these predictors takes on three categories and is valued at from 1 to 3. Observations scaled 1 for the predictors – e.g., taxpayer service quality and mutual understanding – would mean "very good". A value of 2 would mean "good" and 3 "poor". For predictors like simplified tax law, tax penalty and imprisonment, a value of 1 would mean "agree with", a value of 2 would mean "undecided" and 3 "disagree with" the usefulness/effectiveness of the compliance instruments. The other predictor, tax audit, is a continuous variable[12]. The eight control variables were put in the model to nullify the confounding effect.

6.3.1 Results and Interpretations of Logistic Regression

The results showed that the logit model was statistically significant, χ^2 (16, N =154) = 47.78, p = .001 compared to the null model. The fitness of the model improved from the baseline model (-2 LL = 116.54) to the intended model (-2 LL = 66.44). The model explained between 49.3% (Cox and Snell R Square) and 52.0% (Nagelkerke R square) of the variance in filing compliance. It correctly classified 96.6% of large corporations who filed tax return on time

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[12]Tax audit data collected from LTU records were found to be highly skewed (skew = 6.509, SE = .195, kurtosis = 50.138, SE = .389) as there were audit adjustments from zero to several million dollars. To make the distribution normal, I log transformed the distribution through common (log to the base 10). I added 1 to all audit adjustments before doing the transformation, as there were zeros. Post log transformation values (skew = -.082, SE =.195, kurtosis= -1.847, SE =.389) of the diagnosis statistics were found satisfactory.

and 60.0% of corporations who did not with an overall success rate of 91.3% in the classification. Table 6.1 below shows the B coefficients, Wald χ2, significance levels, and Exp (B) of the predictors, which are interpreted as follows.

First, when the usefulness of tax penalty is dummy coded into "agree" and "undecided", by setting "disagree" as the reference group, there is significant difference in the filing compliance between those taxpayers agreeing and those disagreeing on its usefulness (β = 3.204, Wald χ2 = 7.429, p = .041, odds ratio = 24.642). The odds ratio implies that large corporations agreeing that tax penalty is useful are 24.64 times more likely to be filing compliant than those disagreeing. There is also significant difference between large corporate taxpayers who are undecided and those who disagree as regards the usefulness of tax penalty (β = 3.080, Wald χ2 = 7.099, p = .008, odds ratio = 21.75).

The odds ratio indicates that taxpayers who are undecided about the usefulness of tax penalty are 21.75 times more likely to file their tax return on time than those who disagree. This result is evidence that large corporate taxpayers who agree or are undecided about the usefulness of LTU tax penalty are more likely to be filing compliant than those who are not.

Table 6.1: Logistic regression outputs on filing compliance

Compliance instruments	Categories	β	Wald χ2	Stand. Error	Sig.	Exp(β)
Coercive instruments						
	Agree	3.204	7.429	1.176	.041*	24.642
Tax penalty	Undecided	3.080	7.099	1.156	.008**	21.756
	Disagree	0	.	.	.	1
Tax audit		.543	7.534	.198	.006**	1.721
	Agree	-.098	0.007	1.168	.933	.906
Imprisonment	Undecided	1.945	1.865	1.424	.172	6.996
	Disagree	0	.	.	.	1
Persuasive instruments						
	Very good	-1.683	1.447	1.399	.229	.186
Taxpayer service	Good	.337	0.056	1.422	.813	1.400
	Poor	0	.	.	.	1
	Agree	-2.765	2.051	1.931	.152	.063
Simplified tax law	Undecided	-2.781	1.649	2.165	.199	.062
	Disagree	0	.	.	.	1
	Very Good	-1.628	1.320	1.417	.251	.196
Mutual understanding	Good	-.898	0.518	1.247	.472	.407
	Poor	0	.	.	.	1
Constant		9.84				
Overall model evaluation						
χ^2		47.785			.001**	
-2 Log likelihood (baseline)		116.548				
-2 Log likelihood (intended)		66.426				
Cox & Snell R^2		.493				
Wald test		53.87			.000**	
Nagelkerke R square		.520				
Goodness of fit test						
Hosmer&Lemeshow		9.722			.285	

Notes:
Enter method was followed
*Significant at the 0 .05 level
**Significant at the 0 .01 level

$$ln(prob_{FilCom}/1\text{-}prob_{FilCom}) = \beta_0 + \beta_1 TaxPen + \beta_2 TaxAud + \beta_3 Imprison + \beta_4 TaxServ + \beta_5 TaxLawSimp + \beta_6 MutUnd + \beta_7 CorSiz + \beta_8 CorOwn + \beta_9 Corloc + \beta_{10} CorpSect + \beta_{11} MarTaxRate + \beta_{12} EmpSal + \beta_{13} CorAge + \beta_{14} TaxAdv$$

Where:

$Prob_{FilCom}$	*- Probability of filing compliance*
TaxPen	*- Usefulness of tax penalty*
TaxAud	*- Tax audit adjustment*
Imprison	*- Effectiveness of imprisonment*
TaxServ	*- Quality of taxpayer service*

TaxLawSimp   - Simplified tax law
MutUnd   - Mutual understanding
CorSiz   - Total assets of large corporation
CorOwn   - Ownership pattern
CorLoc   - Locational identity - local or multinational
CorpSect   - Sector affiliation - finance, manufacturing or service
MarTaxRate   - Marginal tax rate
EmpSal   - salary paid to the employees
CorAge   - Age of incorporation
TaxAdv   - Nature of tax advisor appointed

Second, when the tax audit adjustment of large corporate taxpayers is taken as a predictor, there is significant difference in filing compliance (β = .543, Wald $\chi2$ = 7.534, p = .006, odds ratio = 1.721). This shows that a 1 percent increase in audit adjustment yields a .54 percent increase in the probability of filing compliance.[13] This finding suggests that corporations who are audited and found to have adjustments are likely to be more filing compliant than those who are not found to have any audit adjustments.

Third, when the effectiveness of imprisonment is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, no significant difference is found between the filing compliance of those corporations "agreeing" and those "disagreeing" with its effectiveness (β = -.098, Wald $\chi2$ = .007, p = .933) or between taxpayers "undecided" and those "disagreeing" (β = 1.945, Wald $\chi2$ = 1.865, p = .172). This means that imprisonment measures, whether effective or not, do not affect the filing compliance of large corporate taxpayers.

Fourth, when the quality of taxpayer service is dummy coded into "very good" and "good", by setting "poor" as the reference category, there is no significant difference in the filing

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[13]In a logit model, where a predictor is log transformed, we interpret "the coefficient (without transformation) as a percentage change for a 1 percent increase in the covariate in its original metric" (Allison, 2010:214). Since tax audit adjustment is log transformed, the coefficient .543 is interpreted as a percentage change for a 1 percent change in tax audit adjustment.

compliance of those large corporations scaling taxpayer service quality as "very good" and those scaling it as "poor"(β = -1.683, Wald $\chi2$ = 1.447, p = .229). There is also no significant difference between those taxpayers scaling taxpayer service quality as "good" and those scaling it as "poor" (β = .337, Wald $\chi2$ = .056, p = .813).This indicates that taxpayer service quality does not affect the filing compliance of large corporate taxpayers.

Fifth, when simplified tax law is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, no significant difference is found between those taxpayers "agreeing" and those "disagreeing" on tax law simplicity (β = -2.766, Wald $\chi2$ = 2.051, p = .152). The same finding applies to those taxpayers who are "undecided" and those "disagreeing" on the simplicity of the tax law (β = -2.781, Wald $\chi2$ = 1.649, p = .199). This means that simplified tax law does not affect the filing compliance of large corporate taxpayers.

Sixth, when the level of mutual understanding is dummy coded the same as taxpayer service quality, there is no significant difference in the filing compliance of those large corporations scaling it as "very good" and those as "poor" (β = -1.628, Wald $\chi2$ = 1.320, p = .251) or between those scaling it as "good" and those as "poor" (β = -.898, Wald $\chi2$ = .518, p = .472). This indicates that mutual understanding does not improve return filing.

As this shows, two predictors, tax penalty and tax audit, are statistically significant to filing compliance. Both the predictors have a positive influence on filing compliance. The statistical significance of the logistic regressions is generally consistent with the story told by the respondent ranking, where penalty and audit were found important. However, no persuasive instrument emerged as important for filing compliance in the logit model. This suggests the necessity for further analysis to find out whether persuasion might have any role in improving filing behaviour.

6.3.2 Penalty and Audit: Are They the Only Instruments to Influence Filing Compliance?

The logit model shows that penalty and audit are important to filing compliance. However, it is difficult to claim that they are the only predictors without further analysis being done to check this finding. This thesis has argued (see section 3.12.3) that CHAID analysis can be applied over the logit models to explore whether any segment of the outcome variable is fully or partially influenced by any segment of a predictor. The CHAID model also enables us to estimate the influence of the context variable by extracting hidden predictive information in the form of a multilevel tree structure. The reasons for choosing corporate sector as the context variable have been discussed in section 5.5.5. The main argument was developed from elite interviews and the fact that large corporations are clustered according to their sector affiliation. These arguments were bolstered by comparing the logit output derived "with" and "without" the three contending context variables: ownership pattern, corporate location and sector affiliation.

As reported in Table B.6, Appendix B, the logit models were first run with all the predictors and control variables. Second, the models were run removing the variable on corporate sector. Third, the models were run dropping the variable on ownership pattern, and finally dropping corporate location. Comparing the models it was found that the impact, in terms of the number of significant predictors, of removing the variable on corporate sector was higher than removing the other two. When the corporate sector variable was taken out, penalty, imprisonment and simplified tax law were found not to be statistically significant for filing, payment and overall compliance respectively. When location was taken out of the model, taxpayer service and simplified tax law became insignificant to overall compliance. No changes were found with respect to the significant predictors when ownership pattern was removed from the model. Therefore, sector affiliation is taken as the context variable.

6.3.3 CHAID Models

Two predictors, marginal tax rate (p = .014, $\chi 2$ = 6.03) and mutual understanding (p = .024, $\chi 2$ = 6.31), are found to be significant to filing compliance in the CHAID model[14]. According to this model, marginal tax rate is the best predictor of filing compliance, which is taken as a control variable in the model. Mutual understanding is a significant variable when the marginal tax rate is charged at the rate of 45%. When the marginal tax rate is charged at a lower rate (27.5% to 37.5%), it does not appear to be significant any more. In the CHAID model (Figure 6.1 below), mutual understanding is placed at the second stage as a terminal code[15].

As the model shows, 77% of large corporations charged at this tax rate are filing compliant. For the 45% marginal tax rate (e.g., mainly charged on finance corporations), the percentage of filing compliant taxpayers is much higher (91.2%), which supports our findings in section 5.5.4. Again large corporations who are given a tax rate of 45% and who think that mutual understanding is "very good" are 95.5% compliant with their filing obligations. But filing compliance falls to 71.4% when large taxpayers think that mutual understanding is not very good.

When corporate sector is used as an influence variable[16] in the model, it neither takes other predictors as significant nor drops any predictor as insignificant.

Risk estimates[17] (see Table B.7 in Appendix B) in both the models (with and without corporate sector) are .156, which implies that in 15.6% cases, the categories predicted by the

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[14]In all cases likelihood criteria with child node 10 and parent node 25 have been used and have been compared with Pearson criteria. Cross-validation has been used when no influence variable is used.

[15]A node is terminal when it does not take any further variable as significant and ends in itself.

[16] Corporate sector is taken as an influence variable to define its influence on the tree-growing process.

model are wrong. In other words, as the classification table[18] (see Table B.8 in Appendix B) shows, the model classifies 84.4% of the filing compliance cases of large corporate taxpayers correctly. The classification table also indicates that it predicts 100% of filing compliant corporate taxpayers correctly; meaning none of the filing compliant large corporate taxpayers is misclassified as non-compliant. The gain[19], as shown by the target category of the gains chart (Figure 6.2), indicates that the model is fairly good. It starts from 0% and ends at 100% and finally levels off smoothly.

Figure 6.1: CHAID model showing significant predictors for filing compliance

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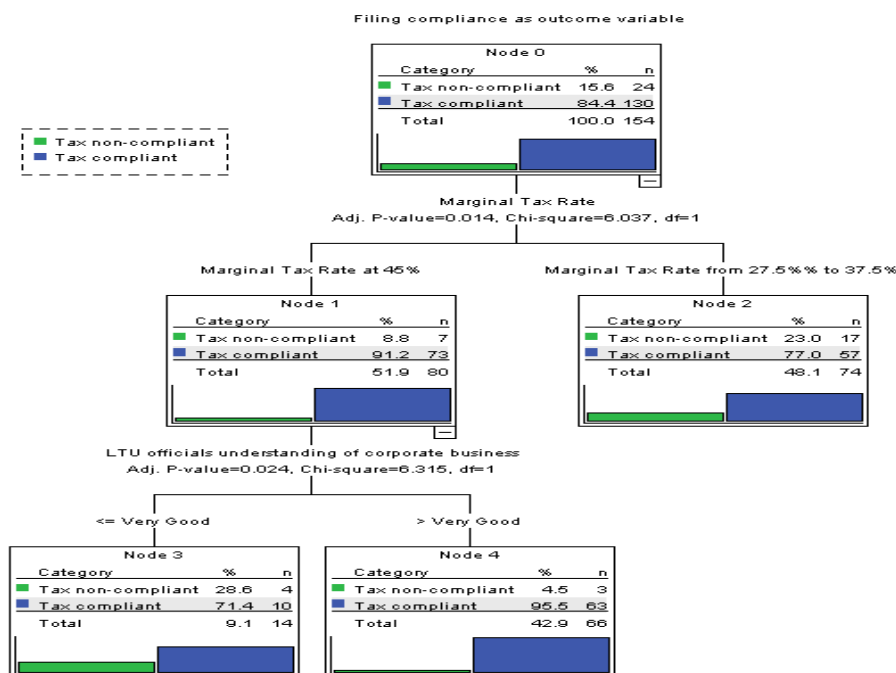
[17] In CHAID models, risk estimates show cases in which the predicted category may be wrong. In other words, they refer to the risk of misclassifying a large corporate taxpayer as non-compliant who should rather be compliant, or vice versa.

[18] The classification table is the opposite of the risk estimate, which shows the extent to which outcomes are classified correctly.

[19] Gain refers to the number of cases in the terminal node of the target category, whereas the gain chart indicates the fitness of the model. A gain chart starting at 0% and ending at 100% with a steep rise towards the end signifies a good model. A diagonal reference line means that the model has failed to provide any information about the fitness of the model.

Figure 6.2: Gains summary of the fitness of the CHAID model on filing compliance

Target Category:Tax compliant

Growing Method:CHAID

Dependent Variable: Filing compliance as outcome variable
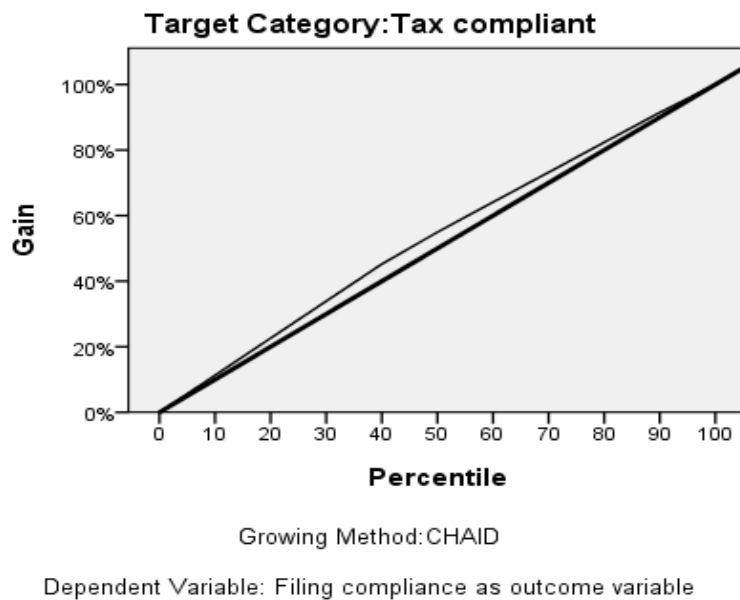
The CHAID model has shown the impact of corporate sector on the tree growing process. However, it cannot specify the all-sector and the unique sector effects of the influence variable on the significant instruments. These specifications can provide an approximate description of within and between sector influences of corporate sectors on the significant compliance instruments. In the language of contextual effects literature, they show whether the estimated significance and the odds are individual or compositional in nature (Reardon et al., 2002). For this purpose, multilevel logistic regression is used. Unlike the standard logit model, where the unit of analysis was large corporate taxpayers, these models consider corporate sector as the unit of analysis[20]. Also, these models use sector level aggregate measurements. That is, such models, for example, will use the mean filing compliance of corporate sector instead of that of individual large corporations as the outcome variable. In

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[20]The coefficients in the standard logit model that originate from a probability distribution are considered fixed, but in the multilevel regression those coefficients are treated as random (Kreft and Leeuw, 1998).

the case of predictors, for example tax audit, the sector mean of tax audit will be used as the predictor variable.

6.3.4 The Impact of Corporate Sector on Filing Compliance: Fixed and Random Effects Models

First, the fixed effects logistic regression was estimated to understand the within-group effects of the context variable (i.e., corporate sector), and the random effects logistic regression was conducted to see the across- or between-group effects of the context variable (Stata Corp, 2011; Hamilton, 2008).These showed whether the standard logit model had under- or over-estimated the effects of the compliance instruments by not taking into account the effect of clustering the corporations in different corporate sectors (Cho, 2003; Guo and Zhao, 2000). To specify the variance-covariance matrix (VCE) corresponding to the parameter estimates, and to identify misspecification problems, jackknife estimation was applied. Jackknife, also called jknife, is a replication-based estimation procedure that calculates the statistic in question, omitting one of the observations from the dataset each time the test is repeated (Mooney and Duval, 1993; Mosteller and Tukey, 1977).This estimation could also be done by the bootstrap technique, but the attempt to obtain the estimations through bootstrap was unsuccessful.

In the fixed effects logistic regression, tax penalty (p = .008, CI = 95%, odds ratio = .048) and tax audit (β =.516, p = .007, CI = 95%, odds ratio = 1.67) appeared statistically significant[21], in line with the standard logit models (see Table 6.2). But the standard logit model overestimated the effects of both tax penalty and tax audit on filing compliance. Such overestimation for tax audit, within the corporate sectors, was (.54%-.51%) = .03%; and for

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[21]A quadrature check at 12 points was done for the above and all other xtlogit models. It showed that none of the coefficients changed by more than a relative difference of 10-4 (0.01%), thus the choice of quadrature points does not significantly affect the outcome, and the result may be confidently interpreted.

tax penalty it was (24.64-20.83) = 3.81 units. Variance-covariance estimations (VCE) done through the jackknife approach were compared with the fixed effects parameters and were found consistent (Tax penalty, p = .008, CI = 95%, odds ratio = .037 and Tax audit, β =. 423, p = .012, CI = 95%). The jackknife standard error for tax penalty was .167 and for tax audit it was .117; and the logit model standard errors for them were 1.176 and .198. The logit model standard error for tax penalty was $(.167/1.176)^2 = .020$ of the size of jackknife standard error, and the logit standard error for tax audit was $(.117/.198)^2 = .349$ of the size of jackknife standard error. In both cases the difference was not high and was thus acceptable (Biemer, 2011).

Table 6.2: Results obtained when fitting fixed and random effects logistic regression to filing compliance data

Compliance instruments	Fixed effects logistic regression					Random effects logistic regression			
	Cat.	Exp β	Sig.	SE***	Jknife S E	Exp β	Sig.	S E	Jknife S E
Coercive instruments									
Tax penalty	Agree	.048	0.008**	.055	.167	.067	.011*	.071	.036
	Undecided	.900	0.917	.907	.	.834	.854	.817	.
	Disagree	1	.	.	.	.	.	.	.
Tax audit		1.676	0.007**	.321	.117	1.494	.009**	.229	.160
Imprisonment	Agree	1.077	0.948	1.232	1.418	1.089	.938	1.200	.063
	Undecided	6.939	0.059*	7.127		4.873	.109	4.757	.
	Disagree	1	.	.	.	.	.	.	.
Persuasive instruments									
Taxpayer service	Very good	4.902	0.246	6.714	3.123	5.540	.208	7.526	2.646
	Good	6.830	0.058*	6.914	.	4.930	.085	4.568	.
	Poor	1			.				
Simplified tax law	Agree	14.229	0.160	26.915	2.068	5.024	.247	7.005	1.244
	Undecided	.988	0.994	1.437	.	.8940	.938	1.293	.
	Disagree	1	.	.	.	.	.	.	.
Mutual understanding	Very good	4.828	0.259	6.734	1.673	7.487	.130	9.966	.233
	Good	2.024	0.374	1.606	.	2.307	.287	1.812	.
	Poor	1	.	.	.	.	.	..	.
Constant						.657			

Model fitness and variance components

$LRChi^2$,re		20.82	.014	
-2LL, re		-34.793		
$\sigma^2 v$, re		-14.47		
Rho, re		1.57e-07		
Rho, Jknife		1.66e-07		

Notes:
*Significant at the 0.05 level
**Significant at the 0 .01 level
***Standard errors reported in the table are the square root of the variances of the VCE
Likelihood-ratio test of rho=0: chibar2 (01) = 0.00, Prob >= chibar2 = 1.000

The results showed that the random effects logit model was statistically significant, LRChi2 = 20.82, p = .014, and at least one of the predictors" regression coefficient was not equal to zero. The fitness of the model improved from the baseline model (-2 LL = -57.105) to the

intended model (-2 LL = -34.793). The panel level or corporate sector level variance (sig2u or $\sigma 2v$) was -14.47, and the proportion of the total variation accounted for by the random effect (e.g., rho, or intraclass correlation coefficient[22]) was 1.57e-07. Since the value of rho was not zero, the panel level variance component was important, and was different from the standard logistic regression (Stata Corp, 2011). The improvement in the proportion of the contribution to the sector level variance made by the intraclass correlation coefficient (rho = 1.66e-07, CI = 95%), as shown by jackknife estimations, reinforced the importance of corporate sector as a context variable[23.]

Both tax penalty (p = .011, odds ratio = .067) and tax audit (β = .402, p = .009, odds ratio = 1.49) were statistically significant in the random effects logistic regression. But tax penalty was significant only for those taxpayers who agreed that it was useful, as compared with those who did not. The percentage increase in filing compliance for a 1% increase in tax audit fell to .40%, which was .54% in the logit model. For penalty, the odds ratio fell to 14.92, which was 24.64 in the logit model. This showed that the standard logit models overestimated the effects of both predictors. In the jackknife estimations, however, only tax penalty was found to be significant (p = .015 CI = 95%, odds ratio =). The jackknife standard error for tax penalty was .036 and for tax audit it was .160. The logit standard error for tax penalty was $(.036/1.176)^2$ =.000 of the size of jackknife standard error, and for tax audit it was$(.160/.198)^2$ = .652 of the size of jackknife standard error. In both cases the difference was very small and was thus acceptable.

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[22]Intraclass correlation measures the degree to which corporations share common experiences (Kreft and Leeuw, 1998). A high intraclass correlation means that corporations are likely to share common experiences. It can also be called a measure of the homogeneity of the corporations in a group or of the proportion of total variability due to corporate sector affiliation (Kreft and Leeuw, 1998).

[23]For comparison purpose, An ANOVA based within and between sector variance components along with intraclass correlation has been placed in Appendix A, point C.

6.4 Section Summary

Several statistical tests were conducted to obtain accurate estimates of the predictors"

significant to filing compliance. Three instruments – tax penalty, tax audit and mutual

understanding – emerged as significant to filing compliance. Although marginal tax rate was

found to be significant, it is not considered here as it was taken as a control variable in the

models. Throughout the tests, tax penalty and tax audit were statistically significant, which

tends to suggest that tax penalty and tax audit are the most significant predictors of filing

compliance. Clearly, two instruments belong to the coercive and one to the persuasive

category. This means that the role of coercive tax instruments is comparatively high in

achieving large corporate filing compliance.

6.5 Important Instruments for Reporting Compliance

It was found that 53.89% of large corporations were reporting compliant (section 5.5.1). To

construct the ranking for reporting compliance, respondents were asked to answer the

following questions (Q7): *To ensure timely declaration of full income, how much would each

of the following contribute (i.e., the six instruments)*? It showed that tax penalty and taxpayer

service quality dominated in their ranking (see Table B.3, Appendix B). Of large corporate

taxpayers, 35.71% view penalty as the first choice as a weapon against reporting non-

compliance. However, respondents who think tax penalty could be the second (15.58%), third

(11.68%) or fourth (12.33%) choices for creating reporting compliance are almost equal in

number. As far as taxpayer service is concerned, 11.03% of taxpayers think it to be the best

option to improve reporting compliance. But tax audit, which is meant to be the major

instrument to combat reporting non-compliance, is not well viewed as an option for inducing

reporting compliance. Only 8.44% of large corporate taxpayers think that tax audit could be

an effective tool for improving reporting compliance. Other instruments are found to make little contribution on reporting compliance.

Sector-based comparison of ranked items shows that 48.83% of manufacturing and 35.00 % of finance sector corporations rank tax penalty as more important than other instruments. In choosing their second option, 28.75% of finance and 25.58% of manufacturing sector corporations rank mutual understanding as a means of improving reporting compliance. For service sector corporations, the best option for improving reporting compliance is simplifying tax law (35.48%) followed by mutual understanding (22.58%) and taxpayer service (22.58%). For service sector corporations, tax penalty is the fourth option (19.35%) for making reporting compliance better, and tax audit is even less preferred (3.22%) as an instrument. The next section pursues a regression analysis based on measurement of these instruments on Likert-type scale.

6.6 Logistic Regression Estimates of Reporting Compliance

The results showed that the model was statistically significant, χ^2 (16, N =154) = 142.39, p = .000 compared to the null model. The fitness of the model improved from the baseline model (-2 LL = 190.84) to the intended model (-2 LL = 48.44)[24.] The model explained between 64.4% (Cox and Snell R Square) and 85.9% (Nagelkerke R square) of the variance in reporting compliance, and it correctly classified 89.0% of the large corporate taxpayers who reported their due taxes on time and 92.3% of the taxpayers who did not report on time, with an overall success rate of 90.6% in the classification. Table 6.3 shows B coefficients, Wald $\chi 2$, significance levels, and Exp (B) by predictors, and the results are interpreted below.

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[24]Multi-collinearity was checked by using VIF, and the cut-off value of VIF was 5 (Hutcheson and Sofroniou, 1999; Menard, 1995). The values of VIF ranged from 2.03 to 3.25, and therefore all 16 predictors were included in the analysis. In running the model, enter method was followed.

Table 6.3: Logistic regression outputs on reporting compliance

Compliance instruments	Categories	β	Wald χ2	Stand. error	Sig.	Exp (β)
Coercive instruments						
	Agree	1.238	1.249	1.108	.264	3.450
Tax penalty	Undecided	.820	0.523	1.133	.470	2.270
	Disagree	0	.	.	.	1
Tax audit		-.358	17.81	.436	.000*	.699
	Agree	.267	.036	1.400	.849	1.306
Imprisonment	Undecided	1.371	.754	1.579	.385	3.940
	Disagree	0	.	.	.	1
Persuasive instruments						
	Very good	-2.240	1.851	1.647	.174	.106
Taxpayer service	Good	-3.007	3.485	1.611	.062	.049
	Poor	0	.	.	.	1
	Agree	-.433	.122	1.241	.727	.648
Simplified tax law	Undecided	-4.612	2.222	3.094	.136	.010
	Disagree	0	.	.	.	1
	Very good	.129	.005	1.870	.945	1.138
Mutual understanding	Good	1.054	.515	1.468	.473	2.868
	Poor	0	.	.	.	1
Constant		6.630				
Overall model evaluation						
X^2	142.396				.000*	
-2 Log likelihood (baseline)	190.845					
-2 Log likelihood (intended)	48.448					
Cox & Snell R^2	.644					
Wald Test	.463				.496	
Nagelkerke R square	.859					
Goodness of fit test						
Hosmer&Lemeshow	3.17				.923	

Notes:
Enter method was followed
Significant at the 0.01 level

$$ln(prob_{RepCom}/1-prob_{RepCom})= β_0 + β_1 TaxPen + β_2 TaxAud + β_3 Imprison + β_4 TaxServ +$$
$$β_5 TaxLawSimp + β_6 MutUnd + β_7 CorSiz + β_8 CorOwn +$$
$$β_9 Corloc + β_{10} CorpSect + β_{11} MarTaxRate + β_{12} EmpSal +$$
$$β_{13} CorAge + β_{14} TaxAdv$$

Where

Prob$_{RepCom}$ -*Probability of reporting compliance(For Equation 3.4)*

TaxPen   - *Usefulness of tax penalty*

TaxAud	*- Tax audit adjustment*
Imprison	*- Effectiveness of imprisonment*
TaxServ	*- Quality of taxpayer service*
TaxLawSimp	*- Simplified tax law*
MutUnd	*- Mutual understanding*
CorSiz	*- Total assets of large corporation*
CorOwn	*- Ownership pattern*
Corloc	*- Locational identity - local or multinational*
CorpSect	*- Sector affiliation- finance, manufacturing or service*
MarTaxRate	*-Marginal tax rate*
EmpSal	*- Salary paid to employees*
CorAge	*- Age of incorporation*
TaxAdv	*- Nature of tax advisor appointed*

First, when the usefulness of tax penalty is dummy coded into "agree" and "undecided", by setting "disagree" as the reference group, there is no significant difference in reporting compliance between those who agree tax penalty to be useful and those who disagree (β =1.238, Wald $\chi2$ = 1.249, p = .264). Also, there is no significant difference in reporting compliance between large corporate taxpayers who are undecided and those who disagree about its usefulness (β = .820, Wald $\chi2$ = .523, p = .470). This shows that tax penalty does not affect the reporting compliance of large corporate taxpayers.

Second, when tax audit adjustment is taken as a predictor, there is significant difference in the reporting compliance of large corporations (β = -.358, Wald $\chi2$ = 17.821, p = .000, odds ratio = .699). This shows that a 1 percent increase in audit adjustment leads to a .35 percent decrease in the probability of reporting compliance. This finding suggests that corporations who are audited and are found to have adjustments are likely to be less reporting compliant than those who are not found to have any adjustments.

Third, when the effectiveness of imprisonment is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, no significant difference is found in reporting compliance between those corporations agreeing and those disagreeing with the proposition (β = .267, Wald $\chi2$ = .036, p = .849) or between those undecided and those agreeing (β =

1.371, Wald $\chi 2$ = .754, p = .385). This means that imprisonment does not affect the reporting compliance of large corporate taxpayers.

Fourth, when quality of taxpayer service is dummy coded into "very good" and "good", by setting "poor" as the reference group, there is no significant difference in reporting compliance between taxpayers scaling service quality "very good" and those scaling it "poor" (β = -.240, Wald $\chi 2$ = 1.851, p = .174), or "good" and "poor" (β = -3.007, Wald $\chi 2$ = 3.485, p = .062). This indicates that taxpayer service quality does not affect reporting compliance.

Fifth, when simplified tax law is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, no significant difference is found between those taxpayers "agreeing" and those "disagreeing" on tax law simplicity (β = -.433, Wald $\chi 2$ = .122, p = .727). The same finding applies for respondents scaling it as "undecided" and those scaling it as "disagree" (β = -4.612, Wald $\chi 2$ = 2.222, p = .136). This means that simplified tax law does not affect the reporting compliance of large corporate taxpayers.

Sixth, when mutual understanding is dummy coded in the same way as taxpayer service, there are no significant differences in the reporting behaviour of respondents scaling it "very good" and those scaling it "poor" (β = .129, Wald $\chi 2$ = .005, p = .945) or those scaling it "good" and those scaling it "poor"(β = 1.054, Wald $\chi 2$ = .515, p = .473). This indicates that mutual understanding between large corporate businesses and the tax administration does not influence reporting compliance.

Tax audit emerges as the only significant predictor of reporting compliance and maintains a negative relationship with it. With an increase in audit adjustments, large corporations are likely to be less reporting compliant. The ranking schedule at the beginning of this section shows tax penalty to be the most and tax audit to be the least effective option, whereas the

logit model produces tax audit as the only significant (negatively) predictor of reporting compliance.

6.6.1 Is Tax Audit the Only Significant Predictor of Reporting Compliance?

Using the same predictors in CHAID models, it is possible to see whether tax audit is still significant for reporting compliance (see Figure 6.3). CHAID estimates demonstrate that for reporting compliance, tax audit is the only significant predictor (p = .000, $\chi2$ = 136.49). The CHAID model divides tax audit into two segments: having audit adjustments and having no audit adjustments. The category, "tax audit with adjustment", takes another variable, tax advisor, as a significant variable. This means that for large corporate taxpayers with audit adjustments, tax advisor, a control variable in the model, is a significant predictor.

Figure 6.3: CHAID model showing significant predictors for reporting compliance (without influence variable)
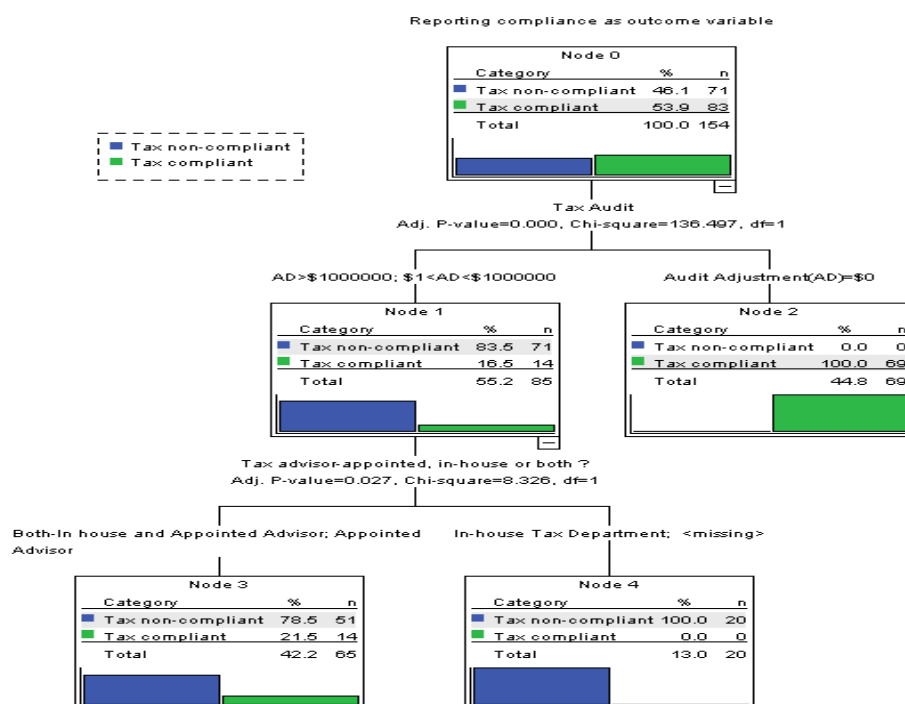
Taxpayers in this category are only marginally compliant (16.5%) with their reporting obligations. Perhaps those having audit adjustments have to hire a tax advisor to file an appeal against the additional demand created through tax audit. As is apparent from the terminal node 4 of the CHAID estimates (see Figure 6.3), large corporate taxpayers having audit adjustments and managing compliance issues by in-house tax departments are fully non-compliant. This means that salaried tax advisors working as employees of corporations might not have played any role in reporting compliance. Professional tax advisors, individually or in collaboration with an in-house tax department, can contribute towards reporting compliance. Corporations having tax audit adjustments and employing professional tax advisors and/or in-house tax departments are 21.5% reporting compliant.

Figure 6.4: CHAID model showing significant predictors for reporting compliance (with influence variable)
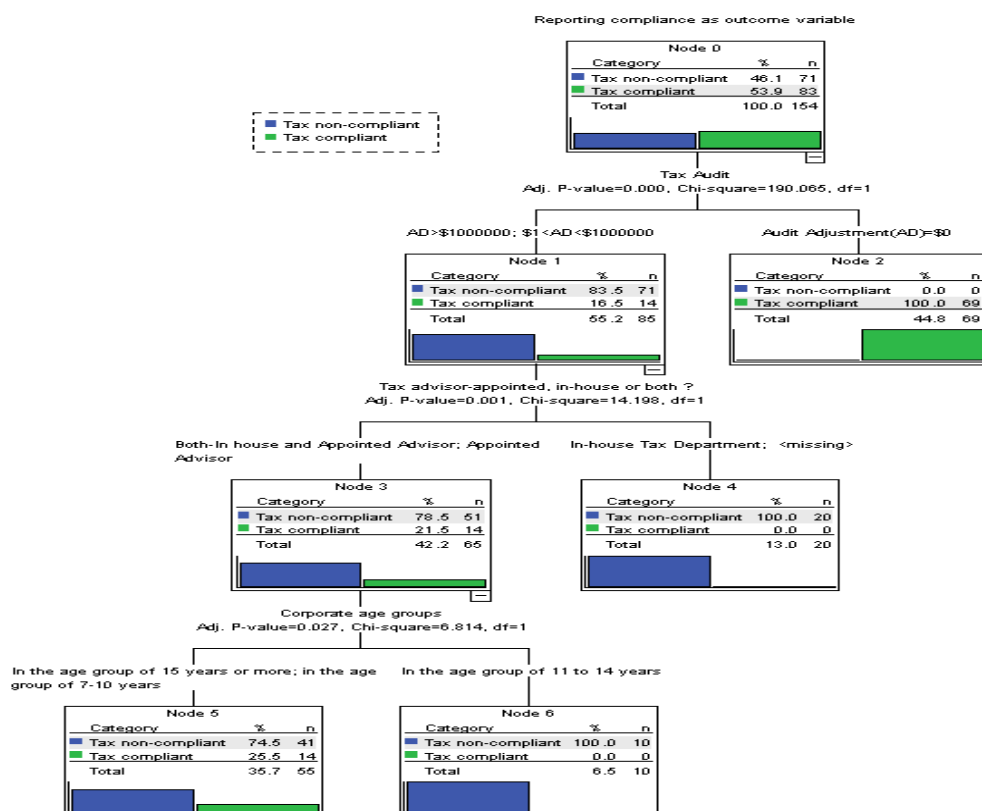
The above case, however, does not take into account the effect of sector affiliation. When sector affiliation is used as an influence variable in the model, the category "both in-house and appointed tax advisor" takes corporate age, another control variable in the model, as a significant predictor (see Figure 6.4). This means that corporations that have both in-house and appointed tax advisors and are either at the early or at the mature stage of their business incorporation are 25.5% reporting compliant if they have any audit adjustments.

Figure 6.5: Gains summary of the fitness of the CHAID model (without influence variable)
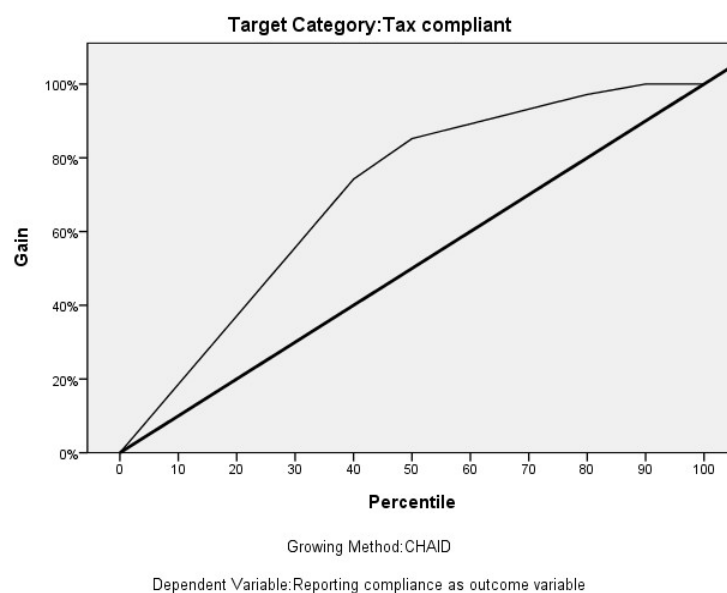
Figure 6.6: Gains summary of the fitness of the CHAID model (with influence variable)
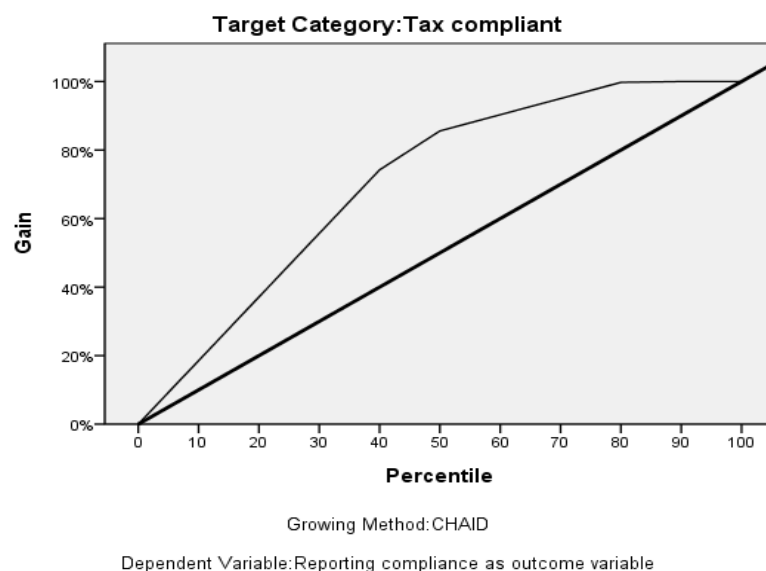
The risk estimates of .091 in both the models imply that the models classify approximately 90.9% of reporting compliant large corporate taxpayers correctly (Table B.7 in Appendix B). The classification table (Table B.8 in Appendix B) shows that it classifies 83.1% of reporting compliant corporate taxpayers correctly. The difference between the risk estimates of 90.9% and the classification of 83.1% implies that that some reporting compliant taxpayers are wrongly classified with the reporting non-compliant taxpayers. Finally, the cumulative gains chart (Figures 6.5 and 6.6 above) starts at 0% and ends slightly before 100%, showing a steep rise towards the end. As a result, both the models can be taken as fairly successful. Results obtained up to now have revealed a strong case for tax audit to be taken as a significant predictor of reporting compliance. But before confirming this, a final verification is made through fixed and random effects logistic regressions in the following section.

6.6.2 Fixed and Random Effects of Corporate Sector Affiliation on Reporting Compliance

In the fixed effects logistic regression, tax audit (β= -.692, p = 0.000, CI = 95%, odds ratio = .500) emerged as a significant predictor of reporting compliance (see Table 6.4). As seen from the sign of the coefficients, the direction of the relationship between tax audit and reporting compliance did not change in comparison to the standard logit model. But there was an increase in the likelihood of reporting non-compliance in case of tax audit from .35% in standard logit model to .69% in fixed effects model. This shows that the standard logit model underestimated the effects of tax audit on reporting non-compliance by (.69%-.35%) =.34%. However, variance-covariance estimations (VCE) done through the jack-knife approach showed that tax audit was no longer a significant predictor to reporting compliance (β =.322, p = .879, CI = 95%). The jack-knife standard error for tax audit in the fixed effects model

was .074, and for the logit model standard error it was .436. The logit model standard error for tax audit was $(.074/.436)^2 = .028$ of the size of jackknife standard error and the difference was very low.

Table 6.4: Results obtained when fitting fixed and random effects logistic regression to reporting compliance data

Compliance instruments	Fixed effects logistic regression					Random effects logistic regression			
	Cat.	Exp β	Sig.	S E**	Jknife S E	Exp β	Sig.	S E	Jknife S E
Coercive instruments									
Tax penalty	Agree	.302	.269	.327	1.561	.301	.282	.335	.142
	Undecided	.695	.721	.707	.	633	.648	.633	.
	Disagree	1	.	.	2.120	1	.	.	.
Tax audit		.500	.000*	.074	.	.463	.000*	.070	.048
Imprisonment	Agree	.760	.844	1.056	4.908	.567	.685	.792	.163
	Undecided	3.061	.263	3.057	.	3.037	.280	3.120	.
	Disagree	1	.	.	.	1	.	.	.
Persuasive instruments									
Taxpayer Service	Very good	8.943	.176	14.49	4.489	12.04	.133	19.93	.006
	Good	.504	.516	.532	.	.554	.582	.594	.
	Poor	1	.	.	.	1	.	.	.
Simplified tax law	Agree	1.589	.699	1.905	3.716	1.191	885	1.443	.228
	Undecided	.018	.142	.049	.	.017	.144	.048	.
	Disagree	1	.	.	.	1	.	.	.
Mutual understanding	Very good	.941	.974	1.712	1.64	.586	.756	1.00	.265
	Good	2.381	.70	2.933	.	2.14	.525	2.58	.
	Poor	1	.	.	.	.	.	.	
Constant						1.121			

Model fitness and variance components

LRChi², re	137.65	.000*	
-2 LL	-24.787		
σ²v, re	-14.68		
Rho, re	1.27e-07		
Rho, jknife	1.86e-07		

Notes:
*Significant at the 0 .01 level
**Standard errors reported in the table are the square root of the variances of the VCE
Likelihood-ratio test of rho=0: chibar2 (01) = 0.00 Prob >= chibar2 = 1.000

The results showed that the random effects logit model was statistically significant, $LRChi^2$= 137.65, p=.000, and none of the predictors" regression coefficient is equal to zero. The fitness of the model improved from the baseline model (-2 LL= -95.42) to the intended model (-2 LL=-24.78).The panel level or the corporate sector level variance (sig2u) was -14.68 and the proportion of total variation accounted for by the random effect (rho) was 1.27e-07. Since the value of rho was not zero, the panel level variance component was important, and was different from the standard logistic regression. The improvement in the proportion of the contribution to the sector level variance made by the intraclass correlation coefficient (*rho* = 1.86e-07, CI = 95%), as shown by jack-knife estimations, reinforced the importance of corporate sector as a context variable. Tax audit remained statistically significant in the random effects logistic regression (β= -.769 p = .000, CI = 95%, odds ratio = .463) and the percentage change in the probability of reporting non-compliance for 1% increase in tax audit adjustment increased to .76% without any change in the direction of the relationship. It implies that the standard logit model underestimated the effects of tax audit on reporting compliance. In the Jackknife estimation, however, tax audit was not found significant as it was found in the case of fixed effects logistic regression. The jackknife standard error for tax audit was .048. The logit standard error for tax audit was $(.048/.436)^2$= .012 of the size of jackknife standard error, which is very low and is acceptable.

6.7 Section Summary

In several tests, tax audit is found to be the only significant variable for reporting compliance. It has been found significant in the logit, CHAID and random and fixed effect logistic models. The other predictors found to be significant were tax advisors and incorporation age, which are used as control variables in the model and are beyond the scope of this study. In no

models does the nature of the relationship change: tax audit is found to have a negative relationship with reporting compliance. When adjustments in tax audit rise by a certain percentage, reporting compliance between and within corporations is likely to be less by a certain percentage for the cluster effect. This shows that coercive tax instruments are the only option through which the LTU can obtain the reporting compliance of large corporations. Persuasive instruments seem not to have any influence on large corporate reporting compliance.

6.8   Important Instruments for Payment Compliance

In contrast to reporting compliance, 75.32% of large corporations were found to be payment compliant (section 5.5.1). In creating the ranking schedule, the question asked was (Q8): *To ensure timely payment of all taxes, how much would each of the following contribute (i.e., the six instruments)?* Table B.4, Appendix B shows that tax penalty again surfaces as the best option (46.10%) for achieving payment compliance. Of the other options, mutual understanding (20.77%), simplified tax law (19.48%), and taxpayer service quality (7.14%) come out as the preferred choices to deal with payment compliance. Tax audit and imprisonment have a marginal effect on making taxpayers payment compliant.

Payment compliance viewed in the sector context shows that 55.81% of manufacturing and 47.5 % of finance sector corporations rank tax penalty as more important than other instruments. For the service sector, 29% of corporations rank tax penalty as the best choice. As the next important choice, 16.25% of finance, 25.58% of manufacturing and 25.80% of service sector corporations think that mutual understanding is an effective instrument to payment compliance; and there are more corporations who view understanding as the second or third option for raising payment compliance. Support for simplified tax law as a first choice is also negligible and the choice of tax audit is quite insignificant. In the next section,

like the filing and reporting compliance, the logistic regression coefficients are determined for payment compliance.

6.9   Results and Interpretations of Logistic Regression

The results showed that the model is statistically significant, χ^2 (16, N =154) = 29.74, p =.007 compared to the null model[25.] The fitness of the model improved from the baseline model (-2 LL = 154.376) to the intended model (-2 LL = 124.350). The model explained between 19.4% (Cox and Snell R Square) and 28.8% (Nagelkerke R square) of the variance in payment compliance and it correctly classified the 93.4% of large corporate taxpayers who paid their taxes on time and the 23.9% of the taxpayers who did not, with an overall success rate of 76.1% in the classification. Table 6.5, Appendix B shows the Beta coefficients, Wald χ2, significance levels, and Exp (B) of the predictors, which are interpreted as follows.

First, when the usefulness of tax penalty is dummy coded into "agree" and "undecided", by setting "disagree" as the reference group, there is significant difference in payment compliance between those large corporations agreeing that tax penalty is useful and those disagreeing (β = .891, Wald χ2 = 1.924, p = .000). Significant difference is also found between large corporate taxpayers who are undecided and those who disagree on the point of the usefulness of tax penalty (β = 1.232, Wald χ2 = 3.516, p = .051). This result demonstrates that tax penalty positively influences the payment compliance of large corporate taxpayers.

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[25]Multicollinearity was checked by using VIF and the cut-off value of VIF was 5.The values of VIF ranged from 1.286 to 4.729, and therefore all the 16 predictors were included in the analysis. Here too, when the model was run, enter method was followed.

Table 6.5: Logistic regression outputs on payment compliance

Compliance instruments	Categories	β	Wald χ^2	Stand. Error	Sig.	Exp(β)
Coercive instruments						
	Agree	.891	1.924	.642	.000**	2.437
Tax penalty	Undecided	1.232	3.516	.657	.051*	3.429
	Disagree	0	.	.	.	1
Tax audit		-.271	7.612	.098	.006**	.763
	Agree	-1.569	4.620	.730	.032*	.208
Imprisonment	Undecided	-1.107	1.660	.859	.198	.331
	Disagree	0	.	.	.	1
Persuasive instruments						
	Very good	-.514	.320	.909	.572	.598
Taxpayer service	Good	-1.021	1.432	.854	.231	.360
	Poor	0	.	.	.	1
	Agree	.449	.484	.645	.487	1.566
Simplified tax law	Undecided	-.153	.023	1.002	.879	.858
	Disagree		.			
	Very good	-.392	.239	.804	.625	.675
Mutual understanding	Good	.182	.079	.647	.778	1.200
	Poor	0	.	.	.	1
Constant		6.336				

Overall model evaluation			
χ^2	29.746		.097
-2 Log likelihood (baseline)	154.376		
-2 Log likelihood (intended)	124.350		
Wald test	32.029		.000**
Cox & Snell R^2	.194		
Nagelkerke R square	.288		
Goodness of fit test			
Hosmer and Lemeshow	7.552		.478

Notes:
Enter Method was followed
*Significant at the 0 .05 level
**Significant at the 0 .01 level

$$ln\ (prob_{payCom}/1\text{-}prob_{payCom}) = \beta_0 + \beta_1 TaxPen + \beta_2 TaxAud + \beta_3 Imprison + \beta_4 TaxServ + \beta_5 TaxLawSimp + \beta_6 MutUnd + \beta_7 CorSiz + \beta_8 CorOwn + \beta_9 Corloc + \beta_{10} CorpSect + \beta_{11} MarTaxRate + \beta_{12} EmpSal + \beta_{13} CorAge + \beta_{14} TaxAdv$$

Where

$Prob_{PayCom}$	-Probability of payment compliance
TaxPen	- Usefulness of tax penalty
TaxAud	- Tax audit adjustment
Imprison	- Effectiveness of imprisonment
TaxServ	- Quality of taxpayer service
TaxLawSimp	- Simplified tax law
MutUnd	- Mutual understanding
CorSiz	- Total assets of large corporation
CorOwn	- Ownership pattern
Corloc	- Locational identity - local or multinational
CorpSect	- Sector affiliation - finance, manufacturing or service
MarTaxRate	- Marginal tax rate
EmpSal	- Salary paid to the employees
CorAge	- Age of incorporation
TaxAdv	- Nature of tax advisor appointed

Second, when tax audit adjustment is taken as a predictor, there is significant difference in the payment compliance of large corporations (β = -.271, Wald $\chi2$ = 7.612, p = .006, odds ratio = .763). This indicates that tax audit affects payment compliance negatively. It also shows that a 1 percent increase in audit adjustment leads to a .27 percent decrease in the probability of payment compliance. This finding tends to suggest that corporations who are audited and are found to have adjustments are likely to be less payment compliant than those who are not found to have any adjustments.

Third, when the effectiveness of imprisonment is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, significant difference is found in payment compliance between those corporations agreeing and those disagreeing on its effectiveness (β = -1.569, Wald $\chi2$ = 4.620, p = .032, odds ratio = .208). The odds ratio of .208 implies that large corporations agreeing on the effectiveness of imprisonment are (1/.208) = 4.8 times less likely to be payment compliant than those who consider it ineffective. But there is no significant difference found between the payment compliance of those who are undecided and those who disagree on its effectiveness (β = -1.107, Wald $\chi2$ = 1.660, p = .198). This

means that imprisonment affects the payment compliance of large corporate taxpayers negatively.

Fourth, when the quality of taxpayer service is dummy coded into "very good" and "good", by setting "poor" as the reference group, there is no significant difference in payment compliance between those taxpayers scaling quality of taxpayer service as "very good" and those scaling it "poor" (β = -.514, Wald $\chi2$ = .320, p = .572), or those scaling it "good" and those scaling it "poor" (β = -1.021, Wald $\chi2$ = 1.432, p = .231). This implies that quality taxpayer service does not payment of taxes.

Fifth, when simplified tax law is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, no significant difference is found between those taxpayers "agreeing" and those "disagreeing" on tax law simplicity (β = .449, Wald $\chi2$ = .484, p = .487). The same finding applies to taxpayers labelling it „"undecided", and those labelling it "disagree" (β = -.153, Wald $\chi2$ = .023, p = .879). This means that simplified tax law does not affect the payment compliance of large corporate taxpayers.

Sixth, when mutual understanding is dummy coded in the same way as taxpayer service, there are no significant differences in payment compliance between the "very good" and the "poor" groups (β = -.392, Wald $\chi2$ = .239, p = .652) or between the "good" and the "poor" groups (β = .182, Wald $\chi2$ = .079, p = .778). This indicates that mutual understanding, whether good or bad, does not help payment compliance.

As these results show, tax audit and imprisonment, are found to affect payment compliance negatively and tax penalty positively. Now, are these the only predictors having a significant relationship to payment compliance? This will be explored in the next section.

6.9.1 Penalty, Audit and Imprisonment: How Consistent are these Instruments in Influencing Payment Compliance?

The CHAID model (Figure 6.7) shows that for payment compliance only tax audit (p = .001, $\chi 2$ = 12.21) is statistically significant[26]. All the tax audit categories end up in terminal nodes, in that none of the categories contain any other predictors influencing payment compliance. As node 2 reveals, corporations with no audit adjustments are 88.4% payment compliant, while corporations having some audit adjustments are only 64.7% payment compliant. This means that corporations with audit adjustments are less payment compliant than those with no adjustments. The findings remain unchanged when corporate sector is used as an influence variable.

Figure 6.7: CHAID model showing significant predictors for payment compliance

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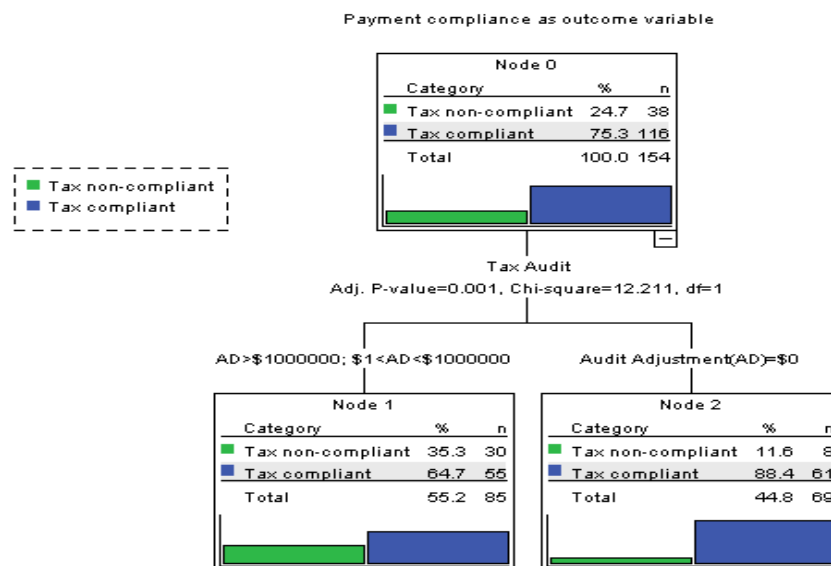
[26]As a requirement of the CHAID model, tax audit has been transformed into three categories: 1) zero or no audit adjustments; 2) audit adjustments from $1 to $1000000; and 3) audits adjustments over $1000000.

Figure 6.8:Gains summary of the fitness of the CHAID model for payment compliance

Target Category:Tax compliant

Growing Method:CHAID

Dependent Variable: Payment compliance as outcome variable
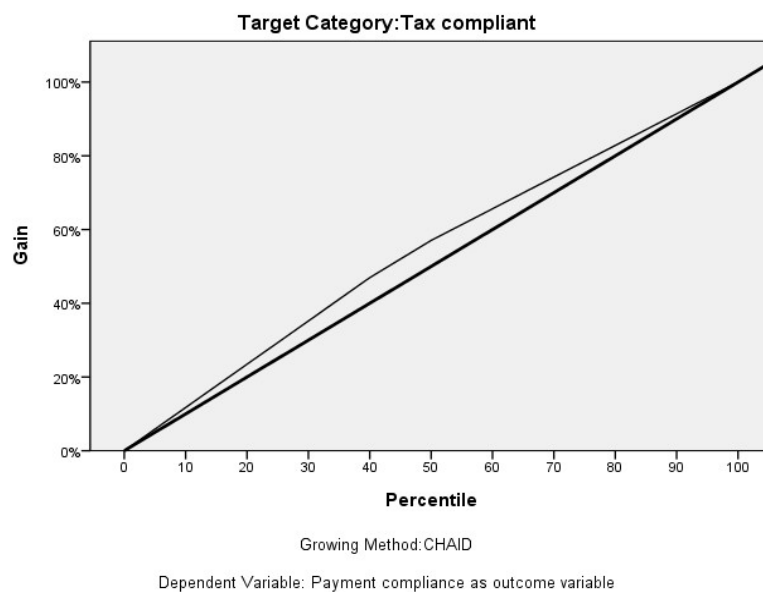
The risk estimate of .247 in both the models (Table B.7, Appendix B), with and without corporate sector as an influence variable, implies that the model classifies approximately 75.3% of payment compliant corporate taxpayers correctly. The classification table (Table B.8, Appendix B) shows that it predicts 100% of payment compliant corporate taxpayers correctly. This means that none of the payment compliant taxpayers is wrongly classified with payment non-compliant taxpayers. Also, the cumulative gains chart (Figure 6.8) starting at 0% and ending slightly before 100%, showing a steep rise towards the end and a good fitness of the CHAID model.

6.9.2 Fixed and Random Effects of Corporate Sector Affiliation on Payment Compliance

In the fixed effects logistic regression (see Table 6.6), penalty (p = .001, CI = 95%, odds ratio = .417), tax audit (β= -.263, p = .006, CI = 95%, odds ratio = .768) and imprisonment (β= .532, p = .033, CI= 95%, odds ratio = 1.702) appeared significant, in a similar way to what was seen in the standard logit model. It should be noted, however, that in the standard logit model the relationship between imprisonment and payment compliance was negative, whereas in the fixed effects model it had changed into positive. One reason for this might be aggregation bias – "aggregated measurement at higher levels of hierarchy can produce results different from individual results", Kreft and Leeuw (1998:3). In their studies, Kreft and Leeuw found education had positive effect on income when workers were the unit of analysis, but a negative effect on income when the unit of analysis was industry sector. The other reason for this may be effect size of sample on significance (Gorard and Taylor, 2004). However, for penalty and tax audit, the nature of the relationship remained unchanged in the fixed effects model. The standard logit model overestimated the probable effect of penalty and imprisonment on payment compliance. For tax audit, the effect remained same in both models. For a 1% increase in audit adjustment, large corporations were .26% less likely to be payment non-compliant, which is similar to the percentage in the standard logit model. In the jackknife estimations, only tax audit was found statistically significant (p=.021, CI=95%, odds ratio=.797). The jackknife standard error for tax audit was .026, and the logit model standard error for it was .098, which was $(.026/.098)^2$= .070 of the size of jack knife error.

Table 6.6: Results obtained when fitting fixed and random effects logistic regression to payment compliance data

Compliance instruments	Fixed effects logistic regression					Random effects logistic regression			
	Categories	Exp β	Sig.	S E***	Jknife S E	Exp β	Sig.	S E	Jknife S E
Coercive instruments									
	Agree	.417	.001**	.264	.382	.422	.002**	.272	.228
Tax penalty	Undecided	1.394	.052*	.8532	.	1.381	.000**	.848	.563
	Disagree	1	.	.	.	1	.	.	.
Tax audit		.768	.006**	.074	.026	.786	.009**	.072	.015
	Agree	1.702	.033*	3.350	.743	1.683	.043*	2.904	.239
Imprisonment	Undecided	1.569	.487	.996	.	1.419	.410	1.065	
	Disagree	1	.	.	.	1	.	.	.
Persuasive Instruments									
	Very good	1.661	.571	1.487	.503	1.977	.447	1.772	.055
Taxpayer service	Good	.611	.381	.343	.	.650	.831	.364	
	Poor	1	.	.	.	1	.	.	.
	Agree	.645	.492	.465	.072	.577	.382	.363	.011
Simplified tax law	Undecided	.554	.483	.465	.	.566	.502	.479	.
	Disagree	1	.	.	.	1	.	.	.
	Very good	1.456	.635	1.154	.360	1.175	.836	.915	.011
Mutual understanding	Good	1.751	.372	1.099		1.620	.445	1.025	
	Poor	1	.	.	.	1	.	.	.
Constant						5.11			

Model fitness and variance components

$LRChi^2$, re		19.99	.045*	
-2LL, re		-63.269		
$\sigma^2 v$, re		-12.37		
Rho, re		1.21e-07		
Rho, jknife		1.16e-07		

Notes:
*Significant at the 0 .05 level
**Significant at the 0 .01 level
***Standard errors reported in the table are the square root of the variances of the VCE
Likelihood-ratio test of rho=0: chibar2 (01) =   0.00 Prob >= chibar2 = 1.000

The results showed that the random effects logit model was statistically significant, $LRChi^2$= 19.99, p=.045, with none of the predictors" regression coefficient was equal to zero. The fitness of the model improved from the baseline model (-2 LL= -77.04) to the intended model (-2 LL= -63.26).The panel level variance ($\sigma^2 v$) was -12.37 and the proportion of the total

variation accounted for by the random effect was 1.21e-07. Since the value of rho was not zero, the panel level variance component was important, and was different from the standard logistic regression. The reduction in the proportion of the contribution to the sector level variance made by the jackknife intraclass correlation coefficient (*rho* = 1.16e-07, CI = 95%), undermined the importance of corporate sector as a context variable for payment compliance. In the random effects logistic regression, imprisonment (β=.521, p = .043, CI = 95%, odds ratio= 1.683) and tax audit (β= -.240, p = .009, CI = 95%, odds ratio = .786) were found statistically significant. But imprisonment was significant only for those taxpayers who agreed that it was effective to reduce tax related offences as compared with those who did not. Results showed that by not taking into account the random effects within corporate sectors, the standard logit model overestimated the effect of imprisonment on payment compliance. For tax audit, the effect on payment compliance remained almost same. In the jackknife estimations, however, only tax audit was found to be significant (p= .059, CI= 95%, odds ratio= .810), and the logit standard error was $(.015/.098)^2 = .023$ of the size of jackknife standard error which was acceptable as a consistent measure.

6.10 Section Summary

In the standard logistic regression, three instruments – penalty, tax audit and imprisonment – are found significant for payment compliance. The CHAID models show that only tax audit is significant for payment compliance. Lastly, in the fixed and random effects models, penalty, tax audit and imprisonment are found significant for payment compliance. In the latter models, the direction of the relationship between imprisonment and payment compliance has changed compared to that in the base model. Therefore in a "without-contextual-effect" case, payment compliance is likely to be less when imprisonment is considered effective. And in a "with-contextual-effect" case, the situation is reversed –

payment compliance is likely to be more when imprisonment is considered effective. On all counts, it is apparent that only coercive instruments explain the payment compliance behaviour of large corporate taxpayers, and there is no role for persuasive instruments.

6.11 Important Instruments for Overall Compliance

Overall compliance is the summated output of the three compliance components, as discussed in section 5.5.2 in chapter 5, and 37% of large corporate taxpayers were found to be overall tax compliant. To obtain the ranking of choices for compliance instruments, the question asked was (see question 9 in the questionnaire): *To ensure fulfilment of all tax obligations (i.e., filing return, paying taxes and reporting income) properly, how much would each of the following contribute (i.e., the six instruments).* According to their ranking (Table B.5, Appendix B), taxpayer service was as the best instrument (93/154) = 60.38% for overall compliance. Simplified tax law (44.15%), tax audit (38.33%) and mutual understanding (25.97%) came out as the next best instruments. In the ranking, penalty and imprisonment were found to be the last choices. Seen from the perspective of corporate sector affiliations, (55/80) = 68.75% of finance and (18/31) = 58.06% of service sector corporations rank taxpayer service as more important than other instruments for achieving overall compliance. Only (20/43) = 46.51% of manufacturing sector corporations rank taxpayer service as the most effective option. The next section pursues a regression analysis based on measurement of these instruments on a Likert-type scale.

6.12 Results and Interpretations of Logistic Regressions

The results showed that the model was statistically significant, χ^2 (16, N = 154) = 84.61, p = .000 compared to the null models. Also the fitness of the model improved from the

baseline model (-2 LL =180.71) to the intended model (-2 LL = 96.09).[27] The model explained between 45.8% (Cox and Snell R Square) and 62.8% (Nagelkerke R square) of the variance in overall compliance and it correctly classified the 78.0% of large corporate taxpayers who were overall compliant and 88.6 % of taxpayers who were overall non-compliant, with an overall success rate of 84.8% in the classification. Table 6.7 shows B coefficients, Wald $\chi 2$, significance levels, and Exp (B) by predictors, and the results can be interpreted as follows.

First, when the usefulness of tax penalty is dummy coded into "agree" and "undecided", by setting "disagree" as the reference group, there is no significant difference in the overall compliance between those who agree tax penalty to be useful and those who disagree (β = .884, Wald $\chi 2$ = 1.212, p = .271). There is also no significant difference in overall compliance between those large corporate taxpayers who are undecided and those who disagree about the usefulness of tax penalty (β = .707, Wald $\chi 2$ = .805, p = .370). This result demonstrates that tax penalty does not affect the overall compliance of large corporate taxpayers.

Second, when tax audit adjustment is taken as a predictor, there is significant difference in the overall compliance of large corporate taxpayers (β = -.698, Wald $\chi 2$ = 27.099, p = .000, odds ratio = .498). This shows that a 1 percent increase in audit adjustment leads to a .69 percent decrease in the probability of overall compliance. This finding suggests that corporations who are audited and are found to have audit adjustments are likely to be less overall compliant than those who are not found to have any adjustments.

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[27]Multi-collinearity was checked by using VIF and the cut-off value of VIF was 5. The values of VIF ranged from 2.62 to 2.89, and therefore all the16 predictors were included in the analysis.

Table 6.7: Logistic regression outputs on overall compliance data

Compliance instruments	Categories	β	Wald χ^2	Stand. Error	Sig.	Exp (β)
Coercive instruments						
	Agree	.884	1.212	.803	.271	2.420
Tax penalty	Undecided	.707	.805	.788	.370	2.027
	Disagree	0.		.	.	1
Tax audit		-.698	27.099	.134	.000**	.498
	Agree	-1.207	2.054	.842	.152	.299
Imprisonment	Undecided	-.293	.082	1.020	.774	.746
	Disagree	0	.	.	.	1
Persuasive instruments						
	Very good	-3.064	9.154	1.013	.002**	.047
Taxpayer service	Good	-2.434	6.834	.963	.012*	.088
	Poor	0	.	.	.	1
	Agree	1.826	3.130	1.032	.051*	6.208
Simplified tax law	Undecided	.109	.006	1.412	.038*	1.115
	Disagree	0	.	.	.	1
	Very good	.534	2.72	1.022	.602	1.705
Mutual understanding	Good	1.159	2.164	.788	.141	3.185
	Poor	0	.	.	.	1
Constant		3.293				
Overall model evaluation						
χ^2	84.613				.000**	
-2 Log likelihood (baseline)	180.715					
-2 Log likelihood (intended)	96.095					
Wald test	10.189				.001**	
Cox & Snell R^2	.458					
Nagelkerke R square	.628					
Goodness of fit test						
Hosmer and Lemeshow	8.433				.392	

Notes:

Enter method was followed
*Significant at the 0 .05 level
**Significant at the 0.01 level

$ln\ (prob_{OvlCom}/1\text{-}prob_{OvlCom}) = \beta_0 + \beta_1 TaxPen + \beta_2 TaxAud + \beta_3 Imprison + \beta_4\ TaxServ+$

$$\beta_5 TaxLawSimp + \beta_6 MutUnd + \beta_7 CorSiz + \beta_8\, CorOwn +$$
$$\beta_9 Corloc + \beta_{10} CorpSect + \beta_{11} MarTaxRate + \beta_{12}\, EmpSal +$$
$$\beta_{13} CorAge + \beta_{14} TaxAdv$$

Where:

$Prob_{OvlCom}$	*- Probability of overall compliance*
TaxPen	*- Usefulness of tax penalty*
TaxAud	*- Tax audit adjustment*
Imprison	*-Effectiveness of imprisonment*
TaxServ	*- Quality of taxpayer service*
TaxLawSimp	*- Simplified tax law*
MutUnd	*- Mutual understanding*
CorSiz	*- Total assets of large corporation*
CorOwn	*- Ownership pattern*
Corloc	*- Locational identity - local or multinational*
CorpSect	*- Sector affiliation - finance, manufacturing or service*
MarTaxRate	*-Corporate marginal tax rate*
EmpSal	*- Salary paid to the employees*
CorAge	*- Age of incorporation*
TaxAdv	*- Nature of tax advisor appointed*

Third, when the effectiveness of imprisonment is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, no significant difference is found in overall compliance between those corporations agreeing and those disagreeing with its effectiveness (β = -1.207, Wald $\chi2$ = 2.054, p = .152) or those undecided and those disagreeing (β = -.293, Wald $\chi2$ = .082, p = .774). This means that imprisonment does not affect the overall tax compliance of large corporations.

Fourth, when the quality of taxpayer service is dummy coded into "very good" and "good", by setting "poor" as the reference group, there is a significant difference in overall compliance between those large corporations scaling service quality as "very good" and those scaling it as "poor" (β =-3.064, Wald $\chi2$ = 9.154, p = .002, odds ratio = .047). There is also significant difference in overall compliance between those corporate taxpayers scaling taxpayer service quality as good and those scaling it as poor (β = -2.434 Wald $\chi2$ = 6.834, p = .012, odds ratio = .088). The inverted odds ratio (1/.047) = 21.27 means that large taxpayers who view taxpayer service quality as "very good" are likely to be 21.27 times less

overall complaint than those who view it as "poor". The odds ratio (1/.088) = 11.36 means that large corporations who said that quality of taxpayer service was "good" are 11.36 times less likely to be overall compliant than those who scaled it "poor". This indicates that taxpayer service affects overall compliance negatively.

Fifth, when simplified tax law is dummy coded as "agree" and "undecided", by setting "disagree" as the reference group, significant difference is found between those taxpayers "agreeing" and those "disagreeing" on tax law simplicity (β = 1.829, Wald $\chi2$ = 3.130, p = .051, odds ratio=6.208). The same finding applies to taxpayers scaling it „"undecided", and those scaling it "disagree" (β = .109, Wald $\chi2$ = .006, p = .038, odds ratio=1.115). This means that simplified tax law affects the overall compliance of large corporate taxpayers positively.

Sixth, when mutual understanding is dummy coded into "very good" and "good", by setting "poor" as the reference group, there are no significant differences in overall compliance between those taxpayers scaling it as "very good" and those scaling it as "poor" (β = .534, Wald $\chi2$ = .272 p = .602) or between those taxpayers scaling it as "good" and those scaling it as "poor" (β = 1.159, Wald $\chi2$ = 2.164, p = .141). This indicates that mutual understanding does not help to improve overall compliance.

Taxpayer service, simplified tax law and tax audit are found to be significant predictors of overall compliance in the logit model. Taxpayer service and tax audit are found to have a negative influence on the likelihood of increased overall compliance and simplified tax law a positive effect.

6.12.1 Taxpayer Service and Tax Audit: How Valid are they as Predictors of Overall Compliance?

For the first time taxpayer service and simplified tax law emerge as significant predictors, along with tax audit. The CHAID output without the influence variable (see Figure 6.9) demonstrates that for overall compliance, other than tax audit (p = .000, χ^2= 60.74), there is another variable, simplified tax law (p = .047, χ^2 = 5.14) that plays a significant role, and this was the second important variable in the respondent ranking (section 6.11).

This demonstrates that for the segment of large corporate taxpayers having no adjustment or additional claim, tax audit is the only significant predictor of overall compliance, as happened in case of reporting compliance. Taxpayers in this category are 69.6% overall tax compliant. The other category, "tax audit with adjustment" takes simplified tax law as a significant variable. This means that for large corporate taxpayers with audit adjustments, simplified tax law is the best predictor of their overall compliance. Tax audit remains the most significant predictor, even when the influence of corporate sector is taken into account (see Figure 6.10), and both of its categories take other predictors to overall compliance. Simplified tax law is dropped as a significant predictor, and taxpayer service (P = .016, chi-square = 7.00) becomes the next best predictor in the model.

Figure 6.9: CHAID model showing significant predictors for overall compliance (without influence variable
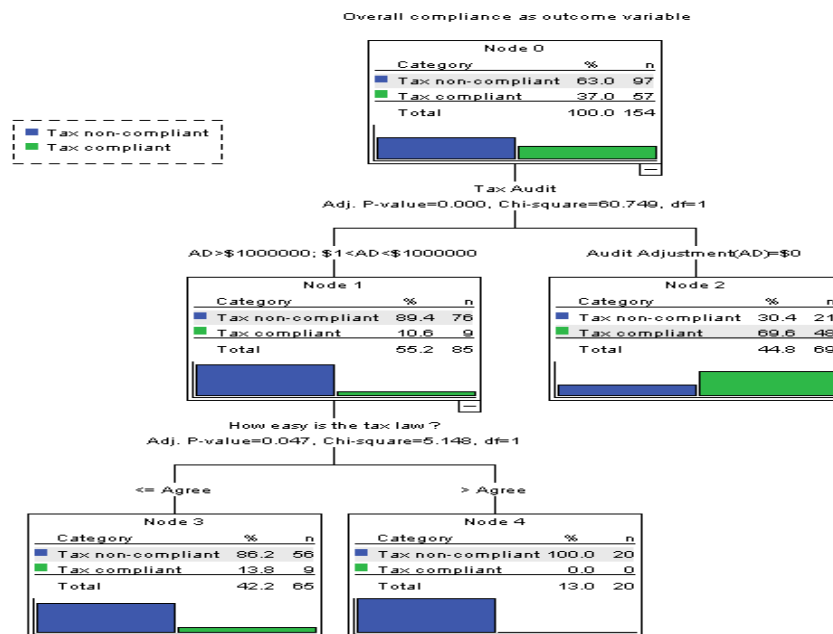
Figure 6.10: CHAID model showing significant predictors for overall compliance (with influence variable)
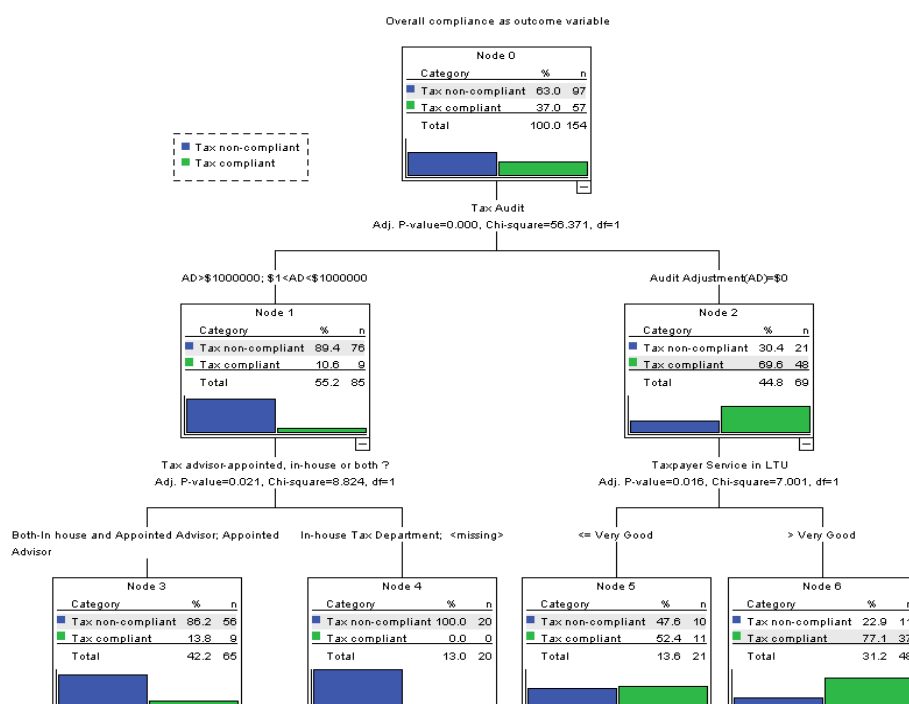
Figure 6.11: Gains summary on the fitness of the CHAID model on overall compliance (without influence variable)

Target Category:Tax compliant

Growing Method:CHAID
Dependent Variable: Overall compliance as outcome variable
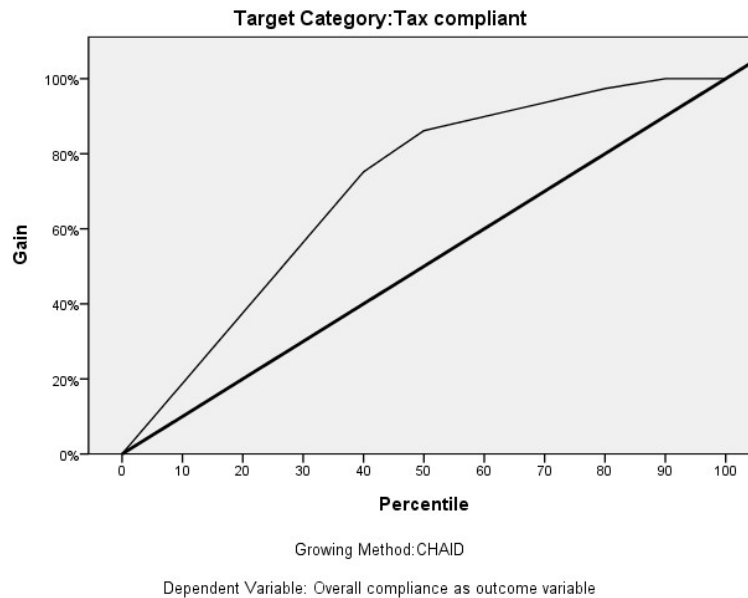
Figure 6.12 Gains summary on the fitness of the CHAID model on overall compliance (with influence variable)

Target Category:Tax compliant

Growing Method:CHAID
Dependent Variable: Overall compliance as outcome variable
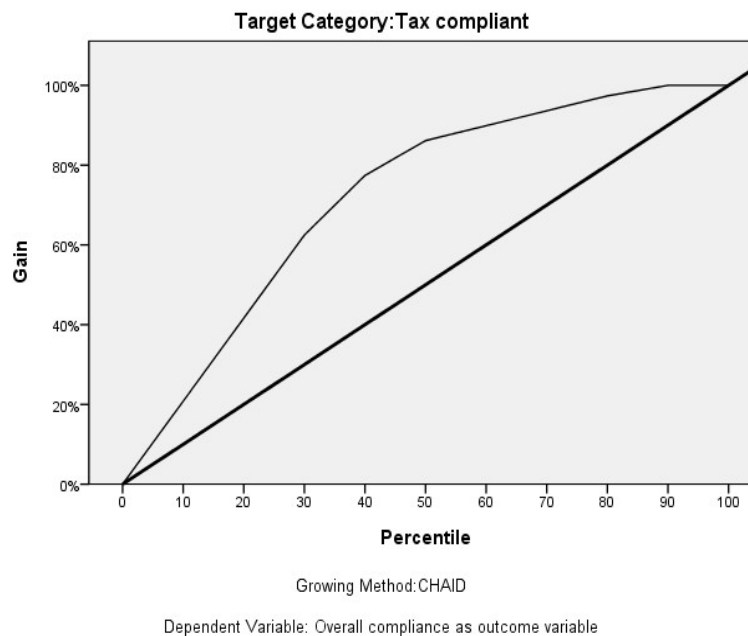
As terminal node 5 shows, taxpayers without any audit adjustments and who consider that taxpayer service quality is either "good" or "poor" are 52.4 % overall compliant. This means

that taxpayers without any audit adjustments scaling taxpayer service quality as "poor" are almost equally divided into overall compliant and overall non-compliant. However, those having no audit adjustments and scaling taxpayer service quality as "very good" are highly (77.1%) overall compliant.

Risk estimate (Table B.7, Appendix B) without the influence of corporate sector is .195, which rises to .201 when the influence of corporate sector is included in the model. This suggests that the capacity of the CHAID model to correctly explain the extent of overall taxpayer compliance has fallen slightly from 80.5% to 79.9%. Also, the model without the influence of sector variable, as reported in the classification table (Table B.8, Appendix B), is 84.2% correct in identifying overall taxpayer compliance, which falls drastically to 64.9% when the influence of sector is considered. This is a problem that arises due to the influence of corporate sector in the model. Finally, the cumulative gains charts (see Figures 6.11 and 6.12) start from 0% and stop slightly before 100%, maintaining a steep and steady rise towards the end. Thus this can be taken as a fairly good model, like the other ones.

CHAID models indicate that tax audit, simplified tax law and taxpayer service are statistically significant instruments, like the logit models, which reported taxpayer service quality, simplified tax law and tax audit as significant predictors to overall compliance. Sector-specific fixed and random effects analysis is produced below to measure the effect of corporate sector on the significant predictors.

6.12.2 Fixed and Random Effects of Corporate Sector Affiliation on Overall Compliance

The above models showed that three instruments – tax audit, taxpayer service quality and simplified tax law – were significant to overall compliance. The results obtained were further examined by the fixed and random effects of corporate sector. In the fixed effects logistic regression (see Table 6.8), taxpayer service was significant only among those corporations that viewed taxpayer service quality as "very good" (β= 2.971 p = .003, CI = 95%, odds ratio = 19.51). Large corporations that considered taxpayer service quality to be "very good" were 19.51 times more likely to be overall compliant than those that scaled it "poor". It is important to note that the direction of the relationship between taxpayer service quality and overall compliance has changed to positive, having been negative in the logit model. But for other groups of taxpayers, those who scaled taxpayer service quality as only "good" over the reference category, taxpayer service quality was not a significant variable (p = .361, CI = 95%, odds ratio= 1.833). This implies that corporations within a sector were likely to be more overall compliant if they scaled taxpayer service quality as "very good". Tax audit (β=-.676, p = 0.000, CI = 95%, odds ratio = .508) remained significant, and the likelihood of overall non-compliance due to tax audit adjustment decreased to .67% from the .69% it was in the standard logit model. The direction of the relationship has not changed. In both cases, tax audit was affecting overall compliance negatively. Finally, simplified tax law (p = 0.032, CI = 95%, odds ratio = .170) was found significant only between those taxpayers within a sector "agreeing" and those "disagreeing" on tax law simplicity. The inverted odds ratio for this was (1/.170) = 5.88, which showed that the standard logit model overestimated the influence of simplified tax law. In the jackknife estimations only taxpayer service (p= .021, CI= 95%,

odds ratio= 3.67) and tax audit (p= .018, CI= 95%, odds ratio= .546) were found statistically

significant, but not simplified tax law. The jack knife standard error for taxpayer

Table 6.8 Results obtained when fitting fixed and random effects logistic regression to overall
compliance data

Compliance instruments	Fixed effects logistic regression					Random effects logistic regression			
	Categories	Exp β	Sig.	S E**	Jknife S E	Exp β	Sig.	S.E	Jknife SE
Coercive instruments									
Tax penalty	Agree	.472	.282	.337	.241	.356	.191	.280	.160
	Undecided	.835	.803	.600		.884	.863	627	
	Disagree	1	.	.	.	1	.	.	.
Tax audit		.508	.000*	.066	.044	.515	.000*	.065	.030
Imprisonment	Agree	3.22	.157	2.678	.932	3.324	0.160	2.270	.459
	Undecided	2.428	.249	1.869	.	2.972	0.143	2.213	
	Disagree	1	.	.	.	1	.	.	.
Persuasive instruments									
Taxpayer service	Very good	19.511	.003*	2.471	2.641	23.547	.002*	2.020	.496
	Good	1.833	.361	1.218	.	2.001	.288	1.308	
	Poor	1	.	.	.	1	.	.	.
Simplified tax law	Agree	.170	.032	.172	.179	.163	.047	.168	.042
	Undecided	.151	.100	.174	.	.142	.092	.164	.
	Disagree	1	.	.	.	.	.	.	.
Mutual understanding	Very good	.599	.610	.601	.735	.455	.428	.451	.027
	Good	1.829	.453	1.472	.	1.611	.546	1.272	.
	Poor	1	.	.	.	1	.	.	.
Constant						1.606			
Model fitness and variance									
LRChi^2, re		82.44	.000*						
-2LL		-49.136							
σ^{2}v, re		-14.42							
Rho, re		1.66e-07							
Rho,jknife		8.67e-07							

Notes:
*Significant at the 0.01 level
**Standard errors reported in the table are the square root of the variances of the VCE
Likelihood-ratio test of rho=0: chibar2 (01) =   0.00 Prob >= chibar2 = 1.000

service quality was 2.471, and the logit model standard error for it was 1.013, which was $(2.641/1.013)^2 = 6.797$ of the size of jackknife standard error, and the difference between them was huge. For tax audit $(.044/.134)^2 = .107$ and for simplified tax law $(.179/1.032)^2 = .030$ such differences were not, however, sizeable.

The random effects logistic regression was statistically significant, LRChi2 = 82.44, p = .000, with none of the predictors" regression coefficient being equal to zero. The fitness of the model improved from the baseline model (-2 LL= -90.35) to the intended model (-2 LL= -49.13). The panel level variance ($\sigma^2 v$) is -14.42 and the proportion of the total variation accounted for by the random effect was 1.66e-07. Since the value of rho was not zero, the panel level variance component was important, and was different from the standard logistic regression. The improvement in the proportion of the contribution to the sector level variance made by the jackknife intraclass correlation coefficient (*rho* = 8.67e-07, CI = 95%) reinforced the importance of corporate sector as a context variable for overall compliance.

Tax audit (β=-.663, p = 0.000, CI = 95%, odds ratio = .515), taxpayer service (β= 3.159, p = 0.002, CI = 95%, odds ratio = 23.547) and simplified tax law (p = 0.047, CI = 95%, odds ratio =.163) turn out to be statistically significant in the random effects model. For a 1 percent increase in tax audit adjustment, the likelihood of overall non-compliance decreased to .66% from the earlier .69% in the standard logit model, meaning an overestimation of its effect on overall compliance by the standard logit model. But the standard logit model slightly underestimated the effect of taxpayer service in comparison with the random effects model. And the relationship between taxpayer service and overall compliance has changed into positive. This means that quality taxpayer service was likely to increase overall compliance for corporations between the sectors. In the case of the effect of simplified tax law on overall compliance, the estimations made by the standard logit model odds ratio=

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6.208 and the random effects logistic regression odds ratio (1/.163) = 6.134 were almost the same. In the jackknife estimations both tax audit (p=.051, CI=95%, odds ratio=.559) and taxpayer service (p=.057, CI=95%, odds ratio=4.00) remained statistically significant. Simplified tax law discontinued to be significant in the jackknife estimations. And the difference between the jackknife standard error and logit model standard error was not much. For tax audit it was $(.030/.134)^2 = .050$, for taxpayer service it was $(.496/1.013)^2 = .239$, and for simplified tax law it was $(.042/1.032)^2 = .001$, which were within acceptable limits.

6.13 Section Summary

If we look at the pattern of the instruments emerging as significant predictors of overall compliance, we see taxpayer service, tax audit and simplified tax law have consistently been on the list. In the logit, CHAID and multilevel logistic models they have continued to be the most significant predictors of overall compliance. Apparently, coercive and persuasive instruments are equally significant for overall compliance, which makes this result uniquely different from the results found for filing, reporting, and payment compliance.

6.14 Comparative Importance of Coercive and Persuasive Instruments

The snapshot below in Table 6.9 and 6.10 shows, in general terms, that filing compliance is influenced by two instruments, tax penalty, and tax audit, which represent different aspects of coercive tax instruments. For reporting compliance, only tax audit comes out as a significant predictor, which is also a coercive instrument. In the case of payment compliance, where three coercive instruments – penalty, tax audit and imprisonment – have been found to have significant influence.

Table 6.9: Illustrating the relative positions of filing and reporting compliance

Compliance instruments	Filing				Reporting			
	Logit	CHAID	Multi-level		Logit	CHAID	Multi-level	
			FE	RE			FE	RE
TaxPen	Sig +		Sig+	Sig+				
TaxAud	Sig +		Sig+	Sig+	Sig -	Sig	Sig-	Sig-
Imprison								
TaxServ								
TaxLawSimp								
MutUnd								

Notes: Sig – Statistically significant instruments; +/ - indicates whether the coefficient showed a positive or a negative relationship, FE – fixed effects, RE – random effects

Table 6.10: Illustrating the relative positions of payment and overall compliance

Compliance instruments	Payment				Overall			
	Logit	CHAID	Multi-level		Logit	CHAID	Multi-level	
			FE	RE			FE	RE
TaxPen	Sig+		Sig+	Sig+				
TaxAud	Sig -	Sig	Sig-	Sig -	Sig-	Sig	Sig-	Sig-
Imprison	Sig -		Sig+	Sig +				
TaxServ					Sig -	Sig/ no demand	Sig+	Sig +
TaxlawSimp					Sig+	sig	Sig+	Sig+
MutUnd								

Notes: Sig – Statistically significant instruments; +/ - indicates whether the coefficient showed a positive or a negative relationship, FE – fixed effects, RE – random effects

Finally, for the achievement of overall tax compliance, three instruments are important – tax audit, taxpayer service and simplified tax law. One of these, tax audit, is a coercive instrument; and the other two, taxpayer service and simplified tax law, are persuasive instruments. Apparently, overall tax compliance is influenced by both coercive and persuasive instruments, whereas the component compliances are principally influenced by coercive instruments.

6.15 Chapter Conclusion and Summary

The purpose of this chapter has been to determine how significant the instruments of coercion and persuasion are to the tax compliance of large corporations, based on descriptive and inferential statistical evidence. The chapter has shown that, for filing compliance, tax audit and tax penalty are the most significant predictors. Both these predictors have a positive influence on filing compliance (see section 6.3.1). In the fixed and random effects models, the degree of likely influence fell for both the predictors, but the nature of the relationship with the outcome variables remained unchanged (section 6.3.4).

The chapter has revealed that tax audit is the only significant predictor of reporting compliance (section 6.6). This chapter has illustrated that for payment compliance, tax audit, imprisonment and tax penalty are the significant predictors (section 6.9). They were found significant in the standard logit model and in the fixed and random effects regressions (sections 6.9 and 6.9.2). Only tax audit was found significant in the CHAID model. Also to note that the direction of the relationship between tax payment and imprisonment changed to positive in the fixed and random effects model from negative in the standard logit model. For tax audit there has not been any change in the nature of the relationship with payment compliance across the different models. The chapter has demonstrated that for overall tax compliance, taxpayer service quality, simplified tax law and tax audit are the most significant instruments. Both taxpayer service and tax audit affect overall compliance negatively, and simplified tax law positively (section 6.12).   It should also be noted the nature of the relationship changes for taxpayer service from negative to positive with the inclusion of corporate sector variable.

Evaluating the significance and contribution of the instruments, it may be claimed that coercive tax instruments have a strong influence on filing, reporting, and payment

compliance. But for overall compliance, both coercive and persuasive instruments contribute significantly.

In deducing the significant coercive and persuasive instruments, the effects of corporate sector, as referred to in sections 3.4.2 and 3.12.3, were considered. The issue of corporate sector was mainly raised to make a precise measurement of the significant compliance instruments. Since this issue was considered only to make a robust assessment of the instruments, it does not reappear in the next chapter, which looks at why the instruments were significant or not, providing an answer to research sub-question 4 of the thesis.

CHAPTER VII

EXPLANATIONS FOR WHY COERCION OR PERSUASION IS IMPORTANT

7.1 Introduction

The outputs of logistic regressions, CHAID and xtlogit models identified the statistically significant instruments for tax compliance. To find potential explanations for the importance of these instruments and the nature of their relationship with tax compliance, this chapter analyses the data collected through open-ended in-depth interviews and tax office records. The respondents for the interviews were different from those for the questionnaire survey. They were asked to explain the importance of, and the nature of the relationship between the selected coercive and persuasive instruments and corporate tax compliance. In total, 27 respondents were interviewed: 14 from the tax authority and 13 from the corporate world. The respondents from the tax authority included six officials from the LTU and eight from other income tax offices experienced in large corporate tax compliance management. The respondents from large corporations included six chartered accountants, four corporate directors and three chief finance officers (CFOs). A summary of respondent interviews is set out in Table C.2, Appendix C. Besides analysing respondent observations, this chapter analyses the data collected from LTU administrative records and other sources.

This chapter is divided into three sections. Section one focuses on the major codes, themes and pattern created from the interviews. Section two explains the reasons why some instruments are significant to tax compliance and some are not. Finally, section three concludes the chapter.

7.2   Factors Underlying the Working of the Instruments

The exploration process begins with breaking down interview excerpts into meaningful pieces and then comparing and contrasting them to figure out the patterns in the respondents" arguments. The respondents were questioned so as to place their arguments in the debate on coercive versus persuasive approaches to tax compliance, focusing on the selected instruments. The intention was to encourage unrestrained narratives on the main argument of coercion versus persuasion and then to understand the role of the selected instruments. Arguments the researcher was sceptical about, i.e., he thought a respondent might not be expressing what they believed, were re-investigated with other respondents. Themes arising from the narratives were worked through to establish how and why they contributed to the stance of the respondents. Strategically, this approach is a reversal of the questionnaire survey, which set off with the variables – defining coercion and persuasion – and then deduced either coercion or persuasion as important. The other difference in the carrying out of the interviews was that it was made clear that compliance consisted of three important segments – filing, reporting and payment. This was done so that the respondents could provide probable explanations as to why a compliance instrument was important at the component and the overall levels.

In generating the codes[28], themes and patterns (see Table 7.1 for the free nodes and Appendix C Table C.1 for their links with one another), Nvivo-9 was employed, and to present the explanations, the interpretivist approach (see section 3.12.4) was followed. The free nodes are clarified in Table 7.1, which shows that the respondents mentioned 64 different nodes in

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[28]In Nvivo, codes, which refer to the selected section of a text are called nodes. Nodes are of two types: free nodes and tree nodes. Free node refers to the initial coding that has no direct and logical link with other nodes, whereas tree nodes systematically establish the link between the free nodes.

explaining the role of coercive and persuasive instruments with respect to component and overall compliance. As the Table7.1 shows, of the 27 respondents, 18 discussed coercive instruments and the frequency of reference to the coercive instruments by the respondents was 41.

Table7.1: Major free nodes mentioned in the respondents" arguments

Nodes	Sources	References	Nodes	Sources	References
Tax administration issues	24	36	Penalty as an instrument	7	9
Trust and understanding	14	23	Persuasion as a policy tool	19	35
Political influence	11	12	Falsified accounts	16	32
Bribery and corruption	17	29	Profit motive	17	26
Accountability and transparency	7	9	Pseudo-military rule (1/11)	10	12
Coercion as a policy tool	18	41	Firm regulatory action	8	9
Complementarity of the instruments	23	28	Inspection and surveillance	4	4
Taxpayer confidence	3	3	Cooperation and respect	12	14
Corporate employees	5	7	Hard legal background	12	16
Corporate governance	4	7	Interactive audit	7	12
Corporate sector character	8	9	Value for money	20	40
Education and training	17	34	Equity and fairness	9	10
Environment for negotiation	1	2	Conflicts of interest	18	26
Financial accounting standards	6	11	Knowledge gaps	14	21
Inter-sector competition			Tax audit standard	19	35
Income based audit selection	5	8	Attitude of the tax official	16	16
Habit and norms	3	5	Ethics and morality	16	33
Hassle-free environment	2	2	Simplifying tax law	23	48
Supreme judiciary	7	7	Rationality of action	22	38
Hidden large business	2	2	Financial burden	16	21
Alternative use of concealed income	18	27	Networking and modernization	4	9
Image and Reputation	6	9	Lack of coordination	14	17
Implementation difficulties	7	12	Credibility of action	16	23
Prosecution and imprisonment	8	12	Illegal use of power	6	10
Insecurity of business	2	3	Disbelief and disregard	4	4
Institution building	1	1	Biased appeals procedure	8	17
Institutional monitoring	6	9	Transfer pricing	6	6
Legal compulsion	12	18	Discretionary power	4	4
Taxpayer service	16	25	Detection risk	7	10
Tax professionals	8	15	Motivation	3	4
Tax compliance costs	8	22	Local versus multinational	9	10
Ownership and partnership	18	25	Litigation culture	8	22

Source: Candidate"s own table, compiled from field data

Similarly, persuasion as a topic was discussed by 19 taxpayers, and the frequency was 35. This means there were some respondents who focused on both coercion and persuasion as possibilities for improving tax compliance. Again, tax administration as a free node was referred to by 24 respondents and these respondents attempted to link tax administration inefficiencies with corruption, accountability, confidence building, mutual understanding and tax laws (see Appendix C, TableC.1). Frequency of reference, however, is not a significant factor in the qualitative understanding of a problem. What is important is to look for a concept or argument that really matters or carries a meaning for our understanding. Based on the links among the free nodes, the major patterns of respondent arguments have been modelled in Figure 7.1.

Figure 7.1: Patterns of the major themes related to the creation of tax compliance
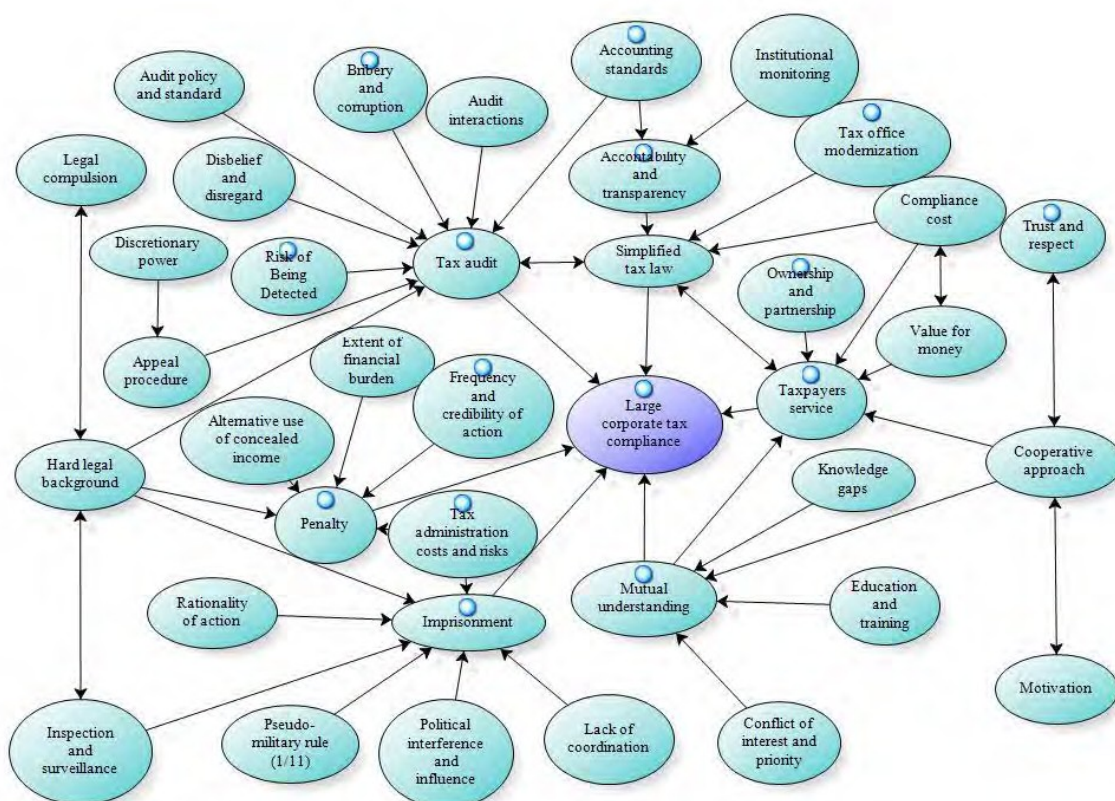
Source: Candidate"s own figure created from field data using Nvivo-9

The figure shows that there is a common thread among the free nodes that creates the major pattern and theme of the respondents" arguments on why a tax compliance instrument is significant to an understanding of tax compliance. For example, tax audit, penalty and imprisonment as coercive instruments emerge from the need for serious legal action. Other similar issues indicative of the need for coercive action are inspections and surveillance on compliance activities within a strong regulatory framework. Persuasion as a policy tool is argued to produce higher compliance if it can incentivize taxpayers by means of quality financial and accounting standards, modernized tax-office and inter-office networking and connectivity, and building trust and confidence in the tax system. The pattern reveals that trust and motivation are the fundamental incentives for persuasion, which in turn is linked to the effectiveness of taxpayer services or tax law simplification. The link between motivational forces, co-operations and effective use of taxpayer service suggests that the quantitative analysis has not fully captured the forces that induce tax compliance.

7.3 Important Instruments to Achieving Tax Compliance: Some Explanations

The purpose of this section is to provide probable explanations for the results of the quantitative analysis presented in chapter 6 regarding the effects on tax compliance of different compliance instruments. The chapter investigates why some instruments were found to influence tax compliance positively and some negatively. To do this, it uses evidence from the interviews and documents, against the background of the international tax compliance literature.

7.4 Tax Penalty: Why Does It Influence Filing and Payment Compliance Positively?

As found in chapter 6, an increase in tax penalty is likely to create more filing and payment compliance. No other types of compliance, i.e., reporting or overall, are likely to be influenced by penalty. This section attempts to answer why tax penalty is significant in securing filing and payment compliance. The following arguments were made by the respondents.

7.4.1 Certainty of Application

Discussion with the respondents revealed that tax penalty is the instrument most frequently used to control filing and payment non-compliance by large corporate taxpayers. The large corporations, as one respondent observed that, "are certain that failure to submit a return and to pay taxes on time will end in an immediate fine" (Respondent 4). The firm imposition of a penalty on those who violate laws about littering the highway in Singapore is a glaring example of how tough measures work in our neighbouring country, was one respondent"s argument. The respondents added that certainty and toughness in the application of penalties meant that taxpayers would become habituated to complying with tax laws in the long run. To verify this argument, the tax penalty register of the LTU was checked. It showed that the penalty imposition rate for non-filing of returns had been 100% since 2004. The "certainty of application" argument gets stronger when the use of other penal actions, for example, imprisonment, freezing of bank accounts or shutting down of business premises, is compared. Freezing of bank accounts as a punishment is used only occasionally, while imprisonment and the shutting of business premises are rare. Since 1923, when the income tax department of Bangladesh came into being, no criminal proceeding have been taken against filing non-compliance except in the tax year 2008-2009, when it was politically motivated (discussed in

section 7.8.2).

7.4.2 Financial Burden of Penalty

However, some respondents had a different view. They argued that it is not the frequency or the certainty of penalty imposition, but the amount of the financial burden a penalty imposes is important. Referring to tax code 124 of the Bangladesh Income Tax Ordinance, the respondents noted that non-filing without reasonable cause is subject to a fine not exceeding 10% of the last assessed taxes. And for non-payment of taxes the fine is an amount not exceeding the amount of underpaid taxes (Tax Code 125), or 25% of the amount of underpayment (Tax Code 127). Such penalty rates are exorbitant for large corporate taxpayers, who are charged with a marginal corporate tax rate of from 27.5% to 45% on the generated profit (in the tax year 2008-2009, large corporations had an average profit of $41 million with a standard deviation of $283 million). One respondent specifically observed that, "The penalty chargeable for non-submission of return or non-payment of taxes is so huge that it"s like a double taxation on corporate profit. No corporation will take the risk of making unreasonable delays in paying taxes and being penalized with a rigorous financial burden" (Respondent, 7).

A review of the relevant literature demonstrates that between severity and probability, the latter is more important in understanding the influence of penalty on tax compliance (Varma and Doob, 1998). The severity argument even fails to increase compliance in non-tax areas. In studying the effect of severity versus probability of penalty in reducing crime among homeless young people, Baron and Kennedy (1998) found that the threat of financial burden failed to reduce violent crimes. William (2001) found that large fines do not produce a higher rate of tax return filing among Australian taxpayers.

7.4.3 Section Summary

It seems that of the two contradictory explanations for why penalty improves filing and payment behaviour, the frequency argument versus the financial burden argument, the former is more plausible. This is because the penalty rates (Tax Codes 124, 125 and 127, as mentioned above in paragraph 4) are common to all taxpayers in Bangladesh, corporate and non-corporate, large and small. Arguably, the financial burden penalties impose is fairly similar across taxpayers, and there is no reason for large corporate taxpayers to feel financially more affected than the others. What makes sense is the high probability that penalty is unavoidable for filing and payment delays, since large corporations cannot remain off the radar of the tax authority when it comes to the statutory obligation of registering with the LTU.

7.5 Why Does Penalty Fail to Improve Reporting Compliance?

The main arguments put forward to explain why penalty fails to improve reporting and overall compliance are twofold: first is the profitable alternative use of underreported income; and second is the possibility of winning a favourable appeal judgement in a reporting non-compliance case.

7.5.1 Alternative Use of Underreported Income

In-depth interviews with respondents revealed that a 10% penalty (Tax Code 128) is charged on underreported income. This rate is much lower than the interest rate on commercial bank deposits and borrowing. The commercial bank interest rate on fixed deposits is usually 12% to 14%, and on bank borrowing it is 16% to 18%. Large corporate taxpayers find it economically more profitable to underreport income, and they either deposit the money in

commercial banks or use it to service debts. A senior chartered accountant and tax representative of a large corporation stated emphatically:

> For reporting non-compliance, a big issue for large corporations is the bank interest rate on fixed deposits and borrowing. The bank interest rates on fixed deposits and borrowing are always higher than the tax penalty rate. For the underreported income, there is a penalty of 10%, but the interest rates on deposits and borrowing are much higher. This makes most of the large corporations prefer to hide income and invest the money in bank deposits, or to repay their bank loan first. (Respondent, 25)

The respondents added that the fundamental difference between the nature of payment and reporting non-compliance and the possible profitable alternative use of underreported income can together provide a strong explanation for the ineffectiveness of tax penalty in inducing reporting compliance. The respondent said that payment non-compliance is measured on the basis of declared or settled income. Once income is settled, calculating the payment obligation is comparatively easy and there is less scope for ambiguity. As a result, penal actions are successful in dealing with non-payment. On the other hand, to penalise undisclosed income, the tax authority has to gather definite information of hidden income, which is far more difficult and less likely. One respondent commented that the possibility of the tax authority unearthing the correct amount of undisclosed income is much weaker than the possibility that it can calculate taxes on declared income correctly. It is therefore rational for tax dodgers, particularly large ones, to choose an act of non-compliance where the probability of being detected and penalised is low or non-existent.

7.5.2 Biased Appeal Judgements

Other respondents had a different explanation. They observed that the success of any coercive action, tax penalty in particular, depends on how neutral appeal courts are. The tax appellate authority enjoys enormous discretionary power in settling non-compliant cases, particularly the reporting non-compliance that constitutes the majority of appeal cases. As reported in

Table B.9, Appendix B, a total of 85 large corporations lodged appeal applications. Of the 85 appeal applications, 69 related to reporting non-compliance, which is much higher than for filing (8 appeals) and payment non-compliance (31 appeals).

One respondent said that, "It is difficult to win non-filing and payment cases at the appeal court, since the tax law involved is straightforward and the scope for applying discretionary power is limited. But for non-reporting cases, appellate authorities enjoy enormous discretionary power" (Respondent, 9). This ample scope for winning a favourable judgement on reporting non-compliance in the appeal courts makes large corporate taxpayers careless about penal action by the LTU administration. This is supported by the finding of the international tax compliance literature that an independent appeal mechanism is needed to limit the discretionary power of tax officials and to make tax compliance actions meaningful (Torgler and Schneider, 2007).

7.5.3 Section Summary

From the above facts it can be deduced that higher interest rates on bank deposits and borrowing compared with the penalty rate is an important but not a sufficient explanation for the failure of penalty to increase reporting compliance. It seems more justifiable to argue that the opportunity to make alternative use of underreported income is exploited only because such clandestine operations are safe and less likely to be identified. And the relaxed appeals process for non-reporting cases further weakens the possibility that penalty can bring a positive change in taxpayers" sense of their reporting obligations.

7.6 Tax Audit: Why Does It Increase Filing Compliance?

Going back to chapter 6, tax audit is statistically significant for filing, reporting, payment and overall tax compliance. Tax audit affects filing compliance positively, but all other compliances negatively. This section discusses why tax audit improves filing compliance; and the next section discusses why it fails to increase other compliances.

7.6.1 The Interactive Audit Process

The initial explanation emerging from the in-depth interviews as regards the impact of tax audit on filing compliance relates to the highly interactive and dialogue-based audit process followed in discharging an audit examination. The audit process starts with (see Figure 7.2) sending a formal letter notifying the taxpayer of the audit selection criteria and the documents needed to meet the audit requirements. Both the parties, tax officials and corporate representatives, discuss the audit points formally and informally in the tax office or at the corporate accounts office. This interactive audit process keeps large corporate taxpayers well connected with the LTU management and binds them to fulfil the first step in tax compliance (i.e., return filing). This was well-explained by a tax professional as follows:

> Audit actions are a good way to enter into a relationship with the LTU authority. We know that we will have many disagreements, but whatever disputes or contentions we have, we cannot uproot ourselves from the tax system and avoid the business relationship that starts with return filing. (Respondent, 10)

Figure 7.2: Tax audit flow in the LTU
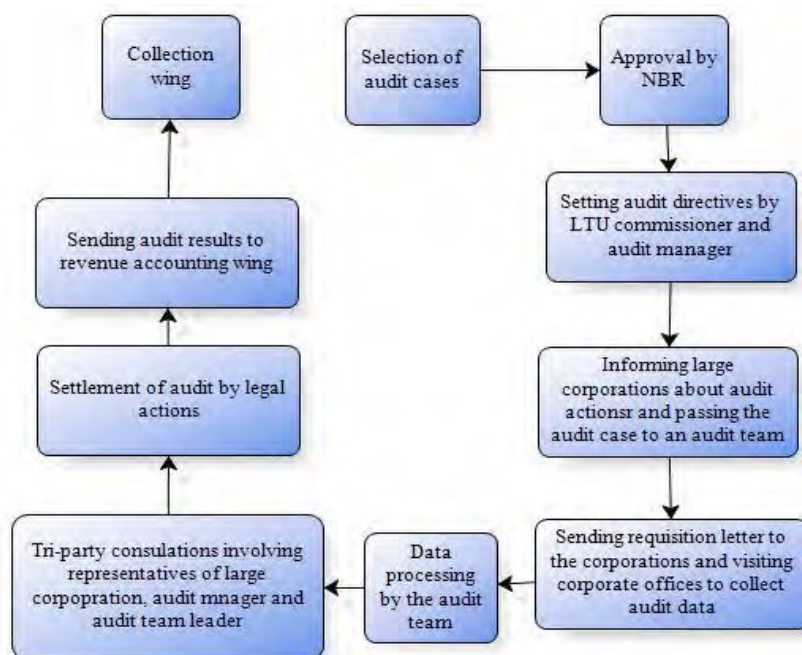
Source: LTU Annual Report

7.6.2 Increased Risks of Detection for Non-Filing of Returns

The argument that the interactive audit process keeps taxpayers connected to the tax authority has some truth in it, but there are other facts that need to be understood. One of the underlying facts is the increased risk of being selected for audit examination when the submission of a return is delayed. The LTU audit policy clearly states that delays in filing are the first reason for large corporation being faced with an audit action. An LTU official explained this point in the following way: "A timely submitted return with all taxes paid is *less likely* to be audited than a return submitted beyond the time limit with obvious mistakes" (Respondent, 21). The officials argued that the high likelihood of selection for audit has implications for the strategic relationship between large corporate taxpayers and the tax

authority. In the strategic game, every step the large corporate taxpayers take is intended to create a positive image of a good complier, and to avoid the severity of audit adjustment. In support of this explanation, the tax officials provided evidence from audit records. They claimed that large corporations audited at least once in the previous three years usually submitted their tax return on time. Even if they failed; they would notify the tax office in advance to avoid the risk of audit selection. The filing register illustrates that of 42 non-filers in the 2008-2009 tax year, 24 had received some audit adjustments in one or more of the previous three years. All these 24 late-filers informed the LTU in advance of their failure to submit their return and applied for extensions. The other 18 non-filers, who had had no audit adjustments during the previous five years, did not apply for extensions. The tax officials argued that it is the effect of the previous years" audits and the attempt to reduce the risk of being selected for tax audit that influence timely returns filing, not the affinity that grows out of the audit-led interactions.

There is evidence in the literature to support the above argument. Pentland and Carlile (1996) found that making positive impressions is part of the taxpayer"s strategic interaction in the audit process. Pentland and Carlile argued (1996:227) that, "In filing a return, the taxpayer makes the first control moves in the expression game. Taxpayers present a limited, stylized set of information that purports to summarize their economic activities for the year in question. In selecting a return for audit, the IRS makes its first uncovering move. At this level, from the taxpayer"s point of view, the game consists of a single question: „will I get audited if I include (or omit) this information on my return?"''

7.6.3 Section Summary

The conclusion from the above discussion is that reducing the risk of being selected for audit due to non-filing offence is the main concern of large corporate taxpayers. Non-filing of a

return increases the possibility of being selected for audit and the subsequent threat of being caught with undeclared income and extra tax owing. The opportunity to make a profit out of other non-compliances, especially non-reporting, is much higher than the opportunity associated with non-filing of a return. Thus it suggests that to protect other possible non-compliance from penalty and audit investigations, large corporate taxpayers file their returns on time. With this, the fact that large corporate taxpayers are under a statutory obligation to register with the tax authority expedites filing compliance.

7.7 Why Does Tax Audit Fail to Improve Reporting, Payment and Overall Compliance?

Surprisingly, tax audit has backfired as a means of improving the reporting, payment and overall compliance of large corporate taxpayers (see section 6.14). Conflicting explanations of this fact have been given by respondents, both from the tax administration and the corporate world. Major explanations include falsified audited financial reports, mutual disbelief and disrespect and rampant tax audit corruption. These are discussed below.

7.7.1 Defective and Sub-Standard Accounts

Audited financial statements (e.g., income statement, balance sheet and all related documents) are an integral part of the filed return for all corporate taxpayers in Bangladesh, small or large. In many cases, audited financial reports in Bangladesh are either falsely or mistakenly prepared. It is not only the tax officials of the LTU, but also the certified public accountants, who believe that audited financial reports are defective and sub-standard. One tax official commented: "For the weak regulatory bodies, many large corporate taxpayers prepare more than one audit report to misrepresent facts on income and expenditure" (Respondent, 8). In the same vein, a chartered accountant added: "Neither local nor international accounting standards are followed with respect to income reporting and tax payment. The common

misrepresentation for manufacturing concerns is over-valuation of inventory to raise the cost of goods sold. There is nothing the auditor can use to insist that the market price of the goods was higher or lower than that reported in the audit report" (Respondent, 25). This respondent also informed the researcher that many of the audited financial reports submitted in the name of his accounting firm were in fact produced by other accountants. What the large corporate taxpayers do is to use the name and logo of a famous accounting firm to make the audit reports convincing. According to respondent observations, falsified, sub-standard audited financial reports cause audit failure in two ways. First, large corporate taxpayers do not feel alarmed by tax audit findings because an audit demand based on a falsified audit report can be managed by further falsification of documents. Second, aggressive audit adjustments by the audit team, due to their belief that the audited accounts are baseless, make corporate taxpayers even more reckless about complying with audit actions. In other words, large corporations never feel coerced by audit actions because of their capacity to take advantage of sub-standard accounting policies and regulations.

Some respondents, however, refuted this argument, saying that it is not defective and sub-standard audited financial reports but conflicting local and international accounting practices that create reporting and payment non-compliance. The CFO of a large multinational corporation explained this conflict with a vivid example: "As a multinational corporation we use the MIP software, compiled by the US-GAAP (Generally Accepted Accounting Principles), for internal reporting with our parent corporation in Canada. MIP requires gross sales to be reported as turnover and trade discounts as administrative expenses. However, according to the Bangladesh Accounting Standards (BAS), turnover is gross sales net of trade discount. Despite the treatment differences, the effect on net profit is the same, which the LTU authority seldom understands. Every year this becomes a bone of contention on our reporting and payment issues" (Respondent, 17). In such cases, as the respondent emphasized,

tough monitoring and surveillance are likely to fail in dealing with non-compliance. The respondent proposed that conflicts in accounting standards and practices could be minimized by persuasive measures such as simplifying the relevant accounting practices and motivating taxpayers to obey them.

7.7.2 Disbelief in Submitted Accounts

Chronic disbelief between tax officials and large corporate taxpayers has a major negative impact on the success of tax audit. It has become an audit ritual to refuse to believe reported income, even when this is correct. A corporate CFO explains: "We certainly know that the tax officials will disbelieve the accounts and reject them. This negative attitude and mistrust compel us more towards non-disclosure and non-payment ... In fact we leave scope for the audit team to increase the reported income" (Respondent, 19). Similarly, an LTU auditor commented, "Even if the income declaration is perfect, we raise it to demonstrate our efficiency to our superiors. If the audit adjustment is nil, it creates suspicion of our honesty and capabilities as tax auditors" (Respondent, 12). In an environment of mistrust and disbelief, taxpayers find it rational to understate their income, with the connivance of professional accountants, as discussed above, although the audit action taken may be severe.

7.7.3 Tax Audit Corruption

Many respondents cited tax audit corruption as the single most important reason for audit failure. The respondents argued that disbelief of reported income and accounts was only a surface level explanation: the desire of tax officials for bribes came closer to explaining the fact. The tax authority raises questions on audited reports only to pursue its base motives. The money spent to meet such illegal demands is itself a reason to understate or falsify the accounts. One respondent, a qualified chartered accountant, raised the following question: "Will it ever be possible to claim bribery as an allowable expense in the audited accounts? If

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not, then who will bear the expenses? A natural consequence therefore is a concocted audit report and audit failure" (Respondent 26).This statement was supported by a tax commissioner, who said that, "the pervasive corruption in our tax system deprives us of most of its benefits. The audit measures fail because the tax audit team easily succumbs to their desire for personal financial gain, instead of undertaking a systematic and rigorous audit action" (Respondent 12).Another tax official explained that, "tax officials are in a competition to make money from large corporate taxpayers. This creates alienation between them. Large taxpayers find that visiting the tax office gets them robbed in broad daylight. When this is the case, taxpayers find underreporting of income logical" (Respondent 21).

Tax audit corruption, however, is not a tax administration issue only. The large corporate taxpayers are equally, or in some cases more, interested in the connivance process. One respondent said, "The corrupt large firms are free birds in society, not accountable to anybody for their corrupt business activities. There is much evidence that corporate managers and directors have recourse to bribes to suppress facts and tax liabilities" (Respondent 9). The respondent further said that many corporate managers are happier to have a corrupt tax official to assess their income than an honest officer.

In the international literature, tax audit corruption is a much researched issue. The Bureau of Inland Revenues (BIR) in the Philippines finds that 96% of its audit cases are settled with corruption (Co et al., 2007). In the Ugandan LTU, as the World Bank (2009: 158) states that "in 2003… five senior officers attached to large taxpayer units (LTUs) were involved in a major corruption scandal." The US IRS comments that an aggressive audit system that spends too much time on unnecessary tax issues may lessen the fear of audit actions and their success. Phillips (2008:147) adds that, "even if a business keeps proper books and its accounts are audited by an accredited auditor; the tax official disregards this and makes an

assessment based on informal negotiation." Tanzi (1998), however, claims that a substantial part of tax evasion arises because taxpayers deliberately manipulate their accounts. Bergman and Armando (2006, pp: 1) state that, "cheaters further non-comply after audits, while moderate compliers appear to take audit threats more seriously." This tendency among corporate taxpayers indirectly fosters tax audit corruption and undermines the success of audit action. Therefore Daniel (2010) cautions corporate taxpayers not to take advantage of a weak tax audit, since exploitation of a weak tax audit may cause it to become increasingly aggressive.

7.7.4 Use of Reported Income as an Audit Selection Criterion

Another factor that may adversely affect audit action is reported-income-based audit selection policy for large corporate taxpayers. The higher the reported income is, the higher the probability of audit adjustments. To be on the safe side, large corporations keep their reported income as low as possible. This argument by large corporations has some basis in the LTU audit adjustments, which show that those filing high profit declarations are given high audit adjustments. For example, the highest amount of audit adjustment in the tax year 2008-2009 was made on a cellular corporation which was also the top taxpayer in that year (*The Daily Prothom Alo*, 4 November, 2011).This explanation is supported by the literature, with Hanlon et al. (2005:5) stating that: "more profitable corporations are relatively less compliant." In other words, non-reporting increases as the firm"s revenues or added value increases.

7.7.5 Tax Audit is Expensive

The high cost of tax audit is another reason for this instrument failing to make a positive contribution to reporting and payment compliance. The cost of tax audit includes not only bribery and other illegal expenses but also the huge cost of assembling the massive number of records and other documents required and the professional fees paid to accountants and

advisors. The more frequent the audit is, the higher the audit cost. To recover some of this cost, large corporations either conceal income or inflate expenses. In this connection, it is worth quoting an LTU official: "Businessmen never share their profits. All audit compliance costs are recorded in the accounts under true or false heads of expenditure, sometimes as „miscellaneous"" (Respondent, 9). The respondent added that the cost of audit compliance is so huge and frequent that underreporting becomes the only choice. The respondent believed that audit actions would be more successful if compliance costs could be reduced. This concern is supported in the relevant literature. Slemrod et al. (2001: 3) state that, "The true tax base is not costlessly observable to the tax collection agency, although known to the taxpayer. Then, under certain circumstances, the taxpayer may be tempted to report a taxable income below the true value." Kopczuk (2006:14) clarifies this point with reference to large corporations in the following lines: "There is at least a possibility that a very high probability of audit (*such as for large corporations that are almost continuously audited*) can backfire when audits are themselves costly."

7.7.6 Section Summary

Review of the above responses and explanations suggests that tax audit corruption is the fundamental reason for tax audit to backfire. Corruption, however, is not a one-way game. Rather, all the parties concerned in the tax audit process have an equal interest and role in it. The commercial tax auditors make money by falsifying the audit reports at the request of the large corporate taxpayers; and the tax officials make money out of the defects in the accounts. Mutual disbelief and disrespect centre on the money-making aspect of audit actions. The other aspect of the matter is the lack of audit standards, as a result of which almost all audit adjustments end in dispute and litigation. There is no audit and risk assessment guide followed uniformly among the audit teams. Moreover, the audit teams enjoy huge discretion in disallowing expenses, without much accountability to any authority.

7.8 Why Does Imprisonment Impact on Payment Compliance Negatively and Fail to Influence Other Compliances?

As found in chapter 6, imprisonment is statistically significant (negatively) to payment compliance, but when the context variable is considered, it influences payment compliance positively. Imprisonment does not have any significant relationship with other types of compliance. A few explanations have been explored, and these are set out below.

7.8.1 Imprisonment Lacks Rationality

Non-payment of taxes is an offence, but not a criminal offence that should be punished with imprisonment. In-depth interviews with survey respondents showed that imprisonment as a coercive action is a mismatch to tax non-payment. One tax advisor observed: "Imprisonment as a tax compliance instrument raises the question of rationality. The tax authority should not imprison its own people and be inimical towards them over taxes. Rather the tax authority should build confidence among large corporate taxpayers" (Respondent, 19).Respondents argued that the goal of the punishment system should not be to destroy the steady income stream of a taxpayer, which is an essential condition to the payment of taxes. It is argued that large corporate taxpayers are rarely found to be payment non-compliant if the claim is undisputed. Respondents commented that the only reason that large corporations would not pay was conflict on legal issues or severe financial crisis. The respondents recommended that differences on legal issues should be addressed by simplifying tax law, and financial crises should be accommodated by liberal payment options. Imprisonment during hard times would further exacerbate the payment capacity of large corporations.

The respondents further added that in terms of likely impact on large corporate business, imprisonment differs from penalty and tax audit. Penalty and tax audit adjustments represent a financial risk to large corporations; but imprisonment causes both financial and reputational

risk. Imprisonment of a key corporate director or an employee involved in tax non-payment may destroy the public image of a corporation and may drive it out of the tax-base completely. Respondents claim it is more justifiable to impose monetary fines if the corporation is sufficiently financially sound to bear the tax burden, rather than pursuing a criminal prosecution.

7.8.2 Inequity and Lack of Proportionality

Equity and proportionality are the two vital features of any compliance instruments if the latter are to be successful. Respondents argued that it was the violation of these fundamental principles that explained the negative relationship between imprisonment and tax non-compliance. One of the reasons that imprisoning taxpayers violates these basic principles is that it represents the politicization of the tax administration. In a politicized tax administration, imprisonment as an action, as respondents observed, is used more as a political instrument than a tax policy instrument. For example, respondents cited the massive criminal investigation and imprisonment drives during the time of the military backed caretaker government of 2008-2009, popularly known as 1/11 in Bangladesh politics. A major tool of this vengeful government was to implicate political leaders in tax corruption cases. Other taxpayers guilty of the same level of non-compliance were not prosecuted. In some cases, taxpayers were prosecuted for non-filing of returns, which did not match the level of the offence committed and could be seen as a violation of the rule of proportionality. The underlying reason for such a violation is political favour and persecution, as was well-explained by an LTU official: "A large corporation having an inimical relationship with the government is in serious trouble. In a country like ours, where political vengeance is rampant, you have to maintain a relationship with the political power. Once you are liked and patronized by a certain political party, you are less likely to face unequal treatment" (Respondent, 21).The respondents observed that an unequal application of imprisonment

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motivated by political interest created disrespect of the tax system and worked against the success of criminal prosecutions.

7.8.3 Credibility of Threat

According to respondent observations, a leading issue affecting the working of imprisonment, like that of other coercive tools, is the credibility of the threat it represents. When imprisonment is only a distant possibility, it is less likely to change the behaviour of large corporations with regard to tax compliance. Making imprisonment a real threat depends on a lot of factors, especially enforcement skills and the risk and cost involved in criminal proceeding. As far as the enforcement skills of the LTU"s Enforcement and Collection Wing (ECW) are concerned, there is strong doubt about these. Neither the officials nor the staff have the legal expertise or sound knowledge necessary to conduct a criminal case. On this point, one respondent had this to say:

> To initiate a criminal proceeding you must give a hearing to the defendant; but in most cases the ECW wing does not follow the procedure properly. Inefficient application of the law enables large corporate taxpayers to challenge and outmanoeuvre a criminal prosecution easily. A large corporate taxpayer escaping a criminal investigation become less fearful of the tax authority and will tend to be more non-compliant in the future (Respondent, 23).

On the point of the risk involved in criminalising tax non-payment, respondents commented that the tax authority is always under the threat of political accusations from large corporate taxpayers. This threat seems genuine when the General Secretary of a political party says that, "when we come into power, we will take legal action against the tax officials for initiating criminal investigations against our party leaders. Action will also be taken against those who have published tax return information to serve government interests" (*The Daily Jugantor*, 14 May, 2010)." To avoid such dangers many tax officials are not interested in initiating

criminal proceedings, even though a successful prosecution is much coveted. As a result criminal prosecution loses its impetus and fails to produce the intended outcome.

7.8.4 Cost and Administrative Impediments

To tax officials, seeking prison terms for wrongdoers is ineffective because of the cost and administrative burden this imposes on the tax administration. A tax commissioner informed me that in the recent past, the tax administration had been expected to bear all expenses involved in the litigation and imprisonment process. The tax commissioner was saying that huge funds were needed to initiate a legal battle against the most affluent section of taxpayers. In terms of the scant yearly budget allocated to the LTU, undertaking criminal prosecutions became a white elephant for the tax administration. In fighting non-compliance prosecutions, large corporate taxpayers could appoint the best lawyers and bear as much financial burden as necessary, whereas the lawyers appointed by the tax authority were professionally less competent. It was argued by respondents that unequal financial and professional expertise was the main impediment to the successful application of imprisonment as a coercive tool.

The international tax compliance literature supports the arguments that inequitable application of imprisonment and lack of credibility of the threat it represents can negatively affect its success. Wu (2005) argues that imprisonment and other penal measures don"t succeed because of their severity, but because of their certainty, swiftness and frequency, which enhance the credibility of the threat. It can also be maintained that imprisonment is a less effective measure if taxpayers are financially capable of meeting their tax obligations. Aparicio et al. (2011) claim that non-monetary punishment like imprisonment is most suitable if the offence is grave and repeated, and the taxpayer is not financially capable of bearing a monetary fine. There is also some evidence that too much publicity given to the criminalization of tax non-compliance, as happened in case of the caretaker government era

in Bangladesh, can have a bad effect on tax compliance (Dubin, 2007). Dubin (2007) found that doubling tax audit actions increased tax collection by $ 21.7 billion in the US, whereas doubling criminal investigations increased tax collection by $16.0 billion after a huge publicity effort.

7.8.5 The Impact of Corporate Sector and the Change in the Direction of the Relationship

On the point of why imprisonment positively contributes to payment compliance when corporate sector affiliation is taken into account, two major explanations could be drawn from respondent observations, in addition to the statistical explanations given in section 6.9.2. First, corporations affiliated to a particular sector have many business and strategic issues in common. Finance sector corporations, for instance, have to follow common business standards imposed on them by central bank regulations. It may be that large corporations in the same sector tend to follow each other in dealing with government agencies as a part of their business strategy. Second, business competition among corporations in the same sector forces them to be identical in income reporting and tax payment behaviour. However, these explanations fit more to the corporations within a particular sector, but not for corporations between the sectors. This study, therefore, finds it is important to probe further the question of why the contextual variable affects the relationship between imprisonment and tax compliance positively, and to conduct an empirical study to this end. This proposal for future research also applies to the changed relationship between taxpayer service and tax compliance, as discussed in section 7.9.

7.8.6 Section Summary

There is some truth in the argument that the politicization of criminal investigations undermines their capacity to contribute to the achievement of higher tax compliance among

large corporate taxpayers. But the politicization of criminal prosecutions does not happen in isolation. Politicization is an integral part of a corrupt tax system where the political masters and large corporate taxpayers are in a symbiotic relationship to maximize each other"s economic interests. A respondent strongly argued that, "in fact business is controlled by the politicians. It is the corrupt political system and the politicians that make the law and control the law. Political and business interests go hand in hand; public interests are less considered." In addition, the failure of imprisonment as a policy tool can be understood to some degree as the result of poor coordination between the judiciary and the tax administration. The ultimate fate of criminal proceeding depends on how non-compliance cases are dealt with at the top echelons of the judicial system. In Bangladesh, the judiciary seldom gives priority to the settling of revenue cases, which ties up millions dollars of tax revenues in the litigation process. It is worth mentioning that a total of $ 323.47 million of tax revenues from large taxpayers have been tied up in the higher courts for over a decade. However, further empirical evidence would be needed in order to find out whether the failure of imprisonment is more a tax administration issue or a judiciary issue.

7.9 Why Does Taxpayer Service Fail to Improve Tax Compliance?

In chapter 6 we found that taxpayer service does not improve tax compliance. We found that taxpayer service is only important to those taxpayers who are overall compliant. This means that taxpayer service has no influence on a particular component of tax compliance, but only on compliance as a whole. It further means that taxpayer service is important to those taxpayers who are already good compliers (e.g., in the sense that they are overall compliant). Taxpayer service does not have any impact on those who commit any sort of non-compliance (e.g., in the sense that they are non-compliant in one or more compliance obligations). Chapter 6 also showed that the negative relationship between taxpayer service and tax

compliance turns into a positive one when sector affiliation is considered. On this point of a changed relationship, the thesis makes the same argument as it made in case of the changed relationship between imprisonment and tax compliance (see section 7.8.5). Respondents" explanations for why taxpayer services fail in improving overall tax compliance have been summarized and presented in Chart 7.1

Chart 7.1: Frequency distribution of respondent observations on taxpayer service and tax compliance
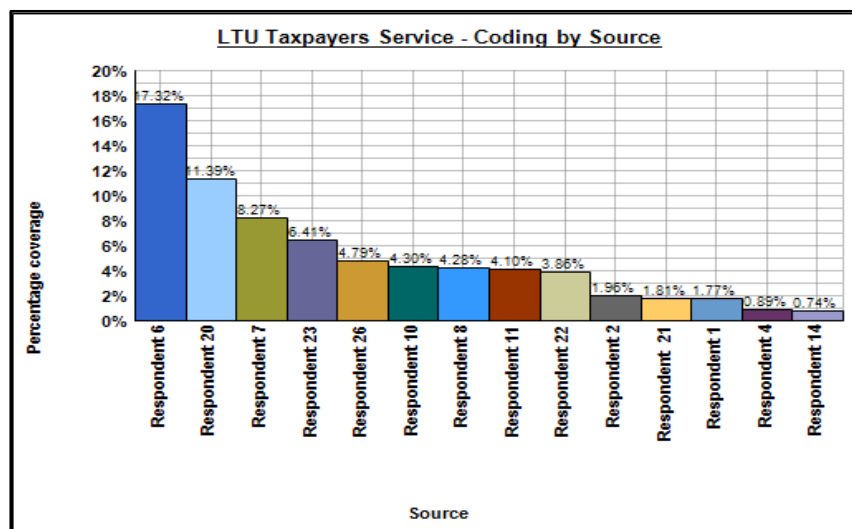
Source: Candidate"s own figure created from field data using Nvivo-9

As the chart shows, 14 respondents had some observations on the effect of taxpayer service on tax compliance, among other issues. Among them, respondents 2, 11, 14, 23 and 26 considered the quality of service to be a strong, and respondents 1, 2, 6, 8 and 20 considered it a weak, means of dealing with large corporate tax compliance. Respondents 4, 7, 10 and 22, however, raised doubts as to whether service influenced large corporate taxpayers at all. The percentage above the bar for each respondent shows the proportion of the discussion that was related to taxpayer service. The explanations given in the discussions are discussed below.

7.9.1 Poor Value for Money

A strong reason for the negative relationship between overall tax compliance and taxpayer service, as it emerged from respondent observations, is the poor value for money that taxpayer service represents. Respondents argued that taxpayer service – good or bad quality – should enable taxpayers to reduce the financial and psychological costs of tax compliance (defined in section 2.2). There were strong doubts among respondents as to whether the quality taxpayer service by the LTU reduced tax compliance costs at all. The chief accountant of a large corporation explained that, "there is a better opportunity to discuss our problems at LTU level, but unfortunately services like this in most cases end in disagreement and in loss of money and time" (Respondent, 3). However, this view was challenged by a tax official who argued that whether taxpayer service creates value or not, and whether the service is good or bad in quality, the contribution of taxpayer service to tax compliance is always minimal. The reason is that taxpayers do not face any financial liability for enjoying the service and refusing tax payment in return. The respondent added,

> Through quality service you can increase tax compliance only minimally, at best 10%. This is because large corporations know that non-response to taxpayer service does not involve any cost to their business, as the penal and tax audit measures do. As a rational economic unit they will only refrain from non-compliance when the potential cost of disregarding a tax compliance tool is higher than the gain they may make out of such disregard for the tool. (Respondent, 20)

The international tax compliance literature demonstrates that large corporate taxpayers, as consumers of taxpayer service, are interested in three things: service quality, responsiveness and *value for money* (Clarke et al., 2007, quoted in Tuck, 2004:4). This reflects the fact that taxpayer service is treated like other public services, for example, the service patients expect from hospitals. Taxpayer services become effective in producing the desired result only when the service provider-customer relationship between the tax administration and the taxpayer is well accepted by both sides. There are examples of large corporate taxpayers not being happy

with the service-provider-customer relationship. The tax director of a UK multinational corporation quoted by Tuck (2004:15) stated that, "I told [a previous director of LBO] quite vociferously that we aren"t customers. In my view the customer of the Inland Revenue is the Treasury and we are not customers, we are taxpayers...clearly to the extent they are regulators we are tax payers then we have to pay up and face the consequences."

7.9.2 Taxpayer Service Not Needed

Some respondents argued that taxpayer service might not be an important requirement at all to increase large corporate tax compliance. This is because these corporations have their own tax departments, staffed by qualified and efficient accountants and advisors. A tax advisor, also the long-time president of the Income Tax Association of Bangladesh, said: "Taxpayer service is not a firm requirement to improve tax compliance for large corporations, because these corporations have well-equipped in-house tax departments that never lack taxpayer service. Taxpayer service is only likely to be an important factor for the individual and small , for whom services are out of reach" (Respondent, 10). The same argument was made by a high official of the LTU: "The potential for increased large corporate tax compliance through quality taxpayer service is questionable. The big corporations don"t talk about service. Give all service you want and see what happens. There will be no change in their compliance levels. If service could help, we would not need the constitution, the power or enforcement groups. Basically, no corporation wants to pay taxes" (Respondent, 7).

7.9.3 Tax Administration Attitude

A vital fact contributing to the failure of taxpayer service in promoting overall compliance is negative attitude and lack of trust by the tax administration towards large corporate taxpayers. To provide quality taxpayer service, the tax authority has to abandon its risk-averse attitude and the bureaucratic inertia that cause taxpayer service not to work. One respondent

specifically said that, "The attitude of the LTU administration and the quality of service it provides to taxpayers are interconnected. No large corporation will pay millions of dollars in taxes to promote the luxurious life of the LTU tax officials. If the LTU does not change its basic attitude to service provision, it will alienate itself from the large corporations and taxpayer service will fail to achieve the intended results" (Respondent, 21). It is argued that lack of partnership and friendly relationships between taxpayers and the tax administration is one reason that taxpayer service fails to improve tax compliance. If there is bad feeling between taxpayers and the tax administration, the taxpayers can redirect all this resentment by complaining about poor taxpayer service. A tax official commented that, "High quality service, for example, telephoning taxpayers, visiting their premises, having tea or lunch together, has a role to play in addressing compliance issues. The service rendering process and frequent visits and informal meetings make taxpayers a part of the tax system and move tax compliance positively" (Respondent, 6).

The above respondent, however, cautioned that relationship-building should not depend on taxpayer service alone. In the background, stringent corporate tax law must be set up to make sure that the non-compliers are punished (see the Figure 7.1). The respondent suggested that taxpayer service might produce good results if there were tough legal consequences for denying compliance obligations once the relevant services had been provided to facilitate compliance. A respondent made this point clear by stating that, "Some corporations view service provision as a weakness of the LTU enforcement mechanism. They think that the LTU does not have the power and the legal capacity to catch tax dodgers and punish them" (Respondent, 22). Another respondent added that tax compliance was a legal obligation and therefore should be handled with coercion rather than by persuasion (Respondent 25). This respondent argued that constant inspection and surveillance of the business activities of large

corporations could make sure that taxpayers took the legal compulsion seriously and complied with their tax obligations.

The related literature has been reviewed on the points discussed above. On the point of negative tax administration attitude and its adverse effect on tax compliance, Snavely (1990:64) states that, "...the potential obstacle is the fear of risk-taking ...the common risk-averse attitude in the tax administration. Many of the service policies are untried and represent a significant departure from traditional routines." Snavely argues that the principle objective of taxpayer service is to convey a message to taxpayers that the tax department"s attitude to them has shifted from toughness to softness, and in exchange the taxpayers should fulfil their tax obligations. Snavely further states that taxpayer service should dispel fear of the tax administration and distrust towards it. It is pertinent to refer to Bodin (2003), who argues that unless the historically entrenched colonial mind set of tax officials and their organisational culture is changed, taxpayer service, however good, is unlikely to improve tax compliance.

The literature also supports the argument made by Respondent 25 (above) that the success of any legal obligations, of which tax compliance is an example, is more linked with coercive techniques than with persuasion. This is because violation of legal obligations can be challenged in the courts of law. Disregard for taxpayer service is not a matter of right that can be pursued in the courts (Dworkin, 1986, quoted in Menendez, 2001). Jenkins and Forlemu (1993) say that taxpayer service may fail to get results if taxpayers have an idea that tax non-compliance will be treated as a mere misdemeanour rather than a felony.

7.9.4 Section Summary

In seems from the above discussion that the argument that taxpayer service, whether good or bad quality, is not a requirement for the improvement of tax compliance is more justifiable

than the other arguments. Large corporate taxpayers are well-equipped to create the services they need in the preparation, submission and defence of their tax returns. In the literature, there is support for the idea that poor value for money and attitudinal issues in the tax administration may cause taxpayer service to fail, but the fact that taxpayer service is not required at all by large corporate taxpayers is new in the literature. It also seems reasonable to argue that the success of taxpayer service depends greatly on the existence of hard legal measures in the background. This research found (in sections 7.7 and 7.8) that tax audit and imprisonment have a negative relationship with tax compliance. This might be one explanation as to why taxpayer service is less effective in increasing tax compliance, since two powerful coercive measures have failed to improve such compliance.

7.10 Why is Simplified Tax Law Important to Overall Tax Compliance?

Simplified tax law, as was found in chapter 6, plays a significant positive role in improving overall tax compliance. Having a positive relationship only with overall compliance means that simplified tax law is important to those taxpayers who are already good compliers (e.g., in the sense that they are overall compliant). Simplified tax law does not have any impact on those who commit some sort of non-compliance (e.g., in the sense that they are non-compliant with one or more tax obligations).

In order to deal effectively with this subject, the nature of the complexity of income tax laws in Bangladesh has been reviewed. The Income Tax Manual – the main source of all tax laws – is primarily divided into Part I and Part II. Part I is the Income Tax Ordinance, 1984; and Part II is the Income Tax Rules, 1984 (see Figure 7.3 below). Both parts of the manual are designed for all taxpayers, and there are no separate sections or chapters for corporate or non-corporate taxpayers. Part I has 23 chapters with 184 sections, a large number of sub-sections

and explanations, and seven schedules. Some of the schedules are divided into several parts: the first schedule has 3 parts (Part A, Part B and Part C); and the fifth and sixth schedules have two parts each (Parts A and B). The other schedules (the second, third, fourth and seventh) do not have parts.

Figure 7.3: Income tax laws for large corporate taxpayers
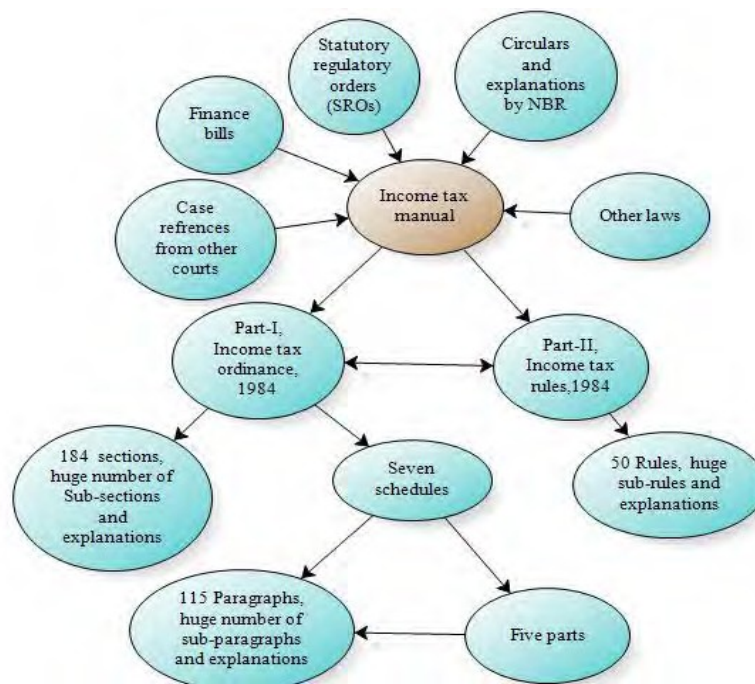
Source: Candidate"s own figure devised from the Income Tax Ordinance and related documents

In the schedules, there are 115 paragraphs and a huge number of sub-paragraphs. In Part II, there are 50 rules and huge numbers of sub-rules and explanations. As well as the Income Tax Manual, Parts I and II, there are SROs (Statutory Regulatory Orders), circulars and explanations issued by the NBR that further complicate the income tax laws. In the interpretation of tax codes, rulings from lower and higher tax courts within the country and sometimes from outside, particularly from India and Pakistan, are frequently referred to. Moreover, every year there are minor and major changes in tax laws through the finance bills.

Other laws of the land having direct and indirect bearing on the understanding and execution of income tax compliance include, but this list is not exhaustive: the Companies Act, 1913 and 1914; the Banking Act, 1991; the Cooperative Societies Act, 1940; the Cost and Management Accountants Ordinance, 1977; the Partnership Acts, 1932; the Code of Civil Procedure, 1908; the Penal Code, 1860; the Chartered Accountants Ordinance,1961; the Value Added Tax Act, 1991; the Emigration Ordinance, 1982; the Registration Act, 1908; the Gift Tax Act, 1963; the Limitation Act,1908; the Evidence Act, 1872; the Foreign Exchange Regulations Act, 1947; the Customs Act, 1969; the Excise and Salt Act, 1944 and; Code of Criminal Procedure, 1898. This shows that the income tax laws that have to be met by large corporate taxpayers are full of complexities. Analysing respondent interviews and the above information, the following explanations were found as to the relationship between overall tax compliance and simplified tax law.

7.10.1 Reduced Compliance Cost

Simplified tax law can reduce tax compliance costs. Reduction in compliance costs may encourage and enable large corporate taxpayers to better honour their compliance obligations. Large corporations bear the compliance cost of maintaining records of their business transactions, which is expensive and difficult. Reduction of this cost means increased financial capacity to meet tax payments. The following comments of the respondents reveal the relationship between compliance costs and simplified tax law and the effect on higher overall compliance:

> Complex tax laws make it difficult and expensive to manage the accounts as laid down in the tax law. Many corporations employ one or two officers, instead of a fully-fledged income tax and accounts department, to reduce tax compliance costs. The money so saved helps indirectly to curb the tax burden and enables higher overall compliance (Respondent, 15).

> Complex tax laws affect the process of confidence building, because they help tax auditors, legal advisors and tax officials to make illegal extra money from the large

corporations. We can better honour our tax liabilities if the law is easier to understand (Respondent, 23).

Simplified tax laws not only reduce the fees of commercial auditors and the expenses for administrative support; they also reduce the chances of misrepresentation and corruption – a major barrier to tax compliance (see section 7.7.3). A related reason why simplified tax law can raise tax compliance is because it widens the base of withholding taxes. In Bangladesh, around 52% of the taxes from large corporations are collected from withheld taxes, and here simplified tax law can be particularly helpful. Some respondents argued that simplified tax law could reduce compliance costs by reducing the cost of litigation caused by ambiguous tax laws.

7.10.2 Complementary Role to Other Compliance Instruments

It was revealed in the respondent observations that simplified tax law can play a complementary role in the effective use of coercive and other persuasive instruments. Penalties, for example, are sometimes so blindly imposed that corporate conditions are never considered. Some corporate non-compliance may be unintentional and simply require clarification and proper understanding of the tax laws, rather than the severe application of a penalty or audit adjustment. One respondent had this to say to make the complementary role of simplified tax law understandable: "A simple and easily understandable tax law is well-accepted by large corporate taxpayers. Even tax audit and other deterrence measures can be successfully applied if tax laws are simple" (Respondent, 12). Respondents argued that the tax authority had the moral right to apply a harsh law only when the tax law was easily digestible and unambiguously understandable.

7.10.3 Enhanced Accountability and Coordination

Simplified tax law, as large corporations believe, can encourage accountability among commercial tax auditors and tax advisors and can make a positive contribution to tax compliance. Commercial tax auditors and tax advisors are major players in the non-compliance game, but their accountability under the tax laws is not well defined. The CFO (Respondent, 18) of a large corporation said that, "Sometimes we are punished for an offence of our commercial auditor or the tax return preparers." The respondent mentioned that tax compliance gaps could be closed up if a tax law clearly defined the roles and responsibilities of the tax professionals. Also it is important to coordinate and synchronise the different tax obligations of large corporations. To achieve this goal in many LTUs around the world, for example in Australia and New Zealand, income tax, VAT, customs and other tax liabilities are set out in a single tax code. In Bangladesh single codification for large corporate tax compliance has yet to be done, although the VAT and income tax LTUs have been set up close to each other to allow an easy flow of information. In this context, an LTU official informed me that a certain amount of non-compliance in the LTU arises from the different ways in which the VAT and income tax departments treat revenue and expenditure. Collaboration and reconciliation between the VAT and income tax laws has become an objective for the large corporations in the LTU. A World Bank Report (2009 :70) states that, "In the interest of transparency, it is a good practice to consolidate all laws with tax implications into one code ...large taxpayer units (LTUs) that administer most or all of the taxes for large businesses under one roof have been introduced in many countries. The use of a single administrative law is especially helpful in the case of administering taxpayers in LTUs."

7.10.4 Addressing Legal Discrimination and Inequity

Respondents stated that the non-compliance of large corporations is often caused by discriminatory and unequal tax laws, which are a direct result of the complexity of the tax laws. Respondents argued that special tax treatments (tax holiday, deductions, credits, etc) allowed to taxpayers gave rise to much tax non-compliance, and this could only be solved by simplifying the tax law, not by penalty or imprisonment. In-depth interviews with respondents demonstrated that the more the tax law is simplified, the better corporations will feel about equity and fairness issues, and the higher tax compliance will be.

The international literature on tax compliance supports some of the arguments made by the respondents. Kopczuk (2006: 11) argues that simplified tax laws make the imposition of penalty and audit actions easier and more acceptable to taxpayers. Kopczuk states (2006: 11): "The bottom line is that complexity makes relying on penalties a much less appealing approach to enforcement. This is so for two reasons: penalties and audits become more costly because they have to be associated with some attempt to distinguish honest taxpayers from cheaters, and they directly reduce the welfare of honest taxpayers." This argument is supported by the findings of Ingraham and Karlinsky (2005) in their study of tax law complexity and its impact on small-business, where they comment that tax law simplification has strong links with tax compliance through its influence on fairness, equity and so forth.

A further reason, as claimed in the World Bank Report (2009) is: the simpler the tax law, the higher is the dependence on withholding taxes to promote reporting and payment compliance. Since large corporations withhold tax from payments to non-large corporations and individuals, their cash flow is augmented by the taxes collected from others. This may even make the compliance cost negative for some large corporations, because of the financial gains they may make out of the augmented cash flow. There are also supporting arguments in

World Bank Literature that simplified tax law has a strong bearing on the unification and coordination of different tax and VAT laws that expedite transparency and the compliance process (see section 7.10.3).

7.10.5 Section Summary

From the above arguments and the empirical evidence it seems justifiable to claim that simplified tax law improves tax compliance mainly through the reduction of compliance costs. With a huge volume of complex tax laws, the cost of maintaining and administrating records becomes very high. Tax law complexity not only makes the compliance process expensive, it lessens taxpayers" interest in visiting the tax office and paying their taxes in a timely and full manner. The money spent on record keeping can be offset by some payment non-compliance, which is one reason for simplified tax law to encourage higher tax compliance. This argument prevails over other arguments because tax compliance involves expenditure for corporate taxpayers. Any persuasive instrument that cuts some of that expenditure is likely to boost the compliance process. The other benefits of simplification, establishing accountability and supplementing the imposition of coercive action, seem to have an indirect role in improving the compliance environment.

7.11 Mutual Understanding: Why Can't It Promote Large Corporate Tax Compliance?

As will be recalled from chapter 6, mutual understanding is not statistically significant in increasing large corporate tax compliance. The only influence this variable has is on the filing compliance of those corporations charged with a 45% marginal tax rate, as was found in the CHAID estimations. Since marginal tax rate was used as a control variable for the statistical analysis, its effect on tax compliance is not discussed here (see section 3.12.1.4 for control

variables). This section mainly discusses why mutual understanding fails to improve large corporate tax compliance.

7.11.1 Conflict of Interest and Priority

Mutual understanding as an instrument does not overcome the conflict of interest and priorities between large corporate taxpayers and the tax administration. The large corporate taxpayers remain under the rigorous surveillance of the tax authority with respect to their payment (i.e., withholding taxes) and reporting obligations. Delays on the part of the taxpayers are generally subject to warnings and penal actions, and attempts are often made to resolve these situations through mutual talks and discussions. Both the large corporations and the tax authority know, and perhaps believe, that the interests of business and the interest of revenue are largely different and are therefore hard to balance with mutual respect and understanding. One respondent argued, "The LTU view and the corporation view of business differ widely. The LTU"s main concern is mobilizing tax revenues, but our priority is to maximize the income and profit of the corporation. Unfortunately, the tax authority doesn"t understand this and sends us legal notices when the filing of returns is delayed by even a week" (Respondent, 3). The respondents expressed frustration that the LTU does not understand the pressure large corporate taxpayers are under from the regulatory inspection and surveillance of accounts preparation. There is no evidence, as the respondent argued, that the tax authority takes an understanding view when accounts preparation is delayed. The finance director of a large commercial bank told me, "The accounts of commercial banks are prepared on the basis of huge and complex documents gathered from numerous branches, which are time and resource consuming to work through. In our own interest, we want to make the accounts as perfect as possible. However, the tax authority smells something else when the accounts preparation is delayed" (Respondent, 5).

7.11.2 Litigation Prone Compliance Environment

Until very recently, mutual understanding as a policy has no legal basis, and usually remains outside the volumes in which tax law is published. Respondents argued that legal obligations should always be addressed with legal means because mutuality of interest and understanding is a vague concept, and arriving at a concrete decision is beyond its scope. Many respondents take the huge volume of appeals cases lodged by large corporate taxpayers as an indication of the failure of mutual understanding. A detail of appeals cases and their effects were discussed earlier, in section 5.4.3. This section presents a sector-specific distribution of appeals cases in Table 7.2. It shows that finance sector corporations are the most likely to be involved in litigation, with 68% of them disagreeing with audits findings and assessments, although audit adjustments are made through mutual agreement.

Table 7.2: Cross-tabulation of appeals cases by corporate sector for tax year 2008-2009

Corporate sectors	Did the corporation appeal?			Total
	Yes	No	No grounds for appeal	
Finance	55	3	22	80
Manufacturing	18	2	23	43
Service	12	3	16	31
Total	85	8	61	154

Source: LTU Appeals and tribunal records

The reasons for litigation are two-fold: first, there is no legal obligation on the large corporations to obey audit adjustments arrived at through discussion. One respondent from the LTU showed me a written declaration from a large banking corporation that the tax agreed on through mutual understanding would be honoured. However, a few weeks later the corporation filed an appeal with the tax courts and refused to pay the taxes. Second, at the appellate level there are opportunities to manipulate and reduce taxes by connivance (discussed in section 5.4.3).

7.11.3 Lack of Knowledge and Training

The other explanation for the failure of mutual understanding is the huge knowledge and skills gap between the audit teams and the representatives of large corporations. Determining tax liabilities for large corporations requires specialised knowledge. Several respondents unanimously agreed that large businesses are full of technical and complex issues. Lack of professional knowledge and understanding by the LTU gives rise to many instances of reporting and payment non-compliance. An investigation was carried out into the taxation and accounting knowledge of tax officials (Charts 7.2 and 7.3), which many respondents identified as a potential barrier to mutual understanding. Out of fourteen tax officials interviewed, only four had academic knowledge of accounting and taxation; the others had only in-service training on tax law.

Chart 7.2 Respondents" academic knowledge of accounting and taxation
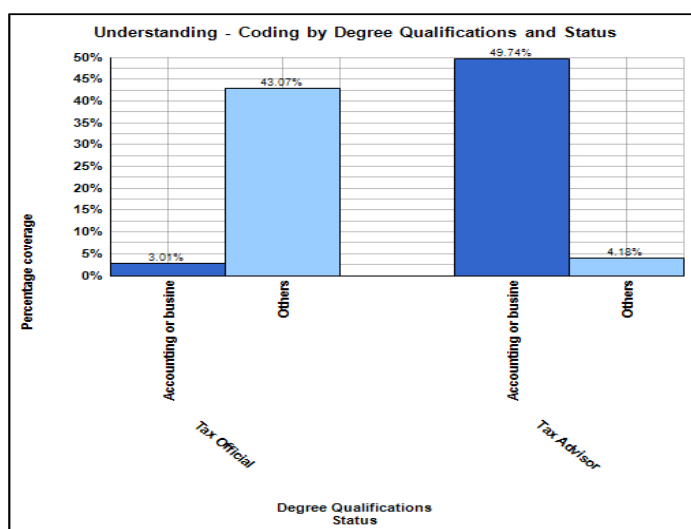
Source: Candidate"s own figure created from field data using Nvivo-9

Chart 7.3 Respondents" work experience and accounting knowledge

Experience versus Degree Qualifications - Cases by Attribute Value
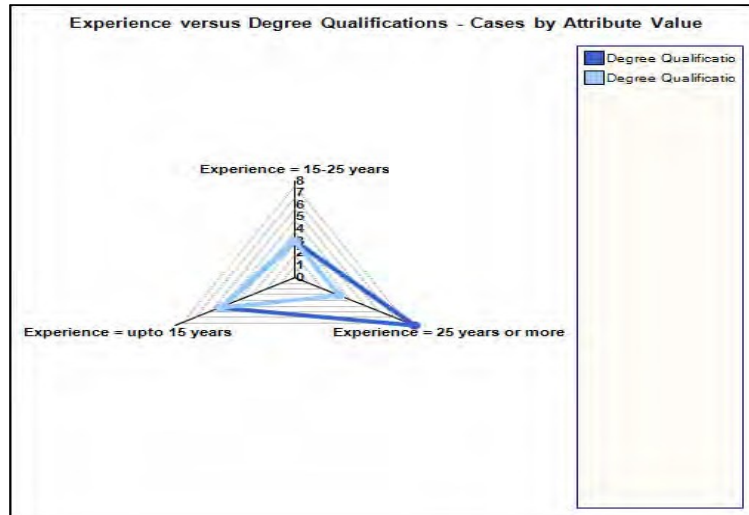
Source: Candidate"s own figure created from field data using Nvivo-9

Chart 7.2 shows that almost all tax professionals have accounting or business degrees. Four per cent of tax professionals have no qualification in accounting, because the ITO, 1984 has allowed retired tax officials to plead tax cases, who do not require having academic qualifications in accounting or taxation. Chart 7.3 illustrates all respondents having 25 or more years of experience have degrees in accounting, because respondents in this experience group are tax professionals. But respondents in the other two experience groups, mostly tax officials, have lesser qualifications in business and accounting. Of the eight respondents in the below-15-years-experience groups, only four have accounting degrees, one of which is a tax professional. In the 15-25 year experience group only three out of nine have accounting degrees, most of which are tax officials.

Addressing this huge gap in accounting and tax knowledge, a respondent argued that tax officials need to have a thorough understanding of financial and tax accounting standards and

rules (Respondent, 15). The respondents insisted that local and international financial and tax accounting standards must be in unison, to reduce confusion among LTU officials. A respondent made the following observation about an occasion on which penalty was wrongly allowed as an admissible expense, when it should have been added as income.

> Because of poor knowledge of a mobile operator"s business and its accounting software, we foolishly allowed penalty as an admissible expense that was imposed on the income from hidden business operations. We failed to understand that the concealed income had to be added to the income of the corporation, rather than simply allowing the penalty on such clandestine business as admissible. Such non-compliances arose only due to our lack of understanding of the mobile operator"s business (Respondent, 27).

In the same vein, other respondents stated that:

> Tax officials must understand the nature of the business they are assessing. Most of the differences of opinion arise when there are gaps of knowledge and understanding between the taxpayers and the tax administration. This takes a critical turn as the large taxpayers are equally, or more, knowledgeable and powerful than the LTU authority. (Respondent, 12)

> LTU tax officials don"t know their job properly and want too many papers. Sometimes they lack proper accounting knowledge and arrive at a wrong understanding of the books of accounts. This creates mistrust between the tax officials and the large corporate taxpayers (Respondent, 17).

This respondent continued to say that sometimes LTU officials failed to observe the spirit of the tax law because of lack of understanding. They disallowed an expense that should have been allowable, for instance, provision for bad debts in the case of the banking corporations. He explained that, according to tax law, legal action must be exhausted in order to claim bad debts as an allowable expense; but the banks argued that further litigation would only add to the expense, without any benefit. This gap in understanding creates a huge number of reporting and payment non-compliances each year. On this point, other respondents stated that the problems of misunderstanding emerged from two sources: first grey tax laws; and second poor knowledge of accounting and taxation. The respondents emphatically argued that

mutual talks and understanding could only increase tax compliance when the tax officials had full knowledge of tax laws and audit standards.

7.11.4 Section Summary

Mutual understanding as a persuasive instrument fails because it does not have any legal back-up. Understanding-based arrangements succeed when both the parties have a common interest and pursuance of that common interest is supported by legislation. Mutuality of interest as a concept does not succeed in securing tax compliance because business and the tax authority"s interests are varied and different. The tax authority"s objective is to maximize revenue, whereas the large corporate taxpayer"s goal is to keep tax payments to the minimum, legally or illegally. Large corporate taxpayers will abandon this goal when the tax authority does the same. No tax administration would risk its present tax collections for the sake of establishing friendship with large corporate taxpayers, although this might increase the long-term potential of tax collection. It also seems that mutual understanding works better in a tax compliance environment of negotiation than in an environment where compliance is measured in terms of the strict application of the relevant laws.

7.12 Chapter Conclusion and Summary

This chapter has identified the potential reasons why coercive and persuasive instruments are important to the understanding of large corporate tax compliance. Findings show that how frequently a coercive instrument is applied is more important than the financial burden it imposes (section 7.4.1). The burden of financial penalty, however huge, can be managed if there are profitable alternative uses for the funds saved by non-compliance (section 7.5.1). Probable financial gain from an act of non-compliance or its profitable alternatives becomes an attractive choice when the possibility of being identified as committing such hidden actions is less probable and the appeal courts are less effective in handling non-compliance

cases (section 7.5.2). The chapter has argued that the probability of being caught for alleged non-compliance is always a factor in the success of a coercive instrument, as is manifested in the positive relationship between tax audit and return filing (section 7.6.2). The single most important factor that undermines the likelihood of a coercive instrument detecting an offence is widespread corruption in the preparation of audited financial reports and the arrangement of tax audit (sections 7.7.1, 7.7.2 and 7.7.3). Added to corruption is the political interference or patronization that further undermines the effectiveness of coercive instruments (section 7.8.2). The findings have suggested that the failure of coercive instruments should not be attributed only to the toughness of the action taken: tough actions must be amenable to reason. The research has revealed that the reasons penalty, audit and imprisonment fail is not totally financial or due to the genuineness of the threat of their application, but also to the lack of capacity that constrains the tax agencies from confronting them.

The chapter has found that persuasive instruments can be effective in improving large corporate tax compliance if they fit to the needs of large corporate taxpayers and provide real value for money by reducing some of the cost of tax compliance (section 7.9.1). It has suggested that persuasive instruments sometimes work if there is a tough coercive environment. In other words, the success of persuasion as a policy tool to some extent depends on the existence of coercive instruments in the background. It has further found that persuasion through increased mutual understanding fails because business and tax administration interests and priorities are different: the large corporate interest is to maximize profit, whereas the tax administration"s is to mobilize tax revenues (section 7.11.1). This chapter has noted that a knowledge gap between tax officials and large corporate taxpayers is one of the fundamental reasons for the failure of persuasive measures (section 7.11.3).

To sum up, the failure or success of coercion or persuasion as tax policy tools depends on different sets of reasons. Coercive instruments fail if the threat of coercion is unreal or the financial burden it imposes does not match the magnitude of the offences committed. Persuasive instruments fail if the value for money of the motivation provided is poor and the legal environment is not tough enough. It was found that the success of persuasive instruments depends more on cost-benefit issues, despite the fact that they aim at working through the ethical or moral concerns of taxpayers.

CHAPTER VIII

CONCLUSION: SUMMARY AND RESEARCH FINDINGS

8.1 Introduction

This chapter presents the conclusions of the thesis and describes its methodological and empirical contribution to knowledge of the subject. Drawing on general and large corporate tax compliance models and approaches, the study set out to solve a research problem which had not previously been investigated: the contribution made by coercive and persuasive tax compliance instruments to achieving tax compliance by large corporations. After reviewing the relevant body of knowledge, an analytic framework was designed to formulate the research question. Details of sample large corporations and data relating to them were collected from the Large Taxpayer Unit (LTU) of Bangladesh. In identifying significant coercive and persuasive instruments through regression analysis, the influence of extraneous variables was controlled. Also, the probable influence of the context variable (i.e., corporate sector – finance, manufacturing or service) was considered (in chapters 5 and 6).

This chapter starts with a brief review of the research question, followed by discussion of the research approach and methods. It then introduces the main research findings and probable explanations as to why an instrument fails or succeeds in securing tax compliance. The arguments are supported by adequate and appropriate evidence collected from tax office documents, a survey and elite interviews. The chapter concludes by focusing on the limitations of the present study and areas for future research.

8.2 Restatement of the Research Problem and Questions

Improving large corporate tax compliance is perceived as a challenging objective for tax administrations. To meet this challenge, specialised tax administration units, known as LTUs, and tax compliance techniques, for example the co-operative compliance model, have been created (sections 2.8 and 2.9.1). A review of the relevant literature reveals two distinct features of tax compliance studies. First, individual taxpayers are the major focus of tax compliance studies, and there has been comparatively little focus on corporate and large corporate taxpayers (Murphy, 2005; Hasseldine et al., 2007; Doyle et al., 2009; Frey and Feld, 2002; Kornhauser, 2007, Torgler, 2003; Torgler, 2005; Chung and Trivedi, 2003; Blumenthal et al., 2001). Second, there has been assessment of the impact of different tax compliance determinants, but scant attention has been paid to whether tough or soft measures (i.e., sticks or carrots) work better in producing higher rates of compliance. As a result, tax compliance studies share an implicit assumption that all tax compliance instruments and the context in which they operate are homogeneous. On the ground, however, coercive and persuasive instruments differ in their probable outcomes and implications in terms of promoting higher tax compliance. The implications of the measures also differ according to the taxpayers to whom the instruments are applied.

Studies identifying the influence of particular tax compliance instruments raise questions, for instance, "How does tax audit affect corporate tax compliance?" From the viewpoint of the present research problem, where compliance instruments are dichotomized as coercive versus persuasive, the question asked is: "What difference does tax audit make as a coercive tax compliance instrument in comparison with other coercive instruments, for example, tax penalty, or in comparison with a persuasive instrument, for example, taxpayer service?" This particular perspective on the problem has received little attention in the field of tax

compliance studies (Kamdar, 1997; Short, 1997; Slemrod and Venkatesh, 2002; Okike, 1998 and Aparicio et al., 2011). Since tax administrations have two different sets of tax compliance instruments, it is imperative that both sets are adequately researched and documented to decide which are more useful in creating tax compliance. As a result of the researchers" perceptions of the limitations of existing tax compliance literature, the present study proposed the following research question, in the hope that its answer would contribute to filling the gap in understanding the tax compliance issues of large corporate taxpayers.

Are coercive or persuasive tax compliance instruments more important for the tax compliance of large corporate taxpayers in the LTU of Bangladesh, and why?

The above question was broken down into five sub-questions, listed in section 3.2. Chapter 5 tackled the first research sub-question, which dealt with the level of tax compliance achieved by large corporations, while chapter 6 attempted to answer the question of whether coercive or persuasive instruments were more important. Finally, chapter 7 explored the underlying reasons for coercion or persuasion being important in the pursuit of large corporate tax compliance.

8.3 Summary of the Thesis

Chapter 1 of the thesis presented the research context and objectives of the study; the research question and methodology to be followed; and the relevance and structure of the thesis. To maintain the logical consistency of the thesis, the principal and specific research questions formulated within the analytical framework were presented in this chapter, which also contained an outline to help the reader navigate through the thesis.

Chapter 2 reviewed the relevant literature on tax compliance up to the point where the research problem for this thesis emerged. It started by breaking down the conceptual framework of tax compliance and describing its constituents. In order to grasp the theoretical

basis and the perspectives of tax compliance instruments, it conducted a comparison of different tax compliance models and paradigms. The standard coercive and the persuasive tax compliance instruments were critically examined to see whether their effects on tax compliance were positive or negative. As the current research looks at large corporations whose tax affairs are dealt with by LTUs, a full review was made of the compliance models and approaches applied to large corporate taxpayers. The chapter specifically identified a gap in the tax compliance literature: there was a lack of studies of the comparative role of coercive and persuasive instruments as applied to large corporate taxpayers. The thinking behind this thesis is that it is important to investigate how significant coercive and persuasive instruments are in inducing tax compliance among large corporations.

Chapter 3 discussed the analytical framework of the study that provided the theoretical structure to deal with the research questions. It focused on the research design and methods for the study. It is important to state that the research did not take a specific perspective on understanding the problem. Rather, all the major viewpoints – economic, political, psychological and administrative – were applied so as to arrive at a comprehensive understanding of the compliance process. Based on the various perspectives, a summary of the underlying research logic was made and a complete procedure was developed to answer each of the research sub-questions. A cross-sectional research design was framed, with an explanation of how the research process would be addressed. As contributory parts of the research process, co-variation between tax compliance (e.g., outcome variable) and compliance instruments (i.e., predictors), a logical flow of arguments from respondent observations, and a priori knowledge were applied. Regression-based statistical models were used to analyse the survey data. Statistical analysis of data might not be sufficient to ensure an understanding of the research problem and the research context, thus interviews with the elite personnel from large corporations and the LTU were conducted. The research questions

were answered using both quantitative and qualitative methods – a mixed methods approach. The first three research sub-questions were answered on the basis of a quantitative approach and the fourth research sub-question was answered on the basis of a qualitative approach.

Chapter 4 presented the fieldwork activities and data collection strategies for the study. Data were collected mainly from tax office documents and a survey. The research depended heavily on tax office records for data on tax compliance. The survey had two parts: a closed-ended questionnaire survey; and interviews conducted with two sets of elite respondents. The questionnaire survey was piloted among a small group of large corporate respondents before being used with the selected respondents. Face-to-face in-depth interviews were later conducted among tax officials and corporate tax representatives to triangulate the survey data and reflect the research context. The researcher chose to focus on the LTU of Bangladesh, which is specifically empowered to deal with large corporate taxpayers. A performance appraisal of the large corporations was made in this chapter. In total, 162 large corporations from the LTU were surveyed and 27 elite interviewees were used. Due to the small sample size, great efforts were made to ensure that the data set of questionnaire survey did not have any missing cases.

Chapters 5, 6 and 7 presented the main findings of the data analysis. The findings were presented in the same order as the research questions were raised in section 3.2. The major findings that contribute to the tax compliance literature were presented for each of the specific question.

8.4   Summary of the Main Findings

The principal objective of the thesis was to ascertain the role of coercive and persuasive tax compliance instruments in creating tax compliance by large corporate taxpayers. This section presents the significant findings of the questions developed in section 3.2 and discusses

whether the questions have been answered properly. It points out the contribution the study has made to the relevant body of knowledge. Finally, the section elucidates the wider implications of the study.

8.4.1To What Extent Are Large Corporate Taxpayers Compliant?

This was the first of the five research sub-questions raised. The objective of the question was to measure the component (i.e., filing, reporting and payment) and the overall (i.e., the components taken together) tax compliance achieved by large corporate taxpayers. Component and overall tax compliance were taken as the dependent or outcome variable in the regression models and measured as a dichotomous variable (section 3.12.1.3). Thus measuring tax compliance meant measuring the dependent variable for the regression models. The measurement process for the dichotomous variable was presented in section 5.4.1. First, the rate of compliance was measured for each of the tax compliance components; and then they were added together to produce an overall, or composite compliance, rate. Data for measuring tax compliance were collected from LTU records and registers. Filing compliance was measured from the filing returns register, which records information on whether corporations submit tax returns by the legal deadline. It was found that 84.41% of LTU corporations were filing compliant (section 5.5.1). As a result, there was no lack of accuracy in the measurement of the level of filing compliance achieved by the large corporate taxpayers.

With reporting compliance, tax audit adjustments were used as the basis for measurement. Corporate taxpayers found with zero audit adjustment were treated as reporting compliant, while corporations with audit adjustments were treated as non-compliant unless the audit demand was quashed at the appellate level. Of the sample large corporate taxpayers, 53.89% were found reporting compliant. Measuring reporting compliance is not as easy as measuring

filing compliance. This is because tax audit does not provide a guarantee that all hidden income has been uncovered, which makes the measurement of reporting compliance slightly questionable. But of the available options, tax audit seemed to be the most suitable one (for detailed discussion see section 5.4.2).

Payment compliance was measured by the payment records of the large corporations. Analysed data showed that 75.32% of the large corporate taxpayers were payment compliant. Any corporations deliberately failing to settle their tax payments in full were considered payment non-compliant and corporations with up-to-date payment records were payment compliant. But a question arises in the measurement of payment compliance that is related to the one discussed with respect to reporting compliance. If there is suspicion about the measurement of reporting compliance, there is also suspicion about the measurement of payment compliance, because the accurate measurement of the latter depends on the accurate measurement of the former. The researcher, however, did not find a better alternative to measure payment compliance than the measurement techniques followed by the LTU administration.

The overall tax compliance rate, measured by totalling the rates for the three components, was 37.01% (section 5.5.2). The reason for measuring tax compliance at both component and overall levels was to see whether persuasive and coercive instruments influenced tax compliance differently at the different levels (section 5.5.3). Such investigations would shed light on the areas of tax compliance that needed special attention. The research found that the sample large corporate taxpayers achieved their highest compliance in filing and their lowest in reporting. When the compliance performance for the three components was added up, the rate fell (Table 5.5 in section 5.5.1). These findings suggest that for large corporate taxpayers it is more difficult to fulfil all their compliance obligations than to fulfil an individual one.

The findings obtained in this way are supported by the literature, which suggests that 60% of large corporate taxpayers in Australia underpaid taxes in 1990 and their payment compliance was below the OECD average (Braithwaite and Braithwaite, 2001). A recent ATO report shows that almost half of the 1100 large corporations in Australia, of which one-fifth had taxable income, did not pay any taxes during the tax years 2005-2008. In the UK, of the 700 large business taxpayers with the Large Business Service (LBS) around 40% did not pay any taxes in the tax year 2005-2006 (House of Commons, UK, 2007). Records also show that one third of the 275 large multinationals in the US did not pay any taxes during 2001-2003 (ICFTU, 2004).

In addition to the above findings, tax compliance was measured on the basis of corporate demographic features- ownership pattern, corporate sector association and corporate location (section 5.5.4).It was found that the finance sector corporations achieved the highest compliance in filing compliance, while the manufacturing and service sector corporations achieved the highest compliance in payment (83.72%) and reporting compliance (67.74%), respectively. In overall terms, manufacturing sector corporations were the top compliers (44.18%). It showed that overall compliance was higher in private limited (43.58%) than in public limited corporations (34.78%), and by location multinational (40.00%) were better than the local corporations (36.43%). Considering the importance of corporate sector in the tax compliance process (see sections 5.5.5 and 6.3.2), it was taken as the context variable for the multilevel regression analysis (e.g., xtlogit models) conducted to identify significant coercive and persuasive instruments in chapter 6.

In the compliance measurement process, the effect of appellate decisions was considered. This feature of the study has made its measurement of tax compliance unique, because the tax compliance literature is silent on how compliance measurement may be affected by the

decisions of appeal courts. Since this research is based on tax office real data, it was able to ascertain the number of tax cases that were treated as non-compliant by the LTU authority but subsequently considered compliant by the tax appellate authority (section 5.4.3). However, it should be noted that the appeal judgment may be equally debatable because of corrupt appeals procedures, and in that case the objectivity of the measurements is subject to criticism.

8.4.2 How Important Are Coercive Instruments?

This question attempts to measure the contribution of coercive tax compliance instruments in achieving tax compliance. All three coercive instruments, i.e. tax penalty, tax audit and imprisonment, were put into the regression models as predictor variables, along with the three persuasive instruments and eight control variables (sections 3.12.2.3 and 3.12.1.4). As the standard model, four binary logistic regression models were fitted: the first model attempted to measure the role of the selected coercive instruments on filing compliance, the second on reporting compliance, the third on payment compliance and the fourth on overall compliance. To see how corporate sector influences the magnitude and nature of the relationship measured in the binary logistic regression, this research conducted CHAID and xtlogit models. The latter model determined the fixed and random effects of the context variable (i.e., corporate sector). Detailed discussion has been made in sections 3.4.2, 3.12.3 and 5.5.5 for the justification of considering the influence of corporate sector in the analysis.

The purpose of conducting separate models on the role of coercive instruments in component and overall compliance was to see whether they were equally important at component and overall levels. For example, imprisonment as a coercive instrument might be important to deal with payment non-compliance but might be unimportant for filing or reporting non-compliance. The purpose of conducting standard logit and then CHAID and xtlogit was to see

how consistent the relationships were between tax compliance and the compliance instruments across different statistical tests. The research found the following coercive instruments influential.

8.4.2.1 The Contribution of Tax Penalty to Tax Compliance

Through the first set of regression models – the standard logistic regression models – it was found that tax penalty significantly (positively) influenced filing and payment compliance but not reporting or overall compliance (sections 6.3.1, 6.6, 6.9.1 and 6.12). According to the CHAID estimations, tax penalty was not a significant predictor of filing compliance. But it remained significant when the fixed (e.g., within-sector) and random effects (e.g., between-sector) of corporate sector was measured by the xtlogit model. Similarly, tax penalty remained significant to payment compliance in the fixed and random effects model. The degree of influence on filing and payment compliance from tax penalty, however, decreased (sections 6.3.4 and 6.9.2) when the influence of corporate sector was taken into account.

8.4.2.2 The Contribution of Tax Audit to Tax Compliance

The second important coercive instrument was tax audit, which was positively significant for filing compliance but negatively significant for reporting, payment and overall compliance (sections 6.3.1, 6.6, 6.9.1 and 6.12). In the standard logistic regressions, the CHAID and in the fixed and random effects models, tax audit emerged as a significant instrument for all compliance components and for overall compliance. As far as filing compliance is concerned, tax audit emerged significant in the standard logit model but not in the CHAID model. However, both in the fixed and random effects models, when the within-sector and between-sector influences of corporate sector were considered, tax audit emerged as a significant predictor of filing compliance. Like tax penalty, the degree of influence of tax audit on filing compliance went down slightly due to the influence of corporate sector. In the case of

reporting compliance, the role of tax audit is more consistent (sections 6.6, 6.6.1 and 6.6.2). Tax audit emerged significant for reporting compliance in the standard logistic regression and in the CHAID and xtlogit models. Similarly, for payment and overall compliance, tax audit was found to be consistently significant in the standard logistic and in the subsequent models.

This finding is not supported by the literature. Among large corporate taxpayers in the manufacturing sector of the US, Mills (1998) finds a positive relationship between excess book income over taxable income and proposed audit adjustment. Mills explains that when the tax authority identifies additional hidden income in large and complex firms, the coefficient between tax compliance and audit adjustment will be positive. Such a coefficient can only be negative, as Mills claims, when large corporate taxpayers outsmart the tax authority by better tax avoidance planning. This study however suggests differently: the coefficient between audit adjustment and tax compliance can be negative when audit and accounting practices are sub-standard and tax audit corruption is rampant (elaborated in sections 7.7.1 and 7.7.3).

8.4.2.3 The Contribution of Imprisonment to Tax Compliance

The third coercive instrument is imposing prison sentences on corporations to improve tax compliance. In the standard regression model, imprisonment was found to be statistically significant (negatively) to payment compliance, which means that imprisonment does not improve payment compliance. This finding of the study contradicts the literature. Aparicio et al. (2011) found evidence that imprisonment as a tax compliance tool improves payment compliance. Aparicio et al. (2011) claimed that 10% of corporations increased tax payments as a result of the inclusion of imprisonment in the Ecuadorian Tax Reform of 2007. However, their findings showed that the majority (70%) of corporate taxpayers did not increase their tax payments. Therefore Aparicio et al. (2011) concluded that the impact of higher punishment is

mixed. Imprisonment as a tough deterrent was also found to be contributing positively towards increased tax payment in the Philippines. The Bureau of Inland Revenue of the Philippines successfully raised tax collection by 43.6% under the Run After Tax Evaders (RATE) programme in 2007, which was based solely on imprisoning taxpayers who were payment non-compliant.

However, when the context variable was taken into account in the CHAID and the xtlogit models, the nature of the relationship between imprisonment and payment compliance turned positive (section 6.9.2). This study argued that the positive effect could turn negative for two reasons: first the aggregation bias; and second the effect of the size of the sub samples within and across the corporate groups (section 6.9.2). This suggests that when the unit of analysis is large corporate taxpayers, tax compliance is likely to decrease with imprisonment; while when the unit of analysis is corporate sectors, tax compliance is likely to increase with imprisonment. For other compliances – filing, reporting and overall – imprisonment was not found statistically significant.

To sum up, this study suggests that among coercive instruments tax penalty is statistically significant to filing and payment compliance, whereas tax audit is statistically significant to filing, reporting, payment and overall compliance. Imprisonment is significant only to payment compliance.

8.4.3 How Important Are Persuasive Instruments?

The three persuasive instruments selected for the study were taxpayer service, simplified tax law and mutual understanding between LTU officials and large corporate taxpayers. In measuring their significance, the same procedure as that followed to determine the significance of coercive instruments, was applied.

8.4.3.1 The Contribution of Taxpayer Service

As was found in section 6.12, taxpayer service was negatively related to overall tax compliance in the standard logistic regression. This means that taxpayer service is statistically significant to those large corporate taxpayers who are compliant in all their tax compliance and taxpayer service affects their tax compliance negatively. It also implies that the importance of taxpayer service is limited to a small segment of the large corporate taxpayers. Likewise, the CHAID analysis showed that taxpayer service is significant only for the segment of large corporate taxpayers who are audited but do not receive additional audit demands (section 6.12.1, Figure 6.10). But for the other segments of large corporate taxpayers, who are the majority, taxpayer service does not influence tax compliance. However, chapter 6 also illustrated that the negative relationship between tax compliance and taxpayer service in the standard logistic regression turned positive in the xtlogit models when the influence of corporate sector was counted (section 6.12.2).

8.4.3.2 The Contribution of Simplified Tax Law

Simplified tax law was found to maintain a statistically significant positive relationship with overall compliance in the standard logistic regression and in the fixed and random effects logistic regression models (section 6.12). It also appeared significant in the CHAID models. This implies that the more the tax laws are simplified, the greater is the possibility that this will improve the number of overall compliant large corporations. The limited relationship between simplified tax law and overall compliance means that simplification is important only to very good compliers, not to those who commit some sort of non-compliance, as has already been argued in case of taxpayer service and overall compliance. Similar to taxpayer service, the significance of simplified tax law is consistent across the standard logit and subsequent models. Thus there is a similarity between the influence of simplified tax law and

that of taxpayer service on tax compliance, since both are related to overall tax compliance only.

8.4.3.3 The Contribution of Mutual Understanding

The probable impact of the other persuasive instrument, mutual understanding, is minimal, since it does not make any direct contribution to the creation of tax compliance at component or overall level. Mutual understanding only becomes important if the marginal tax rate is very high (section 6.3.3, Figure 6.1), which was not a predictor of interest in the regression models and was treated as a control variable. This finding of the thesis agrees with the international literature, which argues that contradictions and imperfect understanding of mutual issues of taxation have a significant influence on tax compliance (Elfers et al., 2006; Scholz and Lubell; 1998 and NTCA, 2009). This research identified several contradictions and conflicts between large corporate taxpayers and the tax authority that adversely affect mutual understanding and tax compliance obligations (section 7.11)

This section, like the previous one, made a successful attempt to measure the impact of persuasive instruments. It focused on each of the persuasive instruments and their roles, based on statistical analysis of the data. Findings suggest that taxpayer service and simplified tax law are statistically significant to a small segment of the large corporations, and mutual understanding does not have any influence on their tax compliance. The next question deals with the probable reason why some instruments emerged significant and others did not.

8.5 Why Are Some Instruments Significant?

The objective of this question is twofold: first, is to compare the contribution of the coercive and persuasive instruments; and second to explain the underlying reasons why some of the instruments are statistically significant and others are not.

8.5.1 Comparative Influence of Instruments

In measuring the comparative influence of these opposite, yet to some extent complementary, sets of instruments in relation to tax compliance, two criteria have been considered: how many tax compliance components are influenced by a particular instrument; and how consistent is the influence at different statistical models. Viewed by these criteria, tax audit is statistically the most significant coercive instrument for tax compliance. In all analyses, from the standard logistic regressions to the xtlogit models, tax audit came out as the most significant instrument. Tax audit was found to affect filing compliance positively, but other compliances – reporting, payment and overall compliances – negatively. In the literature we find that tax audit may influence tax compliance both positively and negatively (section 2.7.1). In our case, the influence was mostly negative, particularly in the case of reporting compliance. Of the other coercive instruments, tax penalty showed a statistically significant positive impact on filing and payment compliance, and imprisonment showed a negative effect on payment compliance, which later turned into a positive relationship for corporations within and between the sectors. This shows that the coercive instruments are statistically significant to both component and overall compliance.

On the other hand, among the persuasive instruments, taxpayer service and simplified tax law were found to be statistically significant to overall compliance only. This tends to suggest that the persuasive tax compliance instruments have a limited influence on tax compliance. The other persuasive instrument – mutual understanding – failed to make any impact at the component or the overall compliance levels.

8.5.2 Probable Explanations of the Instruments' Importance

The probable explanations for the relative significance of the coercive and persuasive instruments were explored using an interpretivist approach. Analysing respondent interviews

and tax office records, this research identified several reasons for the significant positive relationship between filing compliance and tax audit: first, the closeness that grows throughout formal and informal tax audit interactions makes the large corporations responsible and aware of their filing obligations. However, this closeness does not have a lasting impact on return filing. Rather, it is the risk that non-filers are more likely to be audited that induces filing compliance (section 7.6.2). A stronger reason for this behaviour is that filing compliance is easier compared to other compliances, and the potential gains from other non-compliances are higher than those from filing non-compliance (section 7.6.3). Moreover, it is difficult for large corporations to remain unregistered in the tax network and do business underground.

The reasons why tax audit may backfire in creating reporting, payment and overall compliance are somewhat different. The first reason this study found is gross falsification in audited financial statements, along with unresolved and conflicting local and foreign accounting standards that creates disbelief in submitted accounts (sections 7.7.1 and 7.7.2). The study explored tax officials" disbelief in submitted accounts, which leads to doubts and outright rejection of the income reported by corporations. This disbelief motivates many corporations to be untruthful to their tax declarations. The other important explanation is widespread tax audit corruption (section 7.7.3). Large corporate taxpayers underreport and underpay because they know that facts can be suppressed in connivance with the audit team. The audit team, for its part, collaborates because it has fallen prey to the offer of bribery. The research argues that tax audit corruption is not only a tax administrative issue, but is also a well-orchestrated non-compliance game played by large corporate taxpayers, the tax audit team and professional accountants and tax advisors.

The study found that audit measures might fail when reported income was taken as a function of audit selection. The higher the reported income, the higher the chance of being selected for tax audit: which encourages taxpayers to underreport income and reduce the risk of audit selection (section 7.7.4). In the face of tough audit action, tax non-compliance may worsen because of the high frequency of tax audit and the cost of responding to it. Tax audit is expensive, and facing tax audits regularly means making financial arrangements to meet that expense. As a result, non-compliance becomes a necessity rather than a choice (section 7.7.5).

It is argued in this research that beyond being coercive, tax audits may sometimes be persuasive, despite the degree of coercion being higher than that of persuasion. This is because the accounting practices of large corporations are complex and in some cases conflicting, and so are less likely to end up being dealt with severely. It needs a certain amount of motivation and application to make tax audit effective (section 7.7.1, last paragraph). Also, audit staffs often harass corporations by disbelieving the figures they present where respectful care and timely delivery of service might improve compliance issues.

Of the coercive instruments, tax penalty and imprisonment have comparatively little influence on large corporate tax compliance. Tax penalty is useful to deal with filing and payment non-compliance because it is the most frequently employed deterrent in curbing non-filing and non-payment offences. Large corporate taxpayers are certain that failure to file and pay on time will bring penal action. Therefore, the certainty of the penal action makes it a successful tax compliance instrument for improving filing and payment behaviours. The thesis found that the use of penalty as a lever could only be effective in reducing non-compliance if there is no alternative profitable use for underreported income (section 7.5.1). Analysed data also showed that fines imposed for reporting non-compliance are comparatively low in relation to the potential gains that can be made from depositing

underreported income with a commercial bank. Viewed from the point of view of cost-benefit analysis, large corporate taxpayers find it economically more attractive to disregard reporting obligations. This tendency of large corporate taxpayers is encouraged by the possibility of getting a favourable judgement on reporting and payment non-compliance from the appeal courts, which enjoy enormous discretionary power in making their decisions (section 7.5.2).

Imprisonment as a coercive instrument influences payment compliance negatively. No other component compliance, or overall compliance, is affected significantly by prison terms, either negatively or positively. The thesis identified four potential explanations for this. First, imprisonment is not a rational policy tool for deterring payment non-compliance, particularly when the taxpayer is financially solvent or the reasons for non-compliance are a matter of legal dispute rather than negligence (section 7.8.1). It was argued that large corporate taxpayers have the financial means to meet undisputed tax bills. Second, imprisonment fails due to the politically biased and unequal application of criminal prosecutions (section 7.8.2). Third, the threat of punishment by a prison term is, in most cases, unreal. Imprisonment is not a likely choice as a policy tool for tackling tax non-compliance (section 7.8.3). Fourth, there are severe administrative bottlenecks in terms of cost and complex bureaucratic procedures that inhibit the initiation of criminal prosecutions against the most affluent section of taxpayers. This research argues that the politicization of criminal prosecution and the lack of smooth coordination between the judiciary and the tax administration are the fundamental reasons why imprisonment fails to improve compliance (section 7.8.6).

The study looked at the respondent observations for an explanation as to why the nature of the relationship between imprisonment and tax compliance changes to positive when the effect of corporate sector is considered, and it found two reasons in addition to those mentioned in section 6.9.2. First, there are similarities in business and strategic approaches

within corporations in the same sector. Second, corporations in the same sector are subject to the same sort of regulatory and monitoring practices by their controlling authorities. These similarities may cause large corporations in the same sector to follow each other and react to tax compliance obligations in a similarly positive way when imprisonment is used as a compliance instrument (section 7.8.5).

On the persuasive side, taxpayer service fails to improve tax compliance because even if it is good, it doesn"t provide the value for money that large corporate taxpayers expect (section 7.9.1). Taxpayer service can only produce compliance if the tax authority and large corporate taxpayers depend on each other in a service provider-client relationship. To be useful in promoting tax compliance, taxpayer service must reduce some of the compliance cost of the service recipient large corporate taxpayers. It was evident from respondent observations that taxpayer service can be useful when the tax administration has the required efficiency and positive attitude to service provision (section 7.9.3). The tax authority must have the belief that quality taxpayer service can change the compliance level. It was also argued that taxpayer service can be effective in producing higher tax compliance when there are tough legal consequences for those who consume a particular service and then disregard their tax obligations.

The finding that taxpayer service can fail to ensure tax compliance if it does not improve tax administration efficiency also has support from the literature. Taliercio (2004) examined the contribution of four aspects of taxpayer service – tax payment, the issuing of regulations, information provision, and tax audit – on tax administration efficiency and tax compliance among large corporate taxpayers in Bolivia, Mexico, Peru and Venezuela. He found that only tax audit has a positive influence on tax administration effectiveness and higher tax compliance. On the failure of taxpayer service to improve tax administration efficiency and

tax compliance, Taliercio (2004) argues that, „responsive and helpful"" service increases compliance, not the quality of the taxpayer service. This implies that taxpayer service to create higher tax compliance needs to be supported by improved tax administration efficiency, positive attitude and trust in tax officials. Finally, the study made the same argument for the change in the nature of relationship between tax compliance and taxpayer service as an effect of corporate sector (section 7.9) as it made for tax compliance and imprisonment (section 7.8.5).

Interestingly, an opposite argument applies as regards the statistically significant positive influence of simplified tax law on tax compliance. Simplification contributes to higher compliance through reduction of the compliance costs that large corporations bear for maintaining records and a professional tax set up. Simplification reduces much of the scope for illegal and corrupt business dealings. It enables tax agencies to avoid tough coercive action by helping corporations avoid non-compliance that is unintentional. The thesis argues that beyond motivational incentives, simplified tax law plays a complementary role to the application of coercive instruments. In addition, simplified tax law not only makes compliance obligations understandable, it provides a clear accountability structure for tax professionals and corporate tax representatives. Simplification can improve tax compliance by uniting all tax obligations under one tax system. The fact that simplification can stop the migration of large corporate taxpayers to the underground economy, and unification of all tax laws can facilitate higher tax compliance, is well documented in the literature (World Bank, 2009; OECD, 2009). Even the DFID memorandum of understanding with the NBR acknowledged the need for a unified VAT and Income Tax department for the management of large corporate tax compliance in Bangladesh. The bottom line of the arguments is that if simplification promotes the unification of divergent tax laws, it will reduce compliance costs and improve tax compliance.

On the failure of mutual understanding as a persuasive tool, the thesis points to the conflict of interests and priority between large businesses and the tax administration. The corporate interest is to maximize profit and the tax administration"s interest is to mobilize tax revenues. Again, enhanced understanding may be a negotiation-based or an administrative-compliance tool; but it does not have any legal basis. The failure of mutual understanding is apparent in the huge amount of litigation initiated by large corporate taxpayers, particularly with respect to reporting and payment non-compliance. Finally, mutuality of understanding also fails due to the huge gap in knowledge and skills related to tax and accounting between the large corporations and the tax administration.

8.6 Overall Study Findings and Contribution

Of those coercive and persuasive tax compliance instruments selected for the study, which are more important to the understanding of large corporate tax compliance in the LTU of Bangladesh, and why? Although there has been plenty of research on tax compliance, there is relatively little on the comparative influence of coercive and persuasive tax compliance instruments (see also Fehr and Schmidt, 2007; Hanlon et al. 2005; Slemrod, 2004; Mills, 1998). This is particularly true in the case of large corporate taxpayers (section 3.2), for whom the combination of these instruments is seen as one of the means of improving large corporate tax compliance (sections 2.9.1, 2.9.2 and 2.9.3). Therefore, this research contributes to the literature by presenting a way of modelling as well as empirically examining the comparative effects of coercive and persuasive tax compliance instruments on large corporate taxpayers.

This research has empirically proved that neither coercion nor persuasion can secure large corporate tax compliance when pursued separately (see also Timmons, 2004; Imbeau, 2009; James and Alley, 1999; Braithwaite and Braithwaite, 2001; DFID, 2009; Kirchler, Hoelzl and

Wahl, 2007; Tuck, 2004; Hendrix, 2008). It argues that creating tax compliance among large corporate taxpayers needs a combination of coercive and persuasive tax instruments, where the former seem to play a more significant role than the latter. For instance, effective imposition of tax audit to a large extent depends on how simple the relevant tax laws are (section 7.10.2), but the ultimate success of audit action depends on the toughness of sanctions for disobeying audit requirements (section 7.9.3, paragraph 2).

This research has provided strong evidence that the success of coercive instruments depends on their frequency of application (sections 7.4.1 and 7.4.3), a lack of profitable alternative uses for concealed income (section 7.5.1), limited scope for illegal influence on appeal judgements (section 7.5.2) and increased risk of detection (section 7.6.2). On the other hand, coercive instruments fail due to huge tax administration corruption (section 7.7.3), poor auditing and accounting standards within a weak accountability framework (sections 7.7.1 and 7.7.6), lack of rationality in, and unreliability of, the threat they pose (sections 7.8.1, 7.8.2 and 7.8.3), and a politicised tax administration (section 7.8.6). The research claims that the persuasive instruments produce an outcome if they meet taxpayer needs effectively (section 7.9.2), provide real value for money (section 7.9.1), reduce tax compliance costs (section7.10.1), minimize conflicts of interest and knowledge gaps between large corporations and the tax administration (sections 7.11.1 and 7.11.3), and play a complementary role to that played by coercive instruments (sections 7.9.4 and 7.10.2).

Another contribution of the study is to analyse tax compliance both at component and overall levels from contextual viewpoints. The study took corporate sector as a relevant context for the hierarchical nature of compliance performance. In this regard, it was found that coercive instruments are important at both the component and overall levels, while persuasive instruments are important at the overall level only (section 6.14). This suggests that

persuasion affects outcomes for only a limited segment of the large corporations (section 7.9). Finally, the research found that understanding of large corporate tax compliance requires understanding of the corporate sectors to which large corporations belong and the impact of those sectors on compliance performance (sections 6.3.2 and 7.8.5).

8.7   Methodological Implications of the Study

This study has made some methodological contributions to understanding the debate on the comparative effects of coercive and persuasive tax compliance instruments. First, in measuring the tax compliance performance of large corporations, the study used real tax office data and is one of the first to do this in the context of a developing country"s tax administration (see also Gupta and Mookherjee, 1998; MacLaren, 2003). Real tax office data were also used for measuring some predictors and control variables (sections 3.12.1.3 and 3.12.1.4). To cover some areas where real tax office data were not available or accessible, due to improper data management in the tax office, a questionnaire survey among real large corporate taxpayers was conducted. This allowed reflection of the opinions of concerned taxpayers in the measurement process.

Second, this study is exceptional in terms of the methods used (sections 3.7 and 3.8). It employed a quantitative approach in measuring tax compliance performance and the effect of coercive and persuasive tax compliance instruments on it. To explain why a particular coercive or persuasive instrument worked, semi-structured elite interviews were conducted among tax officials and corporate leaders. The questionnaire survey and the in-depth interviews were conducted among different sets of respondents, which is an exceptional means of data triangulation. Most tax compliance studies have used one method of analysis, and on a very few occasions a mixed-methods approach has been used.

Third, the study selected a unit of tax administration and types of taxpayers of which the researcher had adequate knowledge. Prior knowledge about the tax administration helped with the understanding of the research context, the verification of the quality of information obtained from the tax office, and the selection of participants relevant to the interviews, without using power relationships (sections 4.4 and 4.6). Methodologically, pre-exposure to the research field contributed to the efficient and objective use of the data, and to preventing the concealment of facts by the respondents. In addition, knowledge of the research setting enabled the researcher to control the data collection process by reducing the involvement of assistants in the crucial stages of collection.

8.8 Implications for Theory

In the design of the thesis, alternative theoretical approaches that motivate and put pressure on the tax compliance decisions of large corporations were reviewed. These included economic, psychological, social, political and tax administrative theories (see sections 2.4 and 3.9).The results of the thesis demonstrated that a coercive approach is often more significant than a persuasive one in inducing compliance in large corporate taxpayers, although a mix of both is desirable. How does this finding fit with the alternative theoretical explanations?

The findings of the thesis are consistent with the argument that penalty (Schwartz and Orleans, 1967; Varma and Doob, 1998; Baron and Kennedy, 1998; William, 2001), tax audit (Kamdar, 1997; Witte et al., 1987) and imprisonment (ADB, 2009; Klepper and Naggin, 1989b; Aparicio et al, 2010; Levi, 2009; Shover and Hochstetler, 2006) affect tax compliance decisions when the threat of punishment is genuine and the chance of being identified for an alleged non-compliance is high.The argument that the genuineness of the threat of

punishment improves large corporate tax compliance is consistent with the economic or expected utility theory (section 2.4.1).

The findings of this research show that there are some circumstances in which inducing large corporate tax compliance through quality taxpayer service (Bird, 2004; Barbone et al., 1999) and mutual understanding (HMRC, 2006; ATO, 2007; Brem and Tucha, 2007) seems less impressive than inducement through simplification of tax laws (OECD, 2006; Perry, 2007; Slemrod, 1985; Morris and Londsdale, 2004). This result of the thesis mainly agrees with the economic approach because of the evidence that quality taxpayer service fails in inducing tax compliance unless it can lessen some of the tax compliance costs (section 7.9.1).

The above argument carries additional weight when tax law simplification is argued to be successful if it reduces tax compliance costs by reducing the need for extensive accounting and paper work (section 7.10.1), dependence on tax professionals, and scope for corruption and misinterpretation of tax laws (section 7.10.2). However, the argument that a positive tax administration attitude may improve the effectiveness of taxpayer service corresponds to the intention theory (section 2.4.4). According to this theory tax morale or a sense of civic duty among tax officials can resolve much of the latter"s bureaucratic inertia and risk-averse mind-set.

The evidence that tax audit fails when there is massive corruption (section 7.7.3) and falsification in audit and accounting standards (section 7.7.1) better reflects the economic rationality of large corporate and tax administration behaviours. The thesis found that imprisonment as a policy tool failed, largely due to the politicization of the criminalization process (section 7.8.2), huge tax administration costs (section 7.8.4) and uncertainty about prison terms (section 7.8.3). Arguably, favouring politically well-connected corporations and

vilifying others, as was the case during the army-backed caretaker government in Bangladesh, upholds the political economy model of tax compliance (section 2.4.8).

Perhaps the relevance of economic theory is more apparent in the failure of mutual understanding as a compliance instrument (section 7.11), as evidenced by the conflicts of interest between business profits and tax revenues (section 7.11.1), and by the tax culture of mistrust and litigation (section 7.11.2). But the latter proposition is equally conceivable as a fact of corporate tax morale and attitudes, and therefore corresponds to the intention theory (section 2.4.4).

The argument that non-compliance is a rational economic choice makes further sense when the profitable use of under-reported income becomes an important factor in understanding the strategic game the corporations play with the tax authority. High interest rates on commercial bank deposits and borrowing (section 7.5.1) make it more profitable for large corporations to under-report income and divert the hidden income into meeting business expenses or investing in an interest-yielding safe deposit.

In summary, the results of the research can be understood from the various theoretical angles outlined in this thesis, but economic theory seems to have a dominant role in the findings of the research.

8.9 Generalizability to similar context

The tax compliance environment for large corporations in Bangladesh demonstrates several common features: a high level of corruption, lack of democratic accountability, a culture of mistrust, and political interference in tax enforcement. The international literature on tax compliance suggests Bangladesh"s experience is not unique: for example, LTU corruptions in Uganda or tax audit problems in the Philippines (section 7.7.2). The other similarity is that, in

almost all tax systems, LTUs" operational mechanism is similar – a client-based function-oriented organizational structure (sections 2.9 and 2.10) established under the central role of the IMF (section 2.8.1). There are many areas of tax law and its legal framework in which developing countries follow common practices: for example, there are tax law similarities among the systems of India, Bangladesh and Pakistan (section 7.10).According to Moore (2008), developing country tax systems have in common their high level of tax law complexity, their litigation practices, their record-keeping and the bureaucratic design of their tax governance. These similarities indicate some possibilities that the results of the thesis will be relevant to countries with comparable systems and circumstances.

But in countries with different legal histories or political and institutional systems, the coercive and persuasive instruments tested would not be expected to yield similar outcomes. It is equally important to note that even where there are similarities among countries in their compliance approaches or compliance environments, each country"s experience is its own. Therefore verification of the study results in different contexts is essential.

Apart from the contextual issues, the research design and analytical issues of a study also impinge on the generalizability of the study results. Field surveys conducted among real LTU corporate taxpayers, selected through probability sampling (section 3.11), contributed to the reliable and valid measurement of data – an essential condition for generalizability of study results (section 5.3.1). A high response rate (95.65%) in the survey questionnaire further contributed to the generalizability of the study. However, the large number of finance sector corporations represented in the sample data might not be a common feature for all LTUs. In Bangladesh, all finance sector corporations – banks, insurance companies and institutions providing lease financing – are placed within the LTU"s specialized jurisdiction. This may reduce the generalizability of the study results.

8.10 Limitations of the Study

Resource and time constraints prevented the researcher from studying the compliance behaviours of large corporations from more than one LTU, which has limited the generalizability of the study. Another limitation was the small sample size. However, by collapsing the initial categories of the predictor variables, it was possible to mitigate this problem. There was also the problem of incomplete data on appeal decisions. Some cases were still open at the appeal court or had been referred to the higher court for further decisions. From the literature, it was found that there is a tendency among taxpayers to take shelter in the appeals procedure, in order to hold up tax payment or understate the accurate amount of tax owing (see Ongwamuhana, 2011; Sebastian, 2008).

A particular limitation of the study is in the measurement of penalty, imprisonment, taxpayer service, simplified tax law and mutual understanding based on the stated preferences of respondents. This research, for example, did not segment taxpayer service into different components and run a factor analysis to measure what constitutes taxpayer service. As a

result, there is a strong likelihood that different respondents perceived taxpayer service differently and answer differently. However, data on these variables were collected on a test-retest basis and were checked to see whether the answer in the first and second streams were consistent over time. Thus the study was not affected by the possibility that the measurement of some variables might have been different, due to differences in respondent perceptions.

The study explored probable explanations for why the selected coercive and persuasive instruments are important and how they are positively or negatively related to the tax compliance behaviours of large corporate taxpayers. But it did not shed major light on why the nature of the relationship changes from negativity in the standard logistic regression to positivity in the xtlogit models. Additionally, the use of corporate sector as context variable limited the generalizability of the study.

8.11 Areas for Further Research

Contextual assessments of the influence of coercive versus persuasive instruments from the perspective of large corporations seem to be a novel method of researching corporate tax compliance. Further studies around this topic that use larger sample sizes and include wider and different coercive and persuasive aspects of tax compliance are necessary. In particular, studies on how coercive and persuasive instruments have to be designed with respect to the different corporate classes may be of pivotal importance. This study has indicated that there is very little literature considering the contextual issues in tax compliance studies. Besides corporate sector, used as the context variable in this study, there may be further issues, for example ownership patterns or location, to be considered as context.

The effect of taxpayer service on large corporate tax compliance is an innovation in tax compliance research and will require further studies. The findings of this study suggest that tax audit and taxpayer service – two major instruments – are playing a negative role in the

creation of tax compliance. Further studies are required to confirm the findings in the centrality of tax compliance research and to inform policy. Likewise, the nature of the relationship between imprisonment and tax compliance turned positive from the earlier negative relationship in the logistic regression. This study could not find any strong reason as to why this should happen and this could be a fertile area for future research.

To conclude, this research found that the explanation of tax compliance patterns is not straightforward. A complex set of tax environment issues interact with coercive and persuasive instruments in the compliance generation process. Of particular importance are the strategic games the large corporations and LTU officials play around reporting compliance; but also important are widespread tax audit corruption, the constraints in the LTU"s capacity to pursue criminal prosecutions, and the inability to provide service of real value. To better understand the effectiveness of the coercive and persuasive instruments, future research on the LTU compliance environment – including its legal enactment system and regulatory process of tax audits – would be required.

REFERENCES

Abrie, W and Doussy, E. 2006.Tax compliance obstacles encountered by small and medium enterprises in South Africa. *Meditari Accountancy Research*, 14 (1), 1-13.

Adam, S., Browne, J and Heady, C.2010. Taxation in the UK. In Adam,S., Besley, T., Blundell,R., Bond, S., Chote, R., Gammie, M., Johnson, P., Myles, G and Poterba, J (eds.) *Dimensions of tax design: The Mirrlees Review.* Oxford: Oxford University Press.

ADB. 2009. *Process map on the criminal Prosecution of tax evasion in the Philippines*. Manila: Asian Development Bank.

Aguilar, J. L. 1981. Insider research: An ethnography of a debate. In D. A. Messerschmidt (eds.), *Anthropologists at home in North America: Methods and issues in the study of one's own society*, pp.15-26. Cambridge: Cambridge University Press.

Akerlof, G and Romer, P.1993. Looting: The economic underworld of bankruptcy for profit. *Brookings Papers on Economic Activity,* 2(1993), 1-73.

Alink, M and Kommer, V. 2011.*Handbook on tax administration*. Amsterdam: IBFD.

Allingham, M. G and Sandmo, A.1972. Income tax evasion: A theoretical analysis. *Journal of Public Economics,* 1 (3-4), 323-338.

Allison, P.D.1999. *Multiple regression: A primer*: Thousand Oakes, California: Sage Publications.

Allison, P.D. 2010. *Survival analysis using SAS: A practical guide*. 2nd ed. Cary, USA: SAS Institute Inc.

Alm, J. Gary. H. M and Schulze, W.D.1992a.Why do people pay taxes? *Journal of Public Economics*, 48(1), 21-38.

Alm, J., Jackson, B and McKee, M. 1992b.Institutional uncertainty and taxpayer compliance.*American Economic Review*, 82 (4), 1018-1026.

Alm, J and Vázquez, M. 2003.Institutions, paradigms, and tax evasion in developing and transition countries.In M.J. Vázquez and J. Alm (eds.), *Public finance in developing and transitional countries,* pp. 146-178.Cheltenham: Edward Elgar.

Alm, J., Vazquez, J.M. and Rider, M. 2006.*The challenges of tax reform in a global economy*. New York: Springer.

Alvesson, M.2003.Methodology for close-up studies: Struggling with closeness and closer. *Higher Education*, 46(2), 167-193.

Andreoni, J., Erard, B and Feinstein, B.1998. Tax compliance. *Journal of Economic Literature,* 36(2), 818-860.

Andreoni, J., Gillen, B.J. and Harbaugh, W.2011. The power of revealed preference tests: Ex-post evaluation of experimental design, available at http://economics.stanford.edu/files/Gillen11_2.pdf, accessed on 10/4/2011.

Andrew, P.S., Pederson, P.M. and McEvoy, C.D. 2011. Research methods and design in sport management. Illinois: Human Kinetics.

Aparicio G., Carrillo, P and Emran, S. 2011.Taxes, prisons, and CFOs: The effects of increased punishment on corporate tax compliance in Ecuador. Institute for international economic policy working paper series, Elliott School of International Affairs: The George Washington University.

Appelgren, L.2008. The effect of appeal strategy information on tax compliance- an empirical study.E-journal of Tax Research, 6(1), 67-8.

Argyrous, G. 2011. *Statistics for research: With a guide to SPSS*. London: Sage Publications.

Arnold, B. J and McIntyre, M. J. 2002.*International tax premier*. The Hague: Kluwer Law International.

Atkinson, P., Cofee, A and Delamont, S. 2003. Key themes in qualitative research: Continuities and changes. California: Alta Mira press.

Auerbach, A., Devereux, M and Simpson, H. 2008.Taxing corporate income, NBER Working Paper, available at http://www.nber.org/papers/w14494, accessed on 16/06/2012.

Australian Tax Office (ATO). 2007. Australian tax office annual report 2006/2007.Canberra: Australian Taxation Office.

Australian Tax Office (ATO). 2009. ATO to come down on big business, available at http://www.theage.com.au/business/ato-to-come-down-on-big-business, accessed on 19/7/2011.

Axinn, W. G. and Pearce, L. D. 2006.*Mixed method data collection strategies*. Cambridge: Cambridge University Press:

Aykin, N. 2009.*Internationalization, design and global development*. Berlin: Springer.

Aymer, C, F. 1999. The political and tax capacity of government in developing countries. *Kyklos*, 52(3), 391-413.

Ayres, I and Braithwaite, J.1992.*Responsive regulation: Transcending the deregulation debate.* New York: Oxford University Press.

Babbie, E.2004. *The practice of social research*. Belmont, CA: Wadsworth.

Baer, K., Benon, O and Oro, J. 2002. Improving large taxpayer compliance. IMF Occasional Paper-215.Washington, D.C: IMF.

Bajpai, N. 2011.*Business research methods*. New Delhi: Dorling Kindersley.

Baker, H. 2006. Running ANOVA on binary data, available at http://listserv.uga.edu/cgi-bin/wa?A2=ind0608&L=spssx-l&D=0&P=50450, accessed on 08/10/2011.

Baldry, J.C. 1986. Tax evasion is not a gamble: A report on two experiments. *Economic Letters*, 22(4), 333-335.

Balluerka, N., Gorostiaga, A., Benito, J.G and Hidalgo, M.D. 2010. Use of multilevel logistic regression to identify the causes of differential item functioning. *Psicothema*, 22(4), 1018-1025.

Bamberger, M. 2000. *Integrating qualitative and quantitative research in development projects.*Washington, D.C: World Bank.

Barany, J .L. 2009.A political economy model of tax evasion. London School of Economics and CEP, available at http://www.brunochiarini.it/conference/Barany.pdf, accessed at 20/8/2010.

Barbone, L., Gupta, A., Wulf, L.D and Hansson, A.1999. Reforming tax systems: The World Bank record in the 1990s. Washington, D.C: World Bank.

Barlow, D. H and Durand, V. M. 2011. *Abnormal psychology: An integrative approach*. Belmont, CA: Wadsworth.

Baron, S. W. and Kennedy, L.W. 1998.Deterrence and homeless male street youths.*Canadian Journal of Criminology*, 40(1), 27–60.

Bateman, I.J., Carson, R.T., Day, B., Hanemann, M., Hanley, N., Hett, T., Jones-Lee, M., Loomes, G., Mourato, S., Ozdemiroglu, E., Pearce, D.W., Sugden, R., Swanson, J.2003.*Economic valuation with stated preference techniques: A manual*. London: Edward Elgar.

Bazeley, P.2003.Computerized data analysis for mixed method research. In A. Tashakkori and C, Teddlie (eds.), *Handbook of mixed methods in social and behavioural research*. Thousand Oaks, CA: Sage Publications.

Becker, G. S. 1967. Crime and punishment: An economic approach. *Journal of Political Economy, 76* (2), 169–217.

Becker, H.S. 1996. The epistemology of qualitative research. In J. Richard., C. Annie and A.S. Richard (eds.), *Ethnography and human development: Context and meaning in social enquiry*, pp.53-72. Chicago: Chicago University Press.

Bergkvist, L and Rossiter, J.H. 2007. The predictive validity of multiple-item versus single item measures of the same constructs. *Journal of Marketing Research*, 48 (2), 175-184.

Bergman, M. S. 2003. Tax reforms and tax compliance: The divergence path of Chile and Argentina. *Journal of Latin American Studies*, 35(3), 593-614.

Bergman, M and Armando, N.2006. Do audits enhance compliance? An empirical assessment of VAT enforcement. *National Tax Journal*, 59 (4), 817-832.

Beron, K.J., Tauchen, H.V. and Witte, A.D. 1988. A Structural equation model for tax compliance and auditing, National Bureau of Economic Research, available at http://www.nber.org/papers/w2556.pdf?new_window=1, accessed on 09/04/2011.

Bette, M. (No date).Design and implementation of control plans according to specific behaviours, available at https://docs.google.com/viewer?a=v&q=cache, accessed on 01/02/2011.

Bevir, M. 2005. *New Labour: A critique*. Oxford: Routledge.

Biemer, P. 2011. *Latent class analysis of survey error*. New Jersey: John Wiley and Sons.

Bird, R M. 1996. Why tax corporations? Working paper 96-2, Technical Committee on Business Taxation, Canada, available at, http://publications.gc.ca/collections/Collection/F21-4-96-2E.pdf, accessed on 23/09/2011.

Bird, R.M. 2004. Administrative dimensions of tax reform. *Asia-Pacific Tax Bulletin*, March, edition, 134-149.

Bird, R.M and Jantscher, de M.C. 1992. *Improving tax administration in developing countries*: Washington, D.C: IMF.

Black, J, S., Mendenhall, M and Oddou, G.1991.Toward a comprehensive model of international adjustment: An integration of multiple theoretical perspectives. *Academy of Management Review*, 16 (2), 291-317.

Blumenthal, M., Christian, C and Slemrod, J. 1998.The determinants of income tax compliance: Evidence from a controlled experiment in Minnesota. NBER working paper No. 6575, available at http://www.nber.org/papers/w6575, accessed on 02/09/2010.

Blumenthal, M., Christian, C., and Slemrod, J. 2001. Do normative appeals affect tax compliance? Evidence from a controlled experiment in Minnesota, *National Tax Journal,* 54(1), 122-138.

Bodin, J. P. 2003.LTU case studies, Harvard Tax Program, Harvard University.

Bogdan, R. and Biklen, S. K. 1992.*Qualitative Research for Education*. Boston: Allyn and Bacon.

Bordens, K.S. and Abbott, B.B. 1991. Research design and methods: A process approach. 2nd ed. California: Mayfield.

Braithwaite, J. 2002. *Restorative justice and responsive regulation*. New York: Oxford University Press.

Braithwaite, J and Wirth, A. 2001.Towards a framework for large business tax compliance, Centre for Tax System Integrity, working paper no 24, Australian National University.

Braithwaite, V. 1998. Communal and exchange trust norms, their value base and relevance to institutional trust. In V. Braithwaite and M. Levi (eds.), *Trust and governance*, pp. 46-74. New York: Russell Sage.

Braithwaite, V.2003.*Taxing democracy: Understanding tax avoidance and evasion.* Aldershot: Ashgate Publishing.

Braithwaite, V. 2007. Responsive regulation and taxation: Introduction. *Law and Policy*, 29(1), 3-10.

Braithwaite, V. and Braithwaite, J. 2001.An evolving compliance model for tax enforcement. In N. Shover and J.P. Wright (eds.), *Crimes of privilege: Readings in white collar crime*, pp. 405-419. New York: Oxford University Press.

Brannick, T and Coghlan, D. 2007. In defence of being „native": The case for insider academic research. Organizational Academic Research Methods, 10(59), 59-74.

Brautigam, D. 2008. Taxation and state-building in developing countries. In D. Brautigam, O-H. Fjeldstad and M. Moore (eds.), *Taxation and state building in developing countries*: *Capacity and consent*. Cambridge: Cambridge University Press.

Brautigam, D., Fjeldstad, O, H and Moore, M. 2008. *Taxation and state building in developing countries*. Cambridge: Cambridge University Press.

Brem, M and Tucha, T. 2007. Globalization, multinationals and tax base allocation: Advance pricing agreements as shifts in international taxation. In C. Read and G.N. Gregoriou (eds.), *International taxation handbook: Policy, practice, standards and regulations.* Oxford: CIMA publishing.

Brigham, J., Schlaggar, C. N., Javitz, H., Kransnow R., McElroy M. and Swan G. 2009. Test-retest reliability of web-based retrospective self-report of tobacco exposure and risk.*Medicine and Tobacco Research*, 10(2), 278-299.

Brondolo, J. 2009. Collecting Taxes during an economic crisis: Challenges and policy options. IMF staff position note: IMF.

Brondolo, J., Silvani, C., Borgne, E. L and Bosch, F. 2008. Tax administration reform and fiscal adjustment: The case of Indonesia (2001–07), IMF Working Paper 08/129 Washington, D.C: IMF.

Brooks, L.J and Dunn, P.2009. Business & professional ethics for directors, executives & accountants. Mason: Cengage Learning.

Brown, R and Mazur, M. 2003. IRS"s comprehensive approach to compliance measurement, Washington, DC: IRS, available at http://www.irs.gov/pub/irs-soi/mazur.pdf , accessed on 06/12/2009.

Brym, R.J and Lie, J.2007. *Sociology: Your compass for a new world*. Belmont, CA: Wadsworth.

Bryman, A. 1989.*Research methods and organization studies*. New York: Routledge.

Bryman, A. 2004.*Social research method.* Oxford: Oxford University Press.

Bryman, A. 2006. Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6 (1), 97-113.

Bryman, A and Cramer, D. 2005.*Quantitative data analysis with SPSS 12 and 13: A guide for social scientists*. New York: Routledge.

Burgemeestre, B., Hulstijn, J and Tan, Y.H. 2009. Agent architectures for tax compliance. In H. Aldewereld., V. Dignum and G .Picard (eds.), *Engineering societies in the agents world*. Berlin: Springer.

Burgess, R.G. 1982. The unstructured interview as conversation. In R.G. Burgess (eds.), *Field research: A sourcebook and field manual*. New York: Routledge.

CATA (Commonwealth Association of Tax Administrator).2006.*Implementing large taxpayer units*. London: Commonwealth Secretariat.

CBR. 2008. Tax collections figure available at http://www.cbr.gov.pk/, accessed on 24/07/2011.

Campbell, D and Stanley, J.1963. *Experimental and quasi-experimental designs for research*. Chicago: Rand-McNally.

Capper, C.C. 1993.*Educational administration in a pluralistic society*. New York: State University of New York Press.

Carmines, E. G. and Zeller, R.A.1979.*Reliability and validity assessment (quantitative applications in the social sciences)*.New York: Sage Publications.

Carnes, G.A and Cuccia, A.D. 1996. An analysis of the effect of tax complexity and its perceived justification on equity judgements. *Journal of Tax Association*, 18(2),40-56.

Cash, R., Wikler, D., Saxena, A and Capron, A. 2009.*Casebook on ethical issues in international health research*. Geneva: World Health Organization.

Chadwick, B.A., Bahr, H.M and Albrecht, S.L.1984. *Social science research method*. New Jersey: Prentice Hall.

Chang, O.1984. Tax avoidance behaviour: A prospect theory perspective, Ph.D. Dissertation, University of Illinois.

Chattopadhyay, S and Gupta, D. 2002. The income tax compliance cost of Indian corporations, available at http://unpan1.un.org/intradoc/groups/public/documents, accessed on 18/06/2012.

Chau, G and Leung, P. 2009. A critical review of Fischer's tax compliance model: A research synthesis. *Journal of Accounting and Taxation*, 1(2), 34-40.

Chung, J and Trivedi, V. U. 2003.The effect of friendly persuasion and gender on tax compliance behaviour. *Journal of Business Ethics,* 47(2), 133–145.

Chen, J .2009. *Advances in hospitality and leisure: Volume 5*. Bingley, UK. Emerald Group Publishing.

Chen, L., Manion, L, A and Morrison, K. 2007.*Research methods in education*: Oxford: Routledge.

Chiang, C.L. 2003. *Statistical methods of analysis*. Singapore: World Scientific Publication Limited.

Cho, S.H. 2003.Using multilevel analysis in patient and organizational outcomes research. *Nursing Research*, 2 (1), 61-65.

Chou, Y. 1975.*Statistical analysis: With business and economic applications*. New York: Winston, Inc.

Chowdhury, F. 2006. *Corrupt bureaucracy and privatization of tax enforcement in Bangladesh*. Dhaka: Pathak Shamabesh.

Christensen, R. 1997. *Log-linear models and logistic regression*. New York: Springer.

Christiansen, V. 1980.Two comments on tax evasion. *Journal of Public Economics,* 13(3), 389-393.

CIA. 2010. The world factbook- Bangladesh, available at https://www.cia.gov/library/publications/the-world-, accessed on 9/4/2011.

CIAT.2009.A modern version of the tax administration, available at, https://docs.google.com/viewer?a=v&q=cache, accessed on 29/04/2011.

Clarke, J., Newman, J. Smith, N., Vidler, E and Westmarland, L. 2007. *Creating Citizens-consumers. Changing publics and changing public services.* London: Sage Publication.

Clason, D. L and Dormody, T. J. 1994.*Analysing data measured by individual Likert-type items*. *Journal of Agricultural Education*, 35(4), 31–35.

Clausing, A. K. 2009.Multinational firm tax avoidance and tax policy. *National Tax Journal*, 62 (4), 703-725.

Clinard, M B. and Yeager, P.C. 1980. *Corporate crime*. New York: Free Press.

Clotfelter, C.1983. Tax evasion and tax rates: An analysis of individual returns. *The Review of Economics and Statistics*, 65(3), 363-373.

Cloyd, B.1995.The effects of financial accounting conformity on recommendations of tax preparers. *The Journal of the American Taxation Association,* 17 (Fall), 50-70.

Co, E.A., Lim, M. O., Lao, M. E. J and Juan, L.J. 2007.*Minimizing corruption: Philippine democracy assessment*, Manila: Friedrich-Ebert-Stiflung.

Commons, J.R. 1996. A sociological view of sovereignty. In M, Rutherford and W.J Samules (eds.), John. R. Commons selected essays: Volume 1 and 2. London: Routledge.

Congdon, P. 2006. *Bayesian statistical modeling*. London: Wiley.

Conley, J. M and Oʺ Barr, W. M. 1997. Crime and custom in corporate society: A cultural perspective on corporate misconduct. *Law and contemporary problems*, 60 (summer), 5-22.

Cook, T. D and Campbell, D. T.1979. Quasi-experimentation: Design and analysis issues for field settings. Boston: Houghton Mifflin Corporation.

Cook, C. L. and Perri, M. 2004. Single-item vs. multiple-item measures of stage of change in compliance with prescribed medications. Psychological Reports, 94(1), 115-124.

Corder, G. W and Foreman, D.I. 2009.*Nonparametric statistics for non-statisticians: A step-by-step approach*. New Jersey: John Wiley and Sons.

Cordes, J.J, Ebel, R. D and Gravelle, J. 1999. The *encyclopaedia of taxation and tax policy.* Washington: Urban Institute Press.

Corvellec, H . 2006. Elements of narrative analysis, Gothenburg Research Institute Report*: 06*, available at *http://swoba.hhs.se/gungri/abs/gungri2006_006.htm* , accessed on 22/03/2010.

Cowell, F .2004. Carrots and sticks in enforcement. In H. J. Aaron and J, Slemrod (eds.), *The crisis in tax administration*, pp.230-275.Washington: The Brookings Institution.

Crandall, W. 2010.Revenue administration: Performance measurement in taxadministration, available at http://www.imf.org/external/pubs/ft/tnm/2010, accessed on 14/08/2011.

Creswell, W. J.1998.*Qualitative inquiry and research design: Choosing among five traditions*. California: Sage Publications.

Creswell, J.W. 2009.*Research design, qualitative, quantitative and mixed method approaches*. 3rd ed. Thousand Oaks, CA: Sage Publications.

Czarniawska, B. 2004.*Narratives in social science research: Introducing qualitative methods*. London: Sage Publications.

Daniel, P., Michael, K and McPherson, C.P. 2010.*The taxation of petroleum and minerals: Principles, problems and practice*. Oxford: Routledge.

Davis, J.A.1985.*The logic of causal order*. Beverly Hills, CA: Sage Publications.

Deci, E.L and Ryan, R. M. 2002.Handbook of self-determination research. Rochester: University of Rochester Press.

Decorp, A. 2006.*Vocational decision making.* London: CABI Publishing.

Delamont, S.2002. *Fieldwork in educational settings: Methods, pitfalls and perspectives*. London: Routledge.

Deloitte, 2005.Review of the large GST corporate compliance programme, available at http://www.ato.gov.au/corporate/content.aspx?doc=/content/81419.htm, accessed on 26/12/2099.

Delta, G. B and Matsuura, J. H. 2008. *Internet law and legislation – United States*. New York: Aspen Publishers.

DeMaris, A. 2004.*Regression with social data: Modelling continuous and limited response variables*. New Jersey: Wiley Interscience.

Denscumbe, M. 2007. *The good research guide: For small-scale social research projects*. London: Open University Press.

Desai, M and Dharmapala, D. 2005.Corporate tax avoidance and high powered incentives, NBER working Paper, available at, http://digitalcommons.uconn.edu/econ_wpapers/200409, accessed on 7/4/2011.

DeSalvo, K. B., Fisher, W. P., Tran, K., Bloser, N., Merrill, W. and Peabody, J. 2006. Assessing measurement properties of two single-item general health measures.*Quality of Life Research*, 15(2), 191-201.

De Vaus, D.A. 2009.*Research design in social research*. London: Sage Publications.

DFID. 2001. Evaluation of revenue projects synthesis report volume 1, available at http://www.dfid.gov.uk/pubs/files/uganda_csp.pdf, accessed on 10/11/2009.

DFID. 2009. Why tax matters for international development and what DFID is doing about it, available at http://somo.nl/files/extern/ttd/why-tax-matters-for-international-development, accessed on 12/05/2010.

Diepen, M and Franses, P.H. 2006.Evaluating chi-squared automatic interaction detection. *Information Systems*, 31(8), 814-831.

Dillman, D.A.1978. *Mail and telephone survey: The total design method*. New York: John Wiley.

Donnelly, E. and Heneghan, J. 2010.The role of tax authorities in encouraging corporate social responsibility. In D. O"Donnelly (eds.), *The proceedings of the 10th European conference one e-government*. Reading: Academy Publishing Limited.

Doyle, E., Gallery, K and Coyle, M. 2009. Procedural justice principal and tax compliance in Ireland: A preliminary exploration in the context of reminder letters. *Journal of Finance and Management in Public Services*, 8(1), 49-62.

Drake, P and Heath, L. 2010. *Practitioner research at doctoral level: Developing coherent research methodologies*. New York: Routledge.

Dressler, J. 2002 .*Encyclopaedia of crime and justice.* Michigan: MacMillan.

Dubin, J., Graetz, M and Wilde, L 1990. The effect of audit rates on the federal individual income tax, 1977-1986. *National Tax Journal*, 43 (4), 395-409.

Dubin, J. 2007.Criminal investigation enforcement activities and taxpayer non-compliance. *Public Finance Review*, 35(4), 500-529.

Dunsmuir, A. and Williams, L.1992. *How to do social research.* London: Collins Educational.

Durand, F and Thorp, R. 1998. Reforming the state: A study of the Peruvian tax reform. *Oxford Development Studies,* 26(2), 133–51.

Easter, G. M. 2008. Capacity, consent and tax collection in post-communist states. In D. Brautigam, O-H., Fjeldstad and M. Moore (eds.), *Taxation and state building in developing countries: Capacity and consent.* Cambridge: Cambridge University Press.

Ebrill, L and Havrylyshyn, O. 1999.Tax reforms in the Baltic, Russia and other countries of the former Soviet Union. Washington, D.C: IMF.

Edwards. J., Thomas, D., Rosenfeld, P and Kewley, S. 1997. *How to Conduct Organizational Surveys: A Step-By-Step Guide.* London: Sage Publication.

Eherler, D. and Lehmann, T. 2007. Responder profiling with CHAID and dependency analysis, available at https://docs.google.com/viewer?a=v&q=cache:7Ty6a, accessed on 2/11/2010.

Elffers, H, Verboon, P and Huisman,W. 2006. *Managing and maintaining compliance*. Gravenhage/ Netherlands: Boom Juridische Uitgevers.

Erard, B. 1993. Taxation without representation: An analysis of the role of tax practitioners in tax compliance. *Journal of Public Economics*, 52 (2), 163–97

Erard, B. 1997.The income tax compliance burden of Canadian big business. Working paper no-97-2, University of Carleton, finance technical committee, available at http://publications.gc.ca/collections/Collection/F21-4-97-2E.pdf, accessed on 3/06/2010.

Erard, B and Feinstein, J.S. 1994. The role of moral sentiments and audit perceptions in tax compliance. *Public Finance,* 49, (Supplement), 70-89.

Fehr, E. and K. Schmidt .2007. Adding a stick to the carrot? The interaction of bonuses and fines. *The American Economic Review,* 97 (2), 177-181.

Festinger, L. 1957. *A Theory of Cognitive Dissonance.* Evanston, IL: Row and Peterson.

Field, A. P. 2010. *Discovering statistics using SPSS*. London: Sage Publications.

Fischer C. M., Wartick, M and Mark, M .1992. Detection probability and taxpayer compliance: A review of the literature. *Journal of Accounting Literature,* 1 (1), 1-46.

Fishbein, M., and Ajzen, 1. 1975. *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading: Addison-Wesley.

Fjeldstad, O.2004. What"s trust got to do with it? Non-payment of service charges in local authorities in South Africa. *Journal of African Studies*, 42(4), 539-562.

Fjeldstad, O-H and Moore, M. 2008.Tax reform and state building in a globalized world. In D. Braütigam, O-H. Fjeldstad and M. Moore (eds.), *Capacity and consent: Taxation and state building in developing countries*. Cambridge: Cambridge University Press.

Flick, U .2009.*An introduction to qualitative research*. London: Sage Publications.

Frank, H.A. 2006.*Public financial management*: New York: Taylor and Francis Group.

Freedman, L. 1998.S*trategic coercion: Concepts and case*. Oxford: Oxford University Press.

Freedman, J., Loomer, G and Vella, J. 2009.Corporate tax risk and tax avoidance: New Approaches. *British Tax Review*, 1(2009), 74-116.

Frey, B. S. 1997. *Not just for the money. An economic theory of personal motivation*. Cheltenham, UK: Edward Elgar.

Frey, B. 2002.Deterrence and tax morale in the European Union. *European Review*, 2(3), 385-406.

Frey, B.S. and Feld, L.P.2002. Deterrence and morale in taxation: An empirical analysis, available at http://www.cesifo-group.de/portal/pls/portal/docs/1/1190098.PDF, accessed on 5/7/2010.

Friedland, N., Maital, S and Rutenberg, A.1978. A simulation study of income tax evasion. *Journal of Public Economics*, 10(1), 107-116.

Friedland, N. 1982. A note on tax evasion as a function of the quality of information about the magnitude and credibility of threatened fines: Some preliminary research. *Journal of Applied Psychology*, 12(1), 54-59.

Fuest, C and Riedel, N. 2009.*Tax evasion, tax avoidance and tax expenditures in developing countries: A review of the literature*. Oxford: Oxford University Centre for Business Taxation.

Gall, M. D., Borg, W. R., and Gall, J. P. 1996.*Educational research: An introduction*. White Plains, NY: Longman.

Gleason, C. and Mills, L. 2002. Materiality and contingent tax liability reporting. *The Accounting Review,* 77 (2), 317-342.

Glesne, C and Peshkin, A. 1992.*Becoming qualitative researchers: An introduction*. New York: Longman.

Goldstein, H. 1987. *Multilevel covariance component models*. Biometrika, 74(2), 430-431.

Gorard, S and Taylor, C. 2004.*Combining methods in educational and social research*. London, Open University Press.

Gordon, J, P. 1989. Individual morality and reputation costs as deterrence to tax evasion. *European Economic Review*, 33 (4), 797-805.

Graham, J. R. and Tucker, A.2006.Tax shelters and corporate debt policy. *Journal of Financial Economics*, 81(3), 563-594.

Grasmick, H. and Bursik, R. Jr. 1990. Conscience, significant others, and rational choice: Extending the deterrence model. *Law and Society Review*, 24(3), 837-861.

Grasmick, H G. and Scott, W, J. 1982. Tax evasion and mechanism of social control: A comparison of grant and petty theft. *Journal of Economic Psychology,* 2 (3), 213-230.

Gray, S.J., McGaughey, S.L and Purcell, W. R. 2001.*Asia-pacific issues in international business*. Chetlenham, UK: Edward Elgar.

Gravelle, J.G.2009. Tax havens: International tax avoidance and evasion. *National Tax Journal, LXIl*, (4) 727-753.

Green, B.S. and Salkind, J.N. 2008.*Using SPSS for windows and Macintosh: Analysing and understanding data*.5th ed. New Jersey: Prentice Hall.

Green, J and Browne, J. 2005. Multi-method approaches.In G. Judith and B. John (eds.), *Principles of social research*. New York: Open University Press

Greene, J.C., Caracelli, V.J. and Graham, W.F.1989. Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis,* 11(3), 255–74.

Gruber, J and Saez, E. 2002.The elasticity of taxable income: Evidence and implications. *Journal of Public Economics*, 84 (1), 1-32.

Gruber, J and Rauh, J. 2007. How elastic is the corporate income tax base? In A.J. Auarbach, J. R. Hines and J, Slemrod (eds.), *Taxing corporate income in the 21st Century*. New York: Cambridge University Press.

Grubert, H., Goodspeed, T and Swenson, D. 1993. Explaining the low taxable income of foreign-controlled in the United States. In A. Giovannini, R. Glenn Hubbard and J, Slemrod (eds.), *Studies in international taxation*. Chicago: University of Chicago Press.

Gu, M. 2010. *Understanding Chinese corporation law*. Hong Kong: Hong Kong University Press.

Guifree, M. 1997. Designing research: Ex post facto designs. *Journal of Peranesthesia Nursing*, 12(3), 191-195.

Guo, G and Zhao, H. 2000. Multilevel modeling for binary data. *Annual Review of Sociology*, 26(1), 441–462.

Guillemin, M and Gillam, L .2004.Ethics, reflexivity, and ethically important moments in research.*Qualitative Inquiry*, 10(2), 261-280.

Gupta, D and Mookherjee, D.1998. *Incentives and institutional reform in tax enforcement*. New Delhi: Oxford University Press.

Gupta, D..2004.Tax Compliance Costs and Non-Filing Behaviour, available at http://www.nipfp.org.in/working_paper/wp04_nipfp_005.pdf, accessed on 17/06/2012.

Gwartney, J.D., Stroup, R.L., Sobel, R.S and Macpherson, D.A.2008 *Economics: Private and public choice.* Boston: Cengage Learning.

Hair, J. F., Black, B., Babin, B., Anderson, R. E and Tatham, R.L. 2006.*Multivariate data analysi*s. California, USA: Academic Publisher Limited.

Hakim, C. 2000.*Research Design: Successful designs for social and economic research*. London: Routledge.

Hall, A. 1994.The cost of unstable tax laws. *Tax Foundation*, 41(special report), 1-8.

Hamilton, G.1994. Integral unit for large taxpayer management in the tax administration, The VII CIAT IFE Essay Contest: CIAT, available at http://webdms.ciat.org:8080/action.php?kt_path_info=ktcore...view, accessed on 02/07/2010.

Hamilton, L.C. 2008. *Statistics with STATA: Updated for version 10*. New York: Chapman Hall.

Hamm, J.L. 1995. Income level and tax rate as determinant of taxpayer compliance: An experimental examination. PhD Thesis, submitted to the Texas Technology University available at, http://thinktech.lib.ttu.edu/ttu-ir/handle/2346/19720, accessed on 12/4/2010.

Hanlon, M., Mills, L and Slemrod, J. 2005.An empirical examination of corporate tax noncompliance. Ross School of Business Paper No. 1025, available at http://dx.doi.org/10.2139/ssrn.891226, accessed on 28/6/2011.

Harding, S.G. 1987. *Feminism and methodology: Social science issues*, Indiana: Indiana University Press.

Harris, P and Oliver, D. 2010. *International commercial tax*. Cambridge: Cambridge University Press.

Hartas, D. 2010. Quantitative Research as a method of enquiry in education research. In D. Hartas (eds.), *Educational research and inquiry: Qualitative and quantitative approaches.* London: Continuum International Publishing Group.

Hasseldine, J., Hite, P., James, S and Toumi, M. 2007. Persuasive communications: Tax compliance enforcement strategies for sole proprietors. *Contemporary Accounting Research,* 24(1), 171-194.

Hasseldine, J and Kaplan, S.1992. The effect of different sanctions communications on hypothetical taxpayer compliance: Policy implication form New Zealand. *Public Finance*, 47(1), 50-65.

Hasseldine, John. 1995. Compliance costs of business taxes in New Zealand. In Sandford, C (eds.) *Tax Compliance Costs Measurement and Policy*, pp. 126–41.Bath: Fiscal Publications.

Hasseldine, J.2010. Administration of tax systems. International studies programme, Working paper 10-12. Andrew Young School of Policy Studies: Georgia State University, available at http://aysps.gsu.edu/isp/files/ispwp1021.pdf, accessed on 21/06/2012.

Hayes, A.F. 2006.A primer on multilevel modeling. *Human communication research*, 32 (4), 385-410.

Healey, J.F. 2009.*Statistics: A tool for social research*. Belmont, CA: Wadsworth.

Hedeker, D. 2008. Multilevel models for ordinal and nominal variables. In J.D. Leeuw and E. Meijer (eds.), *Handbook of multilevel analysis*. New York: Springer.

Heeks, R. 2001. *Reinventing government in the information age: International practice in IT-enabled public sector*. New York: Routledge.

Heiman, G. W. 2010. *Basic statistics for the behavioural sciences*. Belmont, CA: Wadsworth.

Hellawell, D. 2006. Inside-out: Analysis of the insider-outsider concept as a heuristic device to develop reflexivity in students doing qualitative research. *Teaching in Higher Education,* 11 (4), 483-494.

Hendrix, C.S. 2008.*Leviathan in the tropics? Environment, state capacity, and civil conflict in the developing world*. East Eisenhower Parkway: UMI.

Henriques, A. 2007.*Corporate Truth: The Limits to Transparency*. London: Earthscan.

Henry, S. 1978. *The hidden economy*. Oxford: Martin Robertson.

Hernes, T. 2004. Studying composite boundaries: A formal analysis. *Human Relations*, 57(1), 9-29.

Hite, P.1997. An Investigation of moral suasion and vertical equity arguments on intended taxpayer non-compliance. *Law and Policy*, 19 (1), 1-22.

Hite, P and Hasseldine, J. 2003. Tax practitioner credentials and the incidence of IRS audit adjustments. *Accounting Horizons,* 17 (1), 1–14.

HMRC. 2006. Working with large taxpayers- providing high quality service – improving tax compliance, available at http://www.hmrc.gov.uk/, accessed on 5/09/2011.

Hoekema, D.A. 1986. *Rights and wrongs: Coercion, punishment, and the state*. Cranbury: Associated University Press.

Holloway, I. 1997. *Basic concepts for qualitative research*. Oxford: Blackwell.

House of Commons, UK, 2008. Management of large business corporate tax- Thirtieth report of session 2007-2008, available at http://www.parliament.uk/business/committees/, accessed on 06/03/2011.

Hoyle, H.R., Harris, J.M. and Judo, M.C. 2001. *Research methods in social relations*. 7th ed.Stamford : Cengage Learning.

Hutcheson, G. and Sofroniou, N. 1999.*The multivariate social scientist: Introductory statistics using generalized linear models*. Thousand Oaks, CA: Sage Publications.

ICFTU. 2004. Having their cake and eating it too: The big corporation tax break, available at http://www.taxjustice.net/cms/upload/pdf/tax_break_EN.pdf, accessed on 23/08/2010.

Imbeau, L.M. 2009.*Do they walk like they talk? Speech and action in policy processes*. Quebec: Springer.

IMF, 2002.Evaluation of prolonged use of IMF resources. Washington, D.C: IMF.

Ingraham, L.R and Karlinsky, S. 2005.Tax professionals‟ perception of small-business tax law complexity. *Tax Notes*, 107 (1), 79-89.

Ingrassia, S., Rocci, R and Vichi, M.2011.*New perspective in statistical modeling and data analysis*. London: Springer.

Israel, G.D 2009.Determining sample size. University of Florida, IFAS extension, available at from http://edis.ifas.ufl.edu/pd006, accessed on 11/3/2010.

ITO, 1984.Income tax ordinance of Bangladesh. National Board Revenue, Government of the People‟s Republic of Bangladesh.

Jackson, B.R and Jones, S.M.1985. Salience of tax evasion penalties versus detection risk. *The Journal of the American Taxation Association,* Spring, 7-17.

Jackson, B. R and Milliron, V. C. 1986.Tax compliance research: Findings, problems and prospects. *Journal of Accounting Literature,* 5(1), 125- 165.

Jacobsen, C. B. 2010. Motivation crowding theory revisited: Common grounds for theories on motivation crowding and public service motivation, available at http://soc.kuleuven.be/io/egpa/HRM/toulouse/AbstractJacobsen2010.pdf, accessed on 02/09/2011.

James, S. and Alley, C. 1999.Tax compliance, self-assessment and administration in New Zealand - Is the carrot or the stick more appropriate to encourage compliance? *New Zealand Journal of Taxation Law and Policy*, 5 (1), 3-14.

Jenkins, G.P and Forlemu, E.N. 1993.Enhancing voluntary compliance by reducing compliance costs:A taxpayer service approach, available at, http://www.queensjdiexec.org/publications/qed_dp_109.pdf, accessed on 23/12/2009.

Johnson, G. 2010. *Research methods for public administrators*. New York: M.E. Sharpe Inc.

Jonson, J.M.2002.Forms of interviewing. In J.F. Gubrium and J.A. Holstein (eds.), *Handbook of interview research: Context and methods*: Thousand Oaks: Sage Publications.

Joshi, A and Ayee, J. 2008. Associational taxation: A pathway into the informal sector? In D. Brautigam, O-H. Fjeldstad and M. Moore (eds.), *Taxation and state building in developing countries: Capacity and consent.* Cambridge: Cambridge University Press.

Joulfaian, D and Mark, K. 1999. Differential taxation and tax evasion by small business.*National Tax Journal,* 51 (4), 685-687.

Kagan, R.A and Scholz, J.T. 1984. The criminology of the corporation and regulatory enforcement strategies. In K. Hawkins and J.M. Thomas (eds.), *Enforcing regulation,* pp.67-95. Boston: Kluwer-Nijhoff Publishing.

Kahneman, D and Tversky, A. 1979. Prospect theory: An Analysis of decision Under Risk. *Econometrica*, 47(2), 263-291.

Kalof, L., Dan, A and Dietz, T. 2008.*Essentials of social research*. London: McGraw-Hill

Kamdar, N.1997. Corporate income tax compliance. A time series analysis. *Atlantic Economic Journal*, 25(1), 37-49.

Kangave, J. 2005. Improving tax administration: A case study of the Uganda revenue authority. *Journal of African Law*, 49 (2), 145-176.

Kantowitz, B. H., Roediger, H.L and Elmes, D. G.2009. *Experimental psychology*. Belmont, CA: Wadsworth.

Kaplow, L. 1995. How tax complexity and enforcement affect the equity and efficiency of income tax, NBER working paper series. Cambridge: MIT.

Kass, G.1980. An exploratory technique for investigating large quantities of categorical data. *Applied Statistics*, 29 (2), 119-127.

Katherine, R and Michael, W. 2000.The compliance cost: Research methodology and empirical evidence from Australia. *National Tax Journal*, 53(2), 229-252.

Khalek, A M. 2006. Happiness, health, and religiosity: Significant relations. *Mental Health, Religion and Culture*, 9(1), 85-97.

Khan.M.H. 1996.The efficiency implications of corruption. *Journal of International Development,* 8 (5), 683-96.

Kieso, D., Weygandt, J and Warfield, J. 2011. *Intermediate accounting: IFRS edition*. New Jersey: Wiley and Sons.

Kirchler, E.2007.*The economic psychology of tax behaviour*. Cambridge: Cambridge University press.

Kirchler, E., Hoelzl, W and Wahl, I. 2007. Enforced versus voluntary tax compliance: The slippery slope framework. *Journal of Economic Psychology*, 29 (2), 210-255.

Kireeva, E and Rudy, K.2008. Transition tax reforms in Belarus. In M. Lang., C. Obermair., J. Schuch., C. Staringer and P. Weninger (eds.), *Tax compliance costs for companies in an enlarged European community*. New York: Kluwer Law International.

Kittel, B. 2006.A crazy methodology? On the limits of macro-quantitative social science research. *International Sociology*, 21 (5), 647-677.

Kleinbaum, D and Klein, M. 2010.*Logistic regression: A self-learning text*. New York: Springer.

Klenke, K.2011. *Women in Leadership: Contextual Dynamics and Boundaries*. London: Emerald Group Publishing.

Klepper, S and Nagin, D.S. 1989a. Tax compliance and perceptions of the risks of detection and criminal prosecution. *Law and Society Review*, 23(2), 209-240.

Klepper, S and Nagin, D.S. 1989b. The anatomy of tax evasion. *Journal of Law, Economics and Organization*, 5(1), 1-24.

Kleven,H, J., Knudsen, M.B., Kreiner, C. T, Pedersen, S and Saez1, E. 2011. Unwilling or unable to cheat? Evidence from a tax audit experiment in Denmark. *Econometric*a, 79 (3), 651–692.

Knack, S and Keefer, P.1997. Does social capital have an economic payoff? A cross-country investigation. *Quarterly Journal of Economics,* 112(4), 1251-1288.

Kopczuk, W. 2006.Tax simplification and tax compliance: An economic perspective. In M, Sawicky (eds.), *Bridging the tax gap, addressing the crisis in tax administration*. Washington, D.C: Economic Policy Institute.

Kornhauser, M. E. 2007. Normative and cognitive aspects of tax compliance: Literature review and recommendations for the IRS regarding individual taxpayers, available at http://taxprof.typepad.com/taxprof_blog/files/Kornhauser.pdf, accessed on 4/6/2010.

Kramer, E.H. 2007.*Organizing doubt: Grounded theory, army units and dealing with dynamic complexity*. Slovenia: Korotan Ljubijlana.

Kreft, G. G and Leeuw J. D.1998.*Introducing multilevel modeling*. London: Sage Publications.

Krever, R .2000. Simplicity and complexity in Australian income tax. In H, Petersen and P, Gallager (eds.), *Tax and transfer reform and in Australia and German.* Berlin: Debatte Wissenschaftsverlag.

Kucher, M. and Goette, L.1998. Trust me: An empirical analysis of taxpayer honesty. *Public Finance Analysis*, 55(3), 429 – 444.

Kumar, R. 2005. *Research methodology: A step by step guide for beginners*. London: Sage Publications.

Kvale, S. 1996. Interviews: *An introduction to qualitative research interviewing*. London: Sage Publications.

Lago-Penas, I. and Lago-Penas, S.: The Determinants of Tax Morale in Comparative Perspective: Evidence from European Countries. *European Journal of Political Economy*, 26, 441–453.

Lamb, M. 2004. Interdisciplinary taxation research- An introduction. In Lamb, M.,

Lymer, A., Freedman, J., and James, S. (eds.), *Taxation: An Interdisciplinary Approach to Research*. Oxford: Oxford University Press.

LeBaube, R and Vehorn, C .1992.Assisting taxpayers in meeting their obligations under the law. In R. Bird and C. Jantscher (eds*.), Improving tax administration in developing countries*. Washington D.C: IMF.

Leech, N., Barret, K and Morgan, G.A. 2008. *SPSS for intermediate statistics. Use and interpretation.* New York: Lawrence Erlbaum Associates.

Leeuw, J.D and Meijer, E. 2008.*Handbook of multilevel analysis*. New York: Springer.

Leroy, M. 2004. Tax sociology: Socio-political issues for a dialogue with economists, available at http://socio-logos.revues.org/2073, accessed on 03/03/2011.

Levi, M. 1988. *Of rule and revenue*. Berkley: University of California Press.

Levi, M.2009. Civil and criminal penalties for serious tax non-compliance: A review of impact evidence. School of Social Science: Cardiff University.

Levy, P. S., and Lemeshow, S. 1999. *Sampling of populations: Methods and applications*. 3rd ed. New York: John Wiley and Sons.

Lewin, K., Dembo, T., Festinger, Land P. S. Sears, P.S. 1944.Level of aspiration. In J. Hunt (eds*.), Personality and the behaviour disorders*, pp.333-378. New York: Ronald Press. Lewis, A. 2008.*The Cambridge handbook of psychology and economic behaviour.*Cambridge: Cambridge University Press.

Lincoln, Y.S and Guba, E.G. 1985.Competing paradigms in qualitative Research. In N.K. Denzin and Y.S Lincoln (eds.), *Handbook of qualitative research, pp.* 105-117. London: Sage Publications.

Lohr, S. L. 2010. *Sampling: Design and analysis*. Boston, USA: McMillan Publishing.

Louviere, J.J., Hensher, D.A. and Swait, J.D. 2000.*Stated choice methods: Analysis and application*. Cambridge. Cambridge University Press.

Lowe, S and Hughes, D. 2002. *The private rented sector in a new century: Revival or false dawn*? Bristol: Policy Press.

Luke, A. D.2005. *Multilevel modeling*. Thousand Oaks, California: Sage Publications.

Lymer, A and Oats, L. 2010.*Taxation: Policy and Practice*. 16th ed. Birmingham: Fiscal Publications.

MacLaren, J. 2003. *Corruption and the organization of tax administration: Non-Smithian benefits from specialization in institutional elements of tax design and reform*. Washington, D.C: World Bank.

Manaf, N.A.A., Hasseldine, J and Hodges, R. 2005.The determinants of Malaysian land taxpayers" compliance attitudes. *E-journal of Tax Research*, 3 (2), 206-21.

Mann, A. 2004. A*re semi-autonomous revenue authorities the answer to tax administration problems in developing countries? A practical guide*. Washington, D.C: USAID.

Marsh, C.1982. *The survey method: The contribution of surveys to sociological explanation*. London: George Allen and Unwin.

Marshall, C. and Rossman, G. B. 1999.*Designing qualitative research*. Thousand Oaks, CA: Sage Publications.

Martindale, B. C., Koch, B. S and Karlinsby, S.S. 1992. Tax law complexity: The impact of style. *The Journal of Business Communication,* 29(4), 383-400.

Musgrave, R.2000. *Public finance in a democratic society: The foundations of taxation and expenditure.* Cheltenham: Edward Elgar.

Maso, I., Atkinson, S., Delamont, S., and Verhoeven, J. C. 1995. Openness in research: The tension between self and other. Assen: Van Gorcum.

Mason, J. 2000. *Qualitative researching*. London: Sage Publications.

Mason, R and Calvin, L. 1978. A study of admitted tax evasion.*Law and Society Review*, 13(1), 73-89.

Maxwell, S. 2008. *The price is wrong: Understanding what makes a price seem fair and the true cost of unfair pricing*. New Jersey: John Wiley & Sons.

McBarnet, D. 1992. Legitimate rackets: Tax evasion, tax avoidance, and the boundaries of legality. *The Journal of Human Justice*, 3(2), 56-74.

McCarten, W. 2003. The role of organizational design in the revenue strategies of developing countries: Benchmarking with VAT performance. Washington, D.C: World Bank.

McCarten, W.2004.Focusing on the few: The role of large taxpayers unit in the revenue strategies of developing countries. Washington, D.C: World Bank.

McGee, R.W. 2008. *Taxation and public finance in transition and developing economies*. New York: Springer.

McGill, G. A. 1988. The CPA‟s role in income tax compliance: An empirical study of variability in recommending aggressive tax positions, PhD Dissertation, Texas Tech University, available at http://thinktech.lib.ttu.edu/ttu ir/bit stream/handle/, accessed on 10/12/2009.

McGraw, K and John T. Scholz, J.T. 1991. Appeals to civic virtue versus attention to self-interest: Effects on tax compliance. *Law and Society Review*, 25 (3), 471-98.

Menard, S. 1995. *Applied logistic regression analysis*. California: Sage Publications.

Menard, S. W. 2009. *Logistic regression: From introductory to advanced concepts and applications*. California: Sage Publications.

Menendez, A. J. 2001. Justifying taxes: Some elements for a general theory of democratic tax law. Netherlands: Kluwer Academic Publisher.

Merriam, S.B. 1998. *Qualitative research and case study applications in education.* San Francisco: Jossey-Bass.

Meyers, L. S., Glenn, G and Guriano, A.J. 2006.*Applied multivariate research: Design and interpretation*. London: Sage Publications.

Mills, L. 1998. Book-tax differences and internal revenue service adjustments, *Journal of Accounting Research,* 36 (2), 343 - 356.

Mills, L. and R. Sansing.2000. Strategic tax and financial reporting decisions: Theory and evidence. *Contemporary Accounting Research,* 17 (1), 85-106.

Mills, L. and K. Newberry. 2001. The influence of tax and nontax costs on book-tax reporting differences: Public and private firms. *Journal of the American Taxation Associatio*n 23(1), 1-19.

Minor, W., 1978. Deterrence research: Problems of theory and method. In Cramer, J.A. (eds.), Preventing Crime. Beverly Hills: Sage Publications.

Mitchell, R.C. and Carson, R.T. 1989. *Using surveys to value public goods: The contingent valuation method*. Washington, DC: Resources for the Future.

Mochmann, E and Muller, P.J.1979. Data protection and social science research: Perspectives from 10 countries, London: Mansell Publishing Co.

Mongin, P. 1997. Expected utility theory. In J. Davis, W. Hands and U. Maki (eds.), *Handbook of economic methodology.* London: Edgar Elgar.

Mooney, C. Z., and R. D. Duval.1993.*Bootstrapping: A nonparametric approach to statistical inference*. Newbury Park, CA: Sage Publications.

Moore, M. 2004. Revenues, state formation, and the quality of governance in developing countries. *International Political Science Review*, 25(3), 297–319.

Moore, M. 2008. Between coercion and contract: Competing narratives on taxation and governance. In D. Brautigam, O-H. Fjeldstad and M. Moore (eds.), *Taxation and state building in developing countries: C*apacity *and consen*t. Cambridge: Cambridge University Press.

Morgan, D. 1998. Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research*, 8(3), 362-376.

Morris, T and Lonsdale, M. 2004.Translating the compliance model into practical reality available at, http://www.irs.gov/pub/irs-soi/04moori.pdf, accessed on 8/07/2011.

Morse, J. M. 1991.Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40 (2), 120–123.

Mosteller, F., and J. W. Tukey.1977.*Data analysis and regression: A second course in statistics reading*. MA: Addison–Wesley.

Mourouga, P. 2004. A review of random effect modelling in STATA 8, available at http://www.bristol.ac.uk/cmm/learning/mmsoftware/reviewstata.pdf, accessed on 22/4/2010.

Mueller, D.C.1972.A life cycle theory of the firm. *The Journal of Industrial Economics*, 20(3), 199-219.

Murphy, K. 2002. Trust me, I"m the taxman: The role of trust in nurturing compliance: working paper no- 43, Australian National University.

Murphy, K. 2004. The role of trust in nurturing compliance: A study of accused tax avoiders. *Law and Human Behaviours*, 28(2), 187-210.

Murphy, K 2005.Regulating more effectively: The relationship between procedural justice and legitimacy. *Journal of Law and Society*, 32(4), 562-589.

Murphy, K.2007. Procedural justice and the regulation of tax compliance behaviour: The moderating role of personal norms: Andrew Young School of Policy Study, Georgia state University, USA.

Murphy, K. 2008. Enforcing tax compliance: To punish or persuade? *Economic Analysis and Policy*, 38(1), 113-135.

Myles, G.D and Naylor, R.A. 1996. A model of tax evasion with group conformity and social customs.*European Journal of Political Economy*, 12(1), 49-66.

Nachmias, C. F and Guerrero, A. L. 2011.*Social statistics for a diverse society*. London: Sage Publications.

Nash, J. 2000. Doing independent overseas fieldwork 1: Practicalities and pitfalls. *Journal of Geography in Higher Education,* 24(1), 139-149.

N B R. 2005.Project evaluation report on reforms in revenue administration. Dhaka: Internal Resources Division.

------. 2009. Annual report 2009. Dhaka: International Resources Division.

Nikolaidis, P. 2009. Inactivity, nutritional and lifestyle habits: A cross-sectional study in Czech school children and their nuclear families. *Physical Education and Sport*, 7(2), 141–151.

Nooteboom, B. 2004.*Management control in inter organizational relationships*, available at www.bartnooteboom.nl, accessed on 05/06/2011.

Norris, D., Levin, K., Cantor. 1995. A mixed-method approach to evaluating new tax payment procedures, IRS: USA, available at http://www.amstat.org/sections/srms/proceedings/papers/1995_192.pdf , accessed on 7/10/2010.

NTCA. 2008. Tax control framework: From a focus on risks to being in control. TCF working group, available at http://ec.europa.eu/taxation_customs/resources/documents/taxation/, accessed on 24/06/2011.

Oats, L and Tuck, P.2008. The relationship between HM Revenue & Customs and large corporate taxpayers: the changing role of accountants, Warwick Business School, University of Warwick, available at http://www.icaew.com/~/media/files/technical/research-and-academics/publications, accessed on 19/06/2012.

OECD-CFA 2000.Towards Global Tax Cooperation. Paris: OECD.

OECD.2002. OECD science, technology and industry outlook 2002. Paris: OECD.

OECD. 2006. OECD to work on clarifying VAT/GST application in cross-border trade, available at http://www.oecd.org/document/5/0,3746,en_2649_33739, accessed 24/08/2011.

OECD.2009. Forum on tax administration: Compliance management of large business task group, available at*http://www.oecd.org/dataoecd/36/32/43241144.pdf,* accessed on 22/11/2009.

Okike, E. N.M. 1998.Voluntary disclosures in corporate audit reports: A Nigerian case Study. *International Journal of Auditing,*2 (2), 139–166.

O‟Leary, Z. 2009.*The essential guide to doing your research project*. London: Sage publications.

Ongwamuhana, K. 2011. *Tax compliance in Tanzania: Analysis of law and policy affecting voluntary taxpayer compliance*. Dar es Salam: Mkuki na Nyota Publishers Ltd.

Onwuegbuzie, A.J and Collins, K.M. 2010.An innovative method for analysing themes. In K.M. Collins, A.J. Onwuegbuzie and Q. G. Jiao (eds.), *Toward a broader understanding of stress and coping: Mixed methods*. Charlotte: Information Age Publishing.

Onyebuchi, B. C. 2007. *An examination of the organizational structure of the Chicago archdiocese office of catholic schools and perceptions of its impact on catholic school success*. Ann Arbor. UMI publishing.

Orviska, M., Hudson, J., 2003.Tax evasion, civic duty and the law abiding citizen. European Journal of Political Economy 19, 83–102

O‟Sullivan, E and Rassel, G.R. 1994. *Research methods for public finance*: 2nded. New York: Longman.

Palil, M. R. 2010. *Tax knowledge and tax compliance determinants in self-assessment system in Malaysia*, PhD Thesis, available at http://etheses.bham.ac.uk/1040/1/Palil10PhD.pdf, accessed on 26/12/2011.

Pashev, K .2005. *Corruption and tax compliance: Challenges to tax policy and administration.* Sofia: CDS report.

Pashev, K. 2008. Tax compliance of small business in transition economies: Lessons from Bulgaria Konstantin. In (eds.), R.W. McGee, *Taxation and public finance in transition and developing economies*: New York: Springer.

Patton, M. 1990. *Qualitative evaluation and research methods*. London: Sage Publications.

Paulo, D.S.1994.Administration of large taxpayers. Washington, D.C: IMF.

Pencavel, J. H.1979. A note on income tax evasion, labour supply and non-linear tax schedules. *Journal of Public Economics,* 12 (1), 115-24.

Pentland, B.T and Carlile, P. 1996. Audit the taxpayer, not the return: Tax auditing as an expression game. *Accounting, Organizations and Society*, 21 (2), 269–287.

Perry, E. G., W. Maloney, W.F., O. Arias, O.S., Fajnzylber, P., Mason, A. D and J. Chanduvi, J, S. 2007. *Informality: Exit and exclusion*. Washington, D.C: World Bank.

Perry, V. 2004.Experience and Innovation in Other Countries.In H.J. Aaron and J, Slemrod (eds.), *The crisis in tax administration*. Washington, D.C: The Brookings Institution.

Phillips, M.E. 2008. Business tax as state-building in developing countries: Applying governance principles in private sector development. *International Journal of Regulation and Governance, 8* (2), 123–154.

Pietersen, J and Daminov, G.1998. *Guide to practical statistics*. Cape Town: HSRC Press.

Pitti, J and Vazquez-Caro, J. 1998.Tax administration during the transition: Coping with the legal changes and a shrinking base. In L, Bokros and J-J, Dethier (eds.), *Public finance reform during the transition: The experience of Hungary*. Washington, D.C: World Bank Publication.

Plumley, A.H. 1996. The determinants of individual income tax compliance estimating the impacts of tax policy, enforcement, and IRS responsiveness, available at http://www.irs.gov/pub/irs-soi/pub1916b.pdf, accessed on 06/08/2011.

Porta, M. S. 2008. *A dictionary of epidemiology*. New York: Oxford University Press.

Powner, D.A and White, J.R. 2005. *Internal revenue service assessment of fiscal year 2006 budget request and interim result of the 2005 filing session.* Washington, D.C: General Accounting Office.

Prichard, W. 2010. Taxation and state building: Towards a governance focused tax reform agenda, IDS Working Paper Volume 2010 (341), available at http://www2.ids.ac.uk/gdr/cfs/pdfs/Wp341%20web.pdf, accessed on 11/04/2011.

Raabe W. A., Whittenburg, G. E and Sanders, D. L and Sawers, R. B. 2012.*Federal tax research*. Mason: South-Western.

Radaelli, C. M. 1997.*The politics of corporate taxation in the European Union*. London: Routledge.

Ratner, B. 2003.*Statistical modeling and analysis for database marketing: Effective techniques for mining big data*. Florida: Chapman and Hall/CRC.

Raudenbush, S.W.1993. A crossed random effects model for unbalanced data with applications in cross sectional and longitudinal research. *Journal of EducationalStatistics,* 18(4), 321-349.

Rawlings, J.O., Pantula, S. G and Dickey, D.A. 1998. *Applied regression analysis: A research tool*.New York: Springer.

Read, C and Gregoriou, G.N.2007. *International Taxation Handbook: Policy, practice, standards and regulations*. Burlington. CIMA publishing Limited.

Reardon, S. F, Brennan, R.T and Buka, S.L. 2002. Estimating multi-level discrete-time hazard models using cross-sectional data: Neighbourhood effects on the onset of adolescent cigarette use. *Multivariate Behavioural Research*, 37 (3), 297-330.

Reinganum, J. F.1985. Income tax compliance in a principal-agent framework. *Journal of Public Economics*, 26 (1), l-18.

Richie, J and Lewis, J .2003.*Qualitative research practice*. London: Sage Publications.

Robins, R. W., Hendin, H. M., and Trzesniewski, K. H. 2001. Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin*, 27(2), 151-161.

Robson, E. and K. Willis.1997.*Practical tips. Postgraduate fieldwork in developing countries. Monograph no.* 9. London: Developing Areas Research Group**.**

Romanov, D. 2006. The corporation as a tax shelter: Evidence from recent Israeli tax changes. *Journal of Public Economics*, 90 (10), 1939-1954.

Rossi, P.H and Grasmick, H. 1985. Appeals within our social structure that can enhance voluntary compliance. *Internal Revenue Service*, 1, 79–115.

Rossiter, J. R. 2002. The C-OAR-SE *procedure for scale development in marketing*. *International Journal of Research in Marketing*, 19 (4), 305-335.

Roth, J. A., Scholz, J. T., Witte A. D. 1989. *Taxpayer Compliance: An Agenda for research*. Pennsylvania: University of Pennsylvania.

Ruane, J. M. 2004. *Essentials of research methods: A guide to social research*. Oxford: Blackwell Publishing.

Rubin, A and Babbie E. R. 2010.*Research Methods for Social Work*. California: Brooks/Cole.

Samad, A. 2011.Is capital inadequacy a factor for bank failure? Evidence from US. *Journal of Accounting and Finance,* 11(4), 105-110.

Sandmo, A. 2005. The theory of tax evasion: A retrospective view. *National Tax Journal* 58, (Dec), 643–663.

Santos, D. P.1994. Administration of Large Taxpayers. Fiscal Affairs Department. Washington, D.C: IMF.

Scheyvens, R and Storey, D. 2003. *Development fieldwork: A Practical guide*. London: Sage Publications.

Schisler, D.L. 1994. An experimental examination of the factors affecting tax preparers. Aggressiveness. A prospect theory approach. *Journal of American Taxation Association*, 16(2), 124-142.

Schmidt, M.J and Hollensen, S. 2006. *Marketing research- an international approach.* London: Prentice Hall.

Schofield, W.2006.Survey sampling. In R. Sapsford and V. Jupp (eds.), *Data collection and analysis*. London: Sage Publications.

Scholz, J. T. 1998.Trust, taxes and compliance. In V. Braithwaite and M. Levi (eds.), *Trust and governance*, pp.135-66, New York: Russell Stage Foundation.

Scholz, J.T and Lubell, M. 1998. Trust and taxpaying: Testing the heuristic approach to collective action. *American Journal of Political Science,* 42 (2), 398-417.

Scholz, J. T. and Pinney, N. 1995. Duty, fear, and tax compliance: The heuristic basis of citizenship behaviour. *American Journal of Political Science*, 39(2), 490-512.

Schwartz, R.D and Orleans, S. 1967. On Legal Sanctions. *University of Chicago Law Review*, 34(2), 282-300.

Sebastian, S.J. 2008. *Tax compliance: Businesses owe billions in federal payroll taxes*. Washington: General Accounting Office.

Sechrist, L and Sidiani, S. 1995. Quantitative and qualitative method: Is there an alternative? *Evaluation and Program Planning,* 18 (1), 77-87.

Seldon, A.1979. Tax avoision. In A.R. Ilersic., D.R. Myddelton., C. Davies., A. Christopher, and L, Hoiughton, (eds.), *The economic, legal and moral inter-relationships between avoidance and evasion.* London: The Institute of Economic Affairs.

Shariff, A.A., Zaharim, A and Sopian. K. 2009. The comparison logit and probit regression analyses in estimating the strength of gear teeth. *European Journal of Scientific Research*, 27 (4), 548-553.

Sheffrin, S, M and Triest, R, K. 1992. Can brute deterrence backfire? Perceptions and attitudes in tax compliance. In J, Slemrod (eds.), *Why people pay taxes*. Michigan: University of Michigan Press.

Shome, P. 2004. Tax administration and the small taxpayer, IMF Working Paper-04/2, available at http://www.frp2.org/english/Portals/0/Library/Tax%, accessed on 17/07/2010.

Short, T.D.1997.*Tax administration: Factors affecting results from large corporations*, Washington, D.C: General Accounting Office.

Shover, N and Hochstetler,A. 2006.*Choosing whit-collar crim*e. Cambridge: Cambridge University Press.

Shover, N., Job, J and Carroll, A. 2003. The ATO compliance model in action: A case study of building and construction, available at http://ctsi.anu.edu.au/publications/taxpubs/Taxdem.Shover.pdf, accessed on 12/8/2010.

Siegel, S and Castellan, N.J. 1988. *Nonparametric statistics for the behavioural sciences*. New York: McGraw-Hill Education.

Sikes P, J and Potts, A. 2008.*Researching education from the inside: Investigations from within*. London. Routledge.

Simons, H. 2009. *Case study research in practice*. London: Sage Publications.

Simpson ,G and Kafka, F. 1971. *Basic statistics*. Oxford: IBH.

Slemrod, J.1985. The return to tax simplification. An econometric analysis. NBER Working Paper No 1756, MIT: Cambridge.

Slemrod, J. 2004. The economics of corporate tax selfishness. NBER working paper, available at, http://www.nber.org/papers/w10858 , accessed on 24/07/2010.

Slemrod, J. 2005. The etiology of tax complexity: Evidence from the US tax systems. *Public Finance Review*, 33 (3), 279-299.

Slemrod, J and Blumenthal, M. 1993. The income tax compliance cost of big business. The office of tax policy research. Working paper series number 93-11. University of Michigan: School of Business Administration.

Slemrod, J and Katuscak, P. 2005. Do trust and trustworthiness pay off? *Journal of Human Resources*, 40(3), 621-646.

Slemrod, J., Blumenthal, M and Christian, C.W. 2001.Taxpayer response to an increased probability of audit: Evidence from a controlled experiment in Minnesota. *Journal of Public Economics*, 79(3), 455 – 483.

Slemrod, J and Venkatesh, V. 2002.The income tax compliance cost of large and mid-size businesses. Tax policy research: University of Michigan Business School.

Slemrod, J and Yitzhaki, S. 2002. Tax avoidance, evasion, and administration. In A. J. Auerbach and M. Feldstein (eds.), *Handbook of public economics*, pp. 1423-1470. London: Elsevier.

Somekh, B and Lewin, C.2011. *Theory and methods in social research*: London: Sage Publications.

Song, Y. D and Yarbrough, T. 1978. Tax ethics and taxpayer attitude: A survey. *Public Administration Review*, 38 (5), 442-452.

Soukhovtseva, O. 2006.IT as a driver of E-tax- administration in the post transition countries: Does the taxpayers" response matter? In D. Remenyi and A. Brown (eds.), *Proceedings of the 13th European conference on information technology evaluation.* Reading: Academic Conferences Limited.

Sour, L. 2002. An economic model of tax compliance with individual morality and group conformity. *Economia Mexicana*, Vol. XIII, 43-61.

Snavely, K.1990. Government policies to reduce tax evasion: Coerced behaviour versus services and values development. *Policy Sciences*, 23(1), 57-72.

Sniders, T. and Bosker, R. 1999.*Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London: Sage Publications.

Sparrow, M. K.1994.*Imposing duties: Government's changing approach to compliance*: New York: Praeger Publishing.

Spicer, M and Lundstedt, S. 1976.Understanding tax evasion. *Public Finance*, 31(2), 295-305.

Smith, A. 1776.*An enquiry into the nature and causes of the wealth of nations-Voll II*.Oxford: Clarendon Press (1869 reprint).

Smith, K and Stalans, L. 199.Encouraging tax compliance with positive incentives: a conceptual framework and research directions. *Law and Policy,* 13(1), 35-53.

Srinivasan, T.N. 1973. Tax evasion: A model. *Journal of Public Economics*, 2(4), 339-346.

Stangor, C. 2011. *Research methods for the behavioural sciences*. California: Wadsworth.

StataCorp. 2011. Stata: Release 12. Statistical Software. College Station, TX: Stata Corp LP.

Steinmann, H and Kumar, B.1998. *Ethics in international management*. Berlin: de Gruyter Gesteland.

Strumpel, B.1969.The contribution of survey research to public finance. In A.T. Peackok (eds.), *Quantitative analysis in public finance*, pp.13-22.New York: Praeger Publishing.

Sullivan, J.T. 2001.*Methods of social research*. Texas: Harcourt College Publishers.

Swenson, D.L.1994. The impact of U.S. tax reform on foreign direct investment in the United State.*Journal of Public Economics,* 54(2), 243-66.

Tabachnick, B. G. and Fidell, L.S.1996.*Using multivariate statistics*.3rd ed. New York: HarperCollins.

Taliercio, R. 2004. Designing performance: The semi-autonomous revenue authority model in Africa and Latin America. Policy research working paper3423. Washington, D.C: World Bank.

Tanzi, V. 1998.Corruption and the budget. In A. K. Jain (eds.), *Economics of Corruptio*n. Massachusetts: Springer.

Tanzi, Vito. 1995. *Taxation in an integrating world*. Washington, D.C: The Brookings Institution.

Tashakkori, A and Teddlie, C. 2003.*Handbook of mixed methods in social and behavioural research*. Thousand Oaks, CA: Sage Publications.

Terkper, S. 2003. Managing small and medium size taxpayers in developing countries. Washington, D.C: IMF.

The Daily Jugantor. Khondoker Delwar will take legal action against the NBR, available at http://jugantor.us/enews/issue/2012/04/19/index.htm, accessed on 10/5/2010. (In Bengali)

The Daily Inquilab. Workshop on tax collection at NBR, available at http://www.dailyinqilab.com/, accessed on 04/09/2011. (In Bengali)

The Daily Prothom Alo. BTRC suspects tax evasion by Grameen Phone, available at http://www.eprothomalo.com/index.php?opt=, accessed on 4/11/2011.(In Bengali)

Thomson, P., Graham, J and Lloy, T. 2005. *A woman's place is in the boardroom*. London: Palgrave Macmillan.

Timmons, J. F. 2004. *The fiscal contract: States, taxes and public services*. an Diego: University of California.

Tittle, C .1980. S*anctions and social deviance: The question of deterrence*. New York: Praeger.

Tool, M.R and Samuels, W.J.1989.*State, society, and corporate power*. New Jersey: Transaction publisher.

Tooley, S. 1992.Tax practitioners: Towards an understanding of ethical problems and attitudes. Discussion paper, Accountancy Department: Massey University.

Torgler, B. 2003.Beyond punishment: A tax compliance experiment with taxpayers in Costa Rica.*Revista de Analisis de Economico*, 18(1), 27-56.

Torgler, B. 2005.Tax morale in Latin America. *Public Choice*, 122 (1/2), 133-157.

Torgler, B 2007.*Tax compliance and tax morale*. Cheltenham: Edward Elgar.

Torgler, B and Schneider, F.2007. Shadow economy, tax morale, governance and institutional quality: A panel analysis, available at http://www.yale.edu/leitner/resources/docs/paper_1_torgler_schneider.pdf, accessed on 03/02/2012.

TRAC, 2011.Audits of IRS large corporate taxpayers, available at http://trac.syr.edu/tracirs/newfindings/v, accessed on 16/03/2010.

Tran-Nam, B., Evans, C., Walpole, M and Ritchie, K. 2000. Tax compliance costs: research methodology and empirical evidence from Australia. National Tax Journal, 53(2), 229-252.

Trivedi, V, W., Shehata, M and Mestelmen, S. 2005. Attitudes, incentives, and tax compliance. *Canadian Tax Journal*, 53 (1), 29-61.

Trochim, W. M. K. 2006. Research methods knowledge base, available at http://www.socialresearchmethods.net/kb/, accessed on 27/6/2010.

Tuck, P. 2004. Remaking the large corporate taxpayer into a visible customer partner: The changing role of tax governance, available at http://www2.warwick.ac.uk/fac/soc/wbs/projects/, accessed on 11/6/2011.

Twumasi, P.A. 2001. *Social research in rural communities*. Accra: Ghana University Press.

Tyler, T.R. 1997. Trust and law abidingness: A pro-active model of social regulation. working paper No-16, Canberra: Australian National University.

Tyler, T. and Huo, Y. 2002. *Trust in the law*. New York: Russell Sage Foundation.

UCLA, 2007.Academic technology services on R data analysis examples: Ordinal logistic regression, available at http://www.ats.ucla.edu/stat/r/dae/ologit.htm, accessed on 5/10/2010.

US Congress. 2005. Fiscal year 2006: Budget of the U.S. Government. Washington, D.C: US Congress:

Varma, K. and Doob, A. 1998. Deterring economic crimes: The case of tax evasion. *Canadian Journal of Criminology*, 40 (2), 165-184.

Vazquez-Caro, J .1994. Assessing the impact of integrating functions of administration on efficiency and effectiveness.Inter-American centre for tax administration.Proceeding of annual meeting.

Verma, S.2006. Preliminary item statistics using point-biserial correlation and p-values.available at http://www.eddata.com/resources/publications/EDS_Point_Biserial.pdf, accessed on 07/08/2010.

Victor, A, F. 2007.*Stories of success: Narrative communication themes and the direct selling industry*. New York: UMI microform.

Vines, L.D. 1996.Mergers and acquisitions of franchise. Chicago: American bar association.

Violette, G. 1989. Effects of communicating sanctions on taxpayer compliance. *Journal of the American Tax Association,* 11 (1), 92–104.

Von Neumann, J. and O. Morgenstern.1944.*Theory of games and economic behaviour*. Princeton, NJ: Princeton University Press.

Vroom, V. 1964. *Work and motivation.* New York: Wiley.

Wagner, R E.2002.Property, taxation and the budgetary commons. In D. P Racheter and Wagner, R.E (eds.), *Politics, taxation, and the rule of law: The power to tax in constitutional perspective.* Massachusetts: Kluwer.

Walker, D. M. 2006. *Tax compliance: Challenges to corporate tax enforcement and options to improve securities basis reporting*; Washington, D.C: General Accounting Office.

Wanous, J. P., Reichers, A. E. and Hudy, M. J. 1997. Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology*, 82(2), 247-252.

Warren, C. A. 2002. Qualitative interviewing. In J.F. Gubrium and J.A. Holstein (eds.), *Handbook of interview research: Context and methods*: Thousand Oaks: Sage Publications.

Warwick, D.P and Lininger, C.A. 1975. *The sample survey: Theory and practice*. London: McGraw-Hill.

Watts, H.D.1978. *The large industrial enterprise: Some spatial perspectives*. London. Croom Helm.

Webley, P., Robben, H., Elffers, H and Hessing, D. 1991. *Tax evasion: An experimental approach*. Cambridge: Cambridge University Press.

Webley, P., Adams, C and Elffers, H. 2006. Value added tax compliance. In Slemrod, J and McCaffery, E (eds.) *Behavioural public finance*. New York: The Russell Sage Foundation.

Wenzel, M. 2004. The social side of sanctions: personal and social norms as moderators of deterrence. *Law and Human Behaviour*, 28 (5), 547-567.

Weston, C., Gandell, T., Beauchamp, J., McAlpine, L., Wiseman, C and Beauchamp, C. 2001.Analysing interview data: The development and evolution of a coding system.*Qualitative Sociology*, 24(3), 381-400.

Whitehead, J. C., Pattanayak, S, K., Houtven, G, L. and Gelso, B.R. 2007.Combining revealed and stated preference data to estimate the non-market value of ecological services: An assessment of the state of the science. *Journal of Economic Survey*s, 22(5), 872-908.

William, R. 2001.Prosecuting non-lodgers: To persuade or punish? Working paper no 12, centre for Tax System Integrity: Australian National University.

Winter, J. and Dodou, D. 2010. Five–point Likert Items: t versus Mann-Whitney-Wilcoxon, *Practical Assessment, Research and Evaluation*, 15(11), 1-11.

Witte, A., Tauchen, H and Hall, G. 1987. Tax compliance research: Models, data and methods, proceeding of the American statistical association, available at http://www.amstat.org/sections/srms/proceedings , accessed on 08/12/2009.

Wong, G Y and Mason, W.1985. The hierarchical logistic regression model for multilevel analysis. *Journal of the American Statistical Association,* 80 (391), 513-524.

World Bank Report. 2009. A handbook for tax simplification. Washington, D.C.World Bank.

Wu, S. 2005. The effectiveness of imprisonment as a deterrence-based criminal justice response, available at http://web.viu.ca/crim/student/s%20wu%20deterrence%, accessed on 20/4/2011.

Xie, Y and D. A. Powers. 2008. *Statistical method for categorical data analysis*. London: Emerald Publishing.

Yaniv, G. 2009.The tax compliance demand curve: A diagrammatical approach to income tax evasion, available at http://ssrn.com/abstract=980096, accessed on 27/12/2009.

Yin, R.K. 1989.*Case study research*: *Designs and methods*. London: Sage Publications.

Yin, R.K. 2003.*Applications of case study research.* 2nd ed. London: Sage Publications.

Yitzhaki, S.1974. A note on income tax evasion. *Journal of Public Economics*, 3(2), 202-210.

Youngblut, J. M., and Casper, G. R.1993. Single-item indicators in nursing research. *Research in Nursing and Health*, 16(6), 459-465.

Zaleznik, A and Vires, M.1982.*Power and the corporate mind: How to use rather than misuse leadership*. Chicago: Bonus Books Inc.

Zimmerman, M., Ruggero, C. J., Chelminski, I., Young, D., Posternak, M. A., Friedman, M., Boerescu, D and Attiullah, N. 2006. Developing brief scales for use in clinical practice: The reliability and validity of single-item self-report measures of depression symptom severity, psychosocial impairment due to depression, and quality of life. *Journal of Clinical Psychiatry*, 67 (10), 1536-1541.

APPENDIX A (OPERATIONAL DEFINITIONS)

A. Operational Definition of the Variables and their Measurements

The purpose of this section is to give an idea of how the variables were defined. Choosing appropriate variables and assigning reasons for their inclusion in the study is a major part of the thesis. Three kinds of variables are used in the statistical analysis of the study: dependent, independent and control, as discussed in the research logic model in section 3.3. The operational measurement of these variables is discussed in sections 3.12.1.3 and 3.12.1.4. The following is an attempt to define the variables and their relevance to the study. The dependent variable is defined in section A.1, the independent variables from sections A.2 to A.7, and the control variables from sections A.8 to A.15.

A.1 Tax compliance

For this study tax compliance is comprised of three components: filing, reporting and payment. *Filing compliance* measures whether the tax return is submitted by the statutory date, i.e. the original, or an extended, date set by the tax authority. It is a statutory obligation for all corporations, small or large, to submit their tax return by the 15th of July following the end of their financial year, provided a period of six months has elapsed from the end of their financial year. A tax return includes a tax form, audited financial reports, and calculation of taxable income and taxes due. Any tax return submitted by this date is filing compliant. All compliances are measured as a dichotomous variable, as discussed in sections 3.12.1.3 and 5.4.1. *Reporting compliance* in this research is measured by whether any unreported income is unearthed through audit actions, inspection or any other means. This research therefore defines any hidden income detected by the tax authority as a case of reporting non-compliance, although a case of tax compliance does not give a guarantee of complete disclosure (see section 5.4.2). However, in this measurement process the impact of an appeal judgement in favour of the appellant is taken into account. *Payment compliance* is measured on the basis of full payment of all taxes, advance, withheld and current. It would have been laborious and time consuming to go through records file-by-file to be sure of the payment compliance of all the sampled corporations. Therefore, the computer-generated and manually determined payment records of the LTU were consulted. Finally, to determine overall compliance, all the three compliance components were totalled. In practice, the LTU – like many other tax administration units in Bangladesh – does not maintain any records of the overall compliance of taxpayers. So this was measured once the data for the three compliance components were gathered.

A.2 Penalties

Financial penalty is the coercive action most widely applied to control non-compliance. In the Income Tax Ordinance of Bangladesh (ITO, 1984), there are penal provisions for non-submission of returns (Tax Code 124), concealment of income (Tax Code 128) and non-payment of taxes (Tax Codes 125 and 127). Besides these, there are other penal actions, for

example, penalty for not maintaining accounts in the prescribed form (Tax Code 123) and penalty for non-response to statutory notice (Tax Code 126). The tax advisors and corporate finance directors and CEOs are well aware of the implication of these penal actions on their tax liability. This research is only interested in penal actions related to the filing, reporting and payment obligations of large corporations. Throughout the questionnaire survey and in the face-to-face high-level interviews, penalty is defined in accordance with the relevant income tax sections (i.e., Tax Codes 124, 125, 127 and 128) of the Income Ordinance. The study asked questions of the respondents to assess their perception of the usefulness of these penal provisions on tax compliance. The reason for its inclusion as a coercive instrument is that the tax administration employs penal action as its first line of attack in pursuing alleged non-compliance.

A.3 Tax audit

Tax audit in this study refers to the audit claims or adjustments made through audit actions. Audit adjustment refers to the book-tax difference between the taxable incomes reported in tax returns and tax audit findings. Audit adjustments made by the audit teams are not final. The corporate taxpayers may challenge them in the appeal court, which needs to be taken into account in measuring the audit adjustment. Audit adjustments made through all types of audits – desk and comprehensive – and non-audit action – for example, inspections – were considered. Audit demands across corporations may vary widely and normality of distribution of audit data may not be maintained. Therefore, audit adjustment data were common log transformed to normalize them. A question to decide here is whether audit adjustment is used as an exogenous or endogenous variable to the model. Between randomized and return-based audit selection, the LTU administration of Bangladesh follows the latter. After an initial scrutiny and evaluation of the submitted return in terms of tax law and past audit adjustments, a corporation"s accounts may be subject either to a desk-based or a comprehensive audit. The year under study, i.e., tax year 2008-2009, LTU had a 100% audit examinations on its corporate taxpayers. The audit selection process, sometimes, is also driven by risk factors, which are in the hands of the higher authority. In almost no cases are audits selected at random, which makes audit adjustments an endogenous variable to the regression and other statistical models employed in the study. As an endogenous variable, audit is likely to better explain its effect on tax compliance. The other reason tax audit is included in the study is that when penal actions fail, the tax authority moves to unearth business details by desk or comprehensive audit actions.

A.4 Imprisonment

This is the final and the toughest coercive action that may be imposed for any non-compliance behaviour according to the Income Tax Ordinance of Bangladesh, as in many other countries. In between financial penalty and imprisonment, there are some other legal sanctions, for example, search and seizure, freezing of bank accounts and closure of business premises, which are less frequently pursed as a means to improve compliance. Imprisonment of corporate taxpayers can be taken as a separate action or in combination with other coercive actions, for example financial penalty or freezing of bank accounts. In the tax system of Bangladesh, generally, the softer coercive actions are pursued first before launching into the tough actions. All non-compliances, non-filing, non-reporting and non-payment, are punishable with imprisonment from a minimum of one to a maximum of five years (Tax Codes 164, 165 and 166). Imprisonment can be applied for failure to submit documents or to provide or protect information (Tax Codes 164 and 168) or for disposal of property under attachment by a third party (Tax Code 167).

This study is only interested in measuring the effectiveness of imprisonment in relation to non-filing of returns, non-reporting of income and non-payment of taxes. Inclusion of this variable is important because during the tax year 2008-2009, the year in which the study was conducted, there were a few cases of imprisonment, mostly of political leaders and in some cases of corporate directors. It was pertinent to measure how effective imprisonment was in boosting the compliance of the largest of the taxpayers, who are financially and politically powerful. However, since the corporations are corporeal legal beings, the principal officers of the corporation, which may include its managing director, secretary, treasurer, agent, accountant or any other officer responsible for the management of the corporation‟s affairs (Tax Code 2/48) are liable to be imprisoned and prosecuted for any act of non-compliance.

A.5 Taxpayer service

Taxpayer service covers a wide range of issues from filing to examination of tax returns, the availability of a help desk, the running of formal and informal workshops/seminars, the establishment of a tax website, provision of tax return facilities, etc. Quality of taxpayer service is considered to be the first step towards building an atmosphere of cooperation and trust between the tax administration and taxpayers. In the LTU of Bangladesh, there is a taxpayer service wing to help large corporations resolve their compliance issues. In addition, the LTU is the only tax organ of Bangladesh where online return submission has been initiated to expedite the filing of returns by large corporate taxpayers. In regard to taxpayer service quality, this study did not particularize any component of service delivery; rather it took taxpayer service quality as a holistic concept measured on a five point Likert-type scale. The respondents were not asked direct questions as regards the impact of taxpayer service on tax compliance. Rather, they were asked to evaluate the quality of service they receive from the Large Taxpayer Unit. The purpose was to assess how their perception of good and bad quality service from the LTU, as defined by the respondents on the five-point scale, influences their response to compliance obligations.

A.6 Simplified tax law

Complex tax laws deflect taxpayers from their tax obligations and push them either towards tax avoidance or tax evasion (Slemrod, 1985 and Mirlees, 2010). What constitutes a simple tax law is difficult to define (OECD, 2006). In Bangladesh every year the tax laws are changed to some extent through the finance bills. Also, over the year, special regulatory orders (SROs) from the NBR make tax laws more complicated. Very often, the complexity of corporate tax law is attributed to the gap in understanding at different levels of the tax administration, for example between territorial and appellate authorities. Tax laws on capital gains from share trading are a particular example of complex tax law for many large corporate taxpayers in Bangladesh. In order to avoid measurement difficulties, the respondents were asked straightforward question on whether tax laws relating to large corporate taxpayers have been simplified by the tax authority. This was the same procedure followed in measuring the quality of taxpayer service. The respondents state their perception of the simplicity of the tax laws on a five-point scale. Stated perceptions are coded in numbers and are regressed with their actual compliance performance.

A.7 Mutual Understanding

In the literature it is argued that the purpose of mutual understanding is to make sure that all the parties the compliance process performs in accordance with the law and innocent tax payers are not penalized for silly mistakes (Sparrow, 1994 and Braithwaite, 1998). Not only

in the theory but also in practice, countries have moved towards an understanding based tax compliance system. Mutual understanding in the settlement of tax liabilities is an often-cited approach in the management of large corporate tax compliance in Bangladesh. In the National Budget speech for the fiscal year 2011-2012, the finance minister of Bangladesh laid special emphasis on the collaborative and mutually agreed settlement of tax disputes. The minister said that the tax administration should initiate and depend more on dialogues than statutory actions as a means to solving non-compliance. The Customs, Excise and VAT department of the NBR has already started the full application of discussion-based settlement of tax cases. However, in the income tax laws there is no mention of the issue of mutual understanding. Against this background, it is hoped that establishing mutual understanding is likely to persuade the taxpayers to comply with their tax obligations. Therefore, respondents were asked to state their perception of how good the mutual understanding between them and the LTU authority was on a five-point scale. The purpose was to see how compliance performance varied between those respondents who viewed understanding as good and those who viewed it as bad.

A.8 Marginal tax rate

Marginal income tax rate influences tax compliance, although the extent of this impact is indeterminate, and in some cases there are contradictory. Clotfelter (1983), Spicer and Becker (1980), and Friedland et al. (1978) find marginal tax rate has a negative impact on tax compliance. Among large corporate taxpayers in the US, Kamdar (1997) had the same finding – a negative relationship. Feinstein (1991) and Yaniv (2007), on the other hand, find that tax rate is positively related to tax compliance in pooled regression data, but negatively in separate year data. Allingham and Sandmo (1972) provide a stronger explanation as to why the tax rate impact can both be negative and positive. The positive impact emerges from the income effect, implying that an increase in tax rate reduces net income, and given the decreasing absolute risk aversion, taxpayers will be less willing to underreport their income. The negative impact comes from the substitution effect, meaning the higher the tax rate, the more profitable it is to underreport income at the margin. The ultimate effect depends on the interaction of the two impacts.

For large corporate taxpayers in Bangladesh, marginal tax rates for financial, manufacturing and cellular are different. The marginal tax rate is also different for different manufacturing businesses, for example, for textile and non-textile businesses. The corporate tax rate begins at 27.5%. This rate applies mainly to garment manufacturing, whether in or outside the LTU. The other rate, 37.5%, applies to other manufacturing and service providers across the corporate sectors. The highest corporate marginal tax rate is 45%, which is imposed on the finance and cellular.

A.9 Corporate size:

There are a few contending measures of corporate size, which is also an important matter for the definition of large corporate taxpayers (see section 2.8). Graham and Tucker (2006) find that corporate size has a positive relationship with corporate demand for tax shelters and tax evasion. Corporate size can be better measured by profit or sales than income data (Hasseldine et al., 2007). Size can also be measured by total or net assets. An examination of the large corporate taxpayers of Bangladesh shows that many of them enjoy exemptions and tax holidays. Profit reporting is highly biased when corporations enjoy exonerations and exemptions. Profit as a base may also be misleading when corporations have carried over

business losses or unabsorbed depreciation from previous years. To avoid this problem, total assets at book value are used as the measure of corporate size. Large corporate taxpayers submit their audited financial reports, which contain the yearly total and net assets of the corporation. This study collected the amount of total assets from audit reports and log transformed them for the same reason as that explained for tax audit (see section A.3 above).

A.10 Corporate Ownership:

The nature of ownership, private or public, can influence tax compliance, because publicly owned corporations are legally bound to undertake a certain kind of financial reporting. Some LTU large corporate taxpayers are listed on the Dhaka Stock Exchange (DSE) and others are not. Large corporations whose shares are traded on the stock market face tough monitoring by the DSE, the SEC (Securities Exchange Limited) and the Controller of Capital Issues (CCI). Control mechanisms like these keep the large corporations defensive about reporting their income and taxes (Cloyd, 1995; Mills and Newberry, 2001). Public disclosure of accounts is also important for public image and corporate fair play. A firm"s compliance makes a positive impression if its shares are publicly traded and strictly regulated by industry norms and practice (Aparicio et al., 2011). For this study, ownership is taken as a categorical variable measured as a binary response. Large corporations are categorized as private or public. Private versus public ownership was checked by the certificate of incorporation or from the audited financial reports. Also, a list of corporations whose shares were traded on the Dhaka Stock Exchange was collected to ascertain which were the publicly and which the privately owned corporations.

A.11 Corporate Location

From the point of view of locationality, corporations can be categorised as local or national and foreign or multinational. Location issues have important bearings on corporate compliance behaviour (Swenson, 1994; Grubert et al., 1999). It is argued that multinational corporations are more law abiding than national corporations. Discussion with the tax authority in Bangladesh also supports the idea that large multinational corporations are better in reporting and tax payment behaviour than local manufacturing corporations. To minimize the effects of corporate location on tax compliance, corporations having foreign investments of more than 25% are treated as multinationals, and all others are treated as local. To collect relevant data, the respondents were asked to provide information on this, which again was checked with the information provided in the audited financial statements.

A.12 Corporate Sector

One of the most important corporate demographic features is corporate sector affiliation. Compliance issues may vary according to the nature of the services or types of goods corporations produce. Manufacturing corporations can easily play with inventory valuations, while the banking corporations can play with provisions for bad debts, among the others. The large corporate taxpayers in Bangladesh are grouped into three corporate sectors: finance, manufacturing and service. Of these the finance sector corporations, for example, banks, insurance and leasing, have to ensure disclosure based on the Banking and Insurance Act, 1991 of Bangladesh. And the insurance have to follow the Insurance Act of 1940.To minimize the confounding role of sector affiliation, the variable was measured categorically and the data for such measurement were collected from the LTU database.

A.13 Employee Salary

Corporate employees work as agents between their corporate owners and the tax authority. Employees tend to introduce tax evasion by committing accounting fraud as a condition of, or in the hope of, higher pay and incentives from the corporate management (Desai and Dharmapala, 2005; Slemrod, 2004). There is growing evidence that employee salary is based on the after-tax income of corporations. However, salary is fixed in a secret agreement and is therefore difficult to measure. For ease of measurement, it was measured on the basis of total on salary and perquisites, as reported in the income statement. In the case of general insurance, expenditure on salaries is not reported separately, but is included in management expense. To take account of this, management expenses are considered as a measure of salary expense. To normalize data distribution among firms of unequal sizes, the data collected are log transformed.

A.14 Corporate Age

In finance and economics, corporate life cycle theories and corporate profit motives have been a well-founded concept in which corporate tax issues are of crucial importance (OECD, 2002; Mueller, 1972). Longer established corporations are more likely to have adopted and habituated themselves to compliance practices, or to have developed a certain resistance with the help of professional expertise. The tax compliance issues of such corporations are likely to be different than from those of newer corporations. Corporate age is measured by the years or time lapsed from the year of business incorporation. A certificate of incorporation is the document that best indicates how old a business is. The three categories made on the basis of age are: 7-10 years old, 11-14 years old and 15 years or more.

A.15 Types of Advisor

There is substantial evidence that paid preparers play a key role in the tax compliance process (Erard, 1993; McGill, 1988), although it is quite ambiguous whether influence is positive or negative in relation to compliance behaviour (Hite and Hasseldine, 2003). To expand our understanding of the regression process, controlling for the role of tax advisors was essential. Tax advisory services in large corporations are varied and diversified. Some corporations appoint paid advisors to plead tax matters with the tax office as and when they need them. Others have their own tax advisory department manned by professionals who deal directly with the tax office. The third category contains a combination of both, with both in-house tax staff and appointed advisors working jointly to address compliance issues. Therefore, to control for the role of tax advisory services, the categories created were: in-house tax department; appointed tax professional; and both in-house and appointed professionals. Data were collected from the questionnaire survey and were measured as a categorical variable.

B. Respondent Attitudes to Coercive and Persuasive Tax Compliance Instruments

The purpose of this discussion is to see how respondents from different corporate sectors (i.e., finance, manufacturing and service) differ in their attitude to coercive and persuasive instruments. Three trained and skilled research assistants were appointed to contact the respondents once the questionnaire had been mailed-out. On two separate occasions, six

questions were asked. The questions and the research assistants responsible for collecting filled-in questionnaires were the same on both occasions. Of the six questions, three were on coercive and three on persuasive instruments. Questions were to be answered on a five-point Likert-type scale. That meant that respondents were given five options from which to make a choice. The choices went from "strongly agree" to "strongly disagree", or "very good" to "poor", for both the main and the re-test survey.

A Kruskal-Wallis (KW) one-way ANOVA of ranks was used for this purpose. This is a non-parametric test that determines whether the means from different samples are from the same population (Siegel and Castellan, 1988). Gray et al. (2001) applied the KW test with a sample of 134 large multinational firms stratified into manufacturing and non-manufacturing groups to determine respondents" attitudes towards policy and non-policy factors in their investment decisions. There is, however, a debate as to whether Likert-type choices should be treated as nominal or ordinal variables. Those arguing that Likert-type items should be taken as a nominal variable apply a t-test for the inferential statistics; those who prefer them to be taken as ordinal variable use Kruskal and Willies (KW) or Mann-Whitney U tests, depending on sample size and distribution (Winter and Dodou, 2010; Clason and Dormody, 1994).

Considering the sample size, a KW test was conducted to examine the null hypothesis that the median values over different respondent groups were equal (Nikolaidis, 2009). Results obtained suggested that there was a statistically significant difference among the three sectors" perceptions of taxpayer service ($\chi2 = 3.166$, df = 2, P = 0.03), with a mean rank (median values) of 70.54 for the finance, 90.84 for the manufacturing and 77.54 for the service sector corporations. Thereafter, a follow-up test was conducted among the three groups using the Bonferroni approach to find out how the groups" medians differed. It revealed a significant difference between manufacturing and finance corporations" attitudes, meaning that manufacturing corporations were more interested in taxpayer-service-based compliance than finance corporations.

The mean values (median values) of mutual understanding between large corporate taxpayers and the LTU were 77.72, 66.72 and 91.87 for finance, manufacturing and service sector corporations respectively. KW was used to examine the null hypothesis that the median values of the three corporate groups were equal and its result ($\chi2 = 7.822$, df = 2, P = 0.026) suggested that we reject the null hypothesis and adopt its alternative research hypothesis. The follow-up test by the Bonferroni approach revealed a significance difference between service and manufacturing corporations" attitudes, meaning that the service sector was more interested in mutual-understanding-based compliance than the manufacturing corporations.

Regarding their attitude to simplified tax law, the mean values (median values) were 82.91, 71.58 and 71.74 for finance, manufacturing and service sector corporations respectively. The KW test showed that the median values of the three corporate groups were equal, and its result ($\chi2 = 3.12$, df = 2, P = 0.209) suggested that we accept the null hypothesis. Therefore, there was no difference in the attitudes of the three groups towards simplified tax law.

The mean values (median values) of the usefulness of penalty were 68.62, 85.35 and 81.30 for finance, manufacturing and service sector corporations respectively. The KW test result ($\chi2 = 5.081$, df = 2, P = 0.056) suggested that we reject the null hypothesis and adopt its alternative research hypothesis. The follow-up test by the Bonferroni approach revealed a significant difference between manufacturing and finance corporations" attitudes, meaning the manufacturing sector was more confident of the usefulness of penalties than the finance sector.

The mean values (median values) of the effectiveness of imprisonment were 74.35, 78.35 and 81.87 for finance, manufacturing and service sector corporations respectively. A KW test was used to examine the null hypothesis that the median values of the three corporate groups were equal and its result ($\chi2 = .759$, df = 2, P = 0.684) suggested that we accept the null hypothesis. Therefore, there was no difference in the attitudes of the three groups towards the effectiveness of imprisonment.

Regarding their attitude to tax audit, the mean values (median values) were 82.91, 71.58 and 71.74 for finance, manufacturing and service sector corporations respectively. The KW test showed that the median values of the three corporate groups were equal and its result ($\chi2 = 3.12$, df = 2, P = 0.209) suggested that we accept the null hypothesis. Therefore, there was no difference in the attitudes of the three groups towards simplified tax law.

C. ANOVA based within and between sector variation as an influence of corporate sector

The variance estimates of corporate sector measured by ANOVA (Analysis of Variance) have been presented here to make a comparison with the outputs derived from the random effects model. It is, however, an unorthodox procedure to use ANOVA for binary variables, although feasible (UCLA, 2007; Field, 2010; Baker, 2006). The unorthodoxy comes from the fact that ANOVA assumes normal distribution. As far as the random effects of corporate sector on filing compliance is concerned, it has a between-sector mean square (MS) of .423 and a within-sector mean square of .128, with a model r^2 of 0.041 (see Table A.1).The sum of between-sector squares (SS) is .847 and that for within-sector squares is 19.412. The corresponding F statistic is 3.30, with a significance level of 0.039; thus the model appears to be significant at the p < .05 level. However, the intra-class correlation (ICC = .046) shows that only a little of the variation in filing compliance between the corporations is explained by corporate sector. The value of intraclass correlation also suggests that corporations within the sectors are as different from each other as corporations across the sectors.

Table A.1: Measurement of variations between and within corporate sectors for filing compliance

$R^2 = 0.041$

Source	SS	df	MS	F	P
Between sectors	.847	2	.423	3.30	0.0397
Within sector	19.412	151	.128		
Total	20.259	153	.132		
Intra-class correlation (ICC)	0.046				

Note: Estimated SD of corporate sector effect .079, estimated SD within sector is .358 and estimated reliability of sector means is 0.696

The reporting compliance random effects model has an r^2 of 0.069, which means that the proportion of variation explained by the context variable is low (Table A.2). The sum of the squares (SS) for between and within market sectors are 2.66 and 35.60 respectively. Within-sector variation in reporting compliance is much higher compared to within-sector variation in filing compliance. The corresponding F statistic is 5.65 and significant at the level of 0.004. Thus the model appears to be significant. The intra-class correlation (ICC = .08) is very near to zero, meaning that corporations within the same sector are as different from each (non-homogeneous) other as corporations across sectors.

Table A.2: Measurement of variations between and within the corporate sectors for reporting compliance

$$R^2 = 0.069$$

Source	SS	df	MS	F	P
Between Sectors	2.662	2	1.33	5.65	0.004
Within Sector	35.60	151	.235		
Total	38.266	153	.250		
Intra-class Correlation (ICC)	0.089				

Note: Estimated SD of corporate sector effect is .152, estimated SD within corporate sector is .485, and est. reliability of sector mean is 0.822

The influence of corporate sector on payment compliance, as explained by the model r^2 (0.017) indicating a low capacity of the model to explain between-sector variations. The sum of squares (SS) for between and within corporate sectors are. 501 and 28.122 respectively. Within corporate sectors, variation in payment compliance is much higher than between corporate sectors. The corresponding F statistic is 1.35 and has a significance level of 0.26. Thus the model appears not to be significant. The intra-class correlation (ICC = .007) shows that corporations within the same sector are as different from each other as corporations across sectors.

Table A.3: Measurement of variations between and within the corporate sectors for payment compliance

$R^2 = 0.0175$

Source	SS	Df	MS	F	P
Between sectors	.501	2	.250	1.35	0.263
Within sector	28.122	151	.186		
Total	28.623	153	.187		
Intra-class correlation (ICC)	0.007				

Note: Estimated SD of corporate sector effect is .036, estimated SD within corporate sector is .431, and est. reliability of sector mean is 0.256

Finally, the r^2 for the model on overall compliance is .010 (Table A.4), which suggests that the corporate sector is not very successful in explaining variability in overall tax compliance. The sum of squares (SS) for between and within market sectors are .393 and 35.50 respectively, and the corresponding F statistics are .85 with a significance level (p = .43). Thus the model does not seem to be significant. The ICC is zero, implying that when the influence of corporate sector is considered, corporations within the same sector are as different from each other as corporations across different sectors are.

Table 6.12: Measurement of variations between and within the corporate sectors for overall compliance

$r^2 = 0.010$

Source	SS	df	MS	F	P
Between sectors	.393	2	.196	0.84	0.435
Within sector	35.509	151	.235		
Total	35.907	153	.234		
Intra-class Correlation (ICC)	0.00000				

Note: Estimated SD of corporate sector effect is nil, estimated SD within corporate sector is .484, and est. reliability of sector mean is 0.00

APPENDIX B (TABLES)

Table B.1: Appeals outcome on cases found non-compliant by desk and comprehensive audit (N=154).

Appeals cases	Frequency	Percent	Valid Percent	Cumulative Percent
Fail	58	37.7	37.7	37.7
Win	14	9.1	9.1	46.8
Others	13	8.4	8.4	55.2
Total	85	55.2	55.2	
Not an appealable case	61	39.6	39.6	94.8
Did not opt for an appeal	8	5.2	5.2	100.0
Total	154	100.0	100.0	

Table B.2: Ranking of coercive and persuasive instruments for filing compliance

Instruments	Sectors	Ranking							Total
		1st	2nd	3rd	4th	5th	6th	7th	
Penalty	Finance	35	8	12	6	8	7	4	80
	Manufacturing	26	9	1	1	2	4	0	43
	Service	7	5	2	5	1	8	3	31
	Total	68	22	15	12	11	19	7	154
Simplified tax law	Finance	21	5	5	8	9	13	19	80
	Manufacturing	9	0	4	2	8	9	11	43
	Service	9	1	8	5	3	2	3	31
	Total	39	6	17	15	20	24	33	154
Mutual understanding	Finance	13	29	11	6	8	5	8	80
	Manufacturing	5	8	6	6	11	2	5	43
	Service	7	9	8	4	0	1	2	31
	Total	25	46	25	16	19	8	15	154
Taxpayer service	Finance	4	18	24	2	4	14	14	80
	Manufacturing	1	5	4	5	9	12	7	43
	Service	6	12	7	1	2	3	0	31
	Total	11	35	35	8	15	29	21	154
Tax audit	Finance	4	5	8	29	18	12	4	80
	Manufacturing	2	5	8	13	9	5	1	43
	Service	1	3	1	7	8	8	3	31
	Total	7	13	17	49	35	25	8	154
Imprisonment	Finance	1	3	11	14	16	18	17	80
	Manufacturing	0	1	10	11	1	7	13	43
	Service	1	0	3	2	11	6	8	31
	Total	2	4	24	27	28	31	38	154

Table B.3: Ranking of coercive and persuasive instruments for reporting compliance

Instruments	Sectors	Ranking							Total
		1st	2nd	3rd	4th	5th	6th	7th	
Penalty	Finance	28	11	13	10	10	6	2	80
	Manufacturing	21	6	2	3	4	3	4	43
	Service	6	7	3	6	4	2	3	31
	Total	55	24	18	19	18	11	9	154
Simplified tax law	Finance	18	6	11	7	7	12	19	80
	Manufacturing	7	1	8	1	5	9	12	43
	Service	11	0	6	4	1	4	5	31
	Total	36	7	25	12	13	25	36	154
Mutual understanding	Finance	12	23	15	5	6	8	11	80
	Manufacturing	8	11	6	3	13	0	2	43
	Service	7	7	12	3	1	1	0	31
	Total	27	41	33	11	20	9	13	154
Taxpayer service	Finance	7	17	14	6	5	19	12	80
	Manufacturing	3	8	3	3	5	13	8	43
	Service	7	12	5	0	3	3	1	31
	Total	17	37	22	9	13	35	21	154
Tax audit	Finance	10	7	8	17	20	13	5	80
	Manufacturing	2	2	6	14	8	10	1	43
	Service	1	3	2	5	10	7	3	31
	Total	13	12	16	36	38	30	9	154
Imprisonment	Finance	6	3	9	17	15	12	18	80
	Manufacturing	1	2	10	10	3	3	14	43
	Service	1	0	3	2	10	10	5	31
	Total	8	5	22	29	28	25	37	154

Table B.4: Ranking of coercive and persuasive instruments for payment compliance

| Instruments | Sectors | Ranking | | | | | | | Total |
		1st	2nd	3rd	4th	5th	6th	7th	
Penalty	Finance	38	11	10	5	8	7	1	80
	Manufacturing	24	9	3	3	2	2	0	43
	Service	9	4	2	5	3	5	3	31
	Total	71	24	15	13	13	14	4	154
Mutual understanding	Finance	13	26	12	5	11	4	9	80
	Manufacturing	11	8	5	4	12	1	2	43
	Service	8	8	8	4	0	2	1	31
	Total	32	42	25	13	23	7	12	154
Simplified tax law	Finance	16	2	7	8	11	12	24	80
	Manufacturing	5	1	4	3	6	11	13	43
	Service	9	1	8	5	2	3	3	31
	Total	30	4	19	16	19	26	40	154
Taxpayer service	Finance	4	17	18	3	3	24	11	80
	Manufacturing	2	6	4	3	7	11	10	43
	Service	5	12	6	0	4	3	1	31
	Total	11	35	28	6	14	38	22	154
Tax audit	Finance	4	6	9	25	18	14	4	80
	Manufacturing	1	1	7	19	10	3	2	43
	Service	0	4	3	6	6	9	3	31
		5	11	19	50	34	26	9	154
Imprisonment	Finance	3	5	14	14	19	8	17	80
	Manufacturing	0	5	12	7	3	6	10	43
	Service	1	1	2	3	12	5	7	31
	Total	4	11	28	24	34	19	34	154

Table B.5: Ranking of coercive and persuasive instruments for overall compliance

Instruments	Sector	Ranking							Total
		1st	2nd	3rd	4th	5th	6th	7th	
Taxpayer service	Finance	55	11	4	3	2	2	3	80
	Manufacturing	20	9	1	4	6	2	1	43
	Service	18	6	3	2	0	0	2	31
	Total	93	26	8	9	8	4	6	154
Simplified tax law	Finance	35	15	10	7	5	5	3	80
	Manufacturing	19	10	7	6	0	1	0	43
	Service	14	6	2	4	2	2	1	31
	Total	68	31	19	17	7	8	4	154
Tax audit	Finance	35	23	8	4	3	2	4	80
	Manufacturing	14	16	5	5	1	2	1	43
	Service	10	8	4	5	1	0	1	31
	Total	59	49	17	14	5	4	6	154
Mutual understanding	Finance	20	36	13	3	2	4	2	80
	Manufacturing	5	23	7	3	2	1	2	43
	Service	15	8	1	3	0	2	2	31
	Total	40	67	21	9	4	7	6	154
Penalty	Finance	8	20	17	19	9	5	3	80
	Manufacturing	5	5	11	10	4	5	2	43
	Service	4	8	6	6	3	2	2	31
	Total	17	33	34	35	16	12	7	154
Imprisonment	Finance	6	35	19	9	6	4	1	80
	Manufacturing	3	11	7	10	9	2	1	43
	Service	4	10	4	5	5	2	1	31
	Total	13	56	30	24	20	8	3	154

Table B.6: Reporting statistically significant variables in the logit models „with and without" the potential context variables.

Compliances	Significant predictors			
	With all predictors (1)	Without corporate sector (2)	Without ownership levels (3)	Without national boundaries (4)
Filing	penalty, audit	audit	penalty, audit	penalty, audit
Reporting	audit	audit	audit	audit
Payment	audit imprisonment	audit	audit imprisonment	audit, imprisonment
Overall	taxpayer service, audit, simplified tax law	audit, taxpayer service	taxpayer service, audit, simplified tax law	audit

Table B.7: Risk estimation of various CHAID model

Compliance type	Method	With the influence of corporate sector		Without the influence of corporate sector	
		Estimate	S E	Estimate	SE
Filing	Resubstitution	.156	.029	.156	.029
	Cross-validation	.188	.032	.162	.030
Reporting	Resubstitution	.091	.023	.091	.023
	Cross-validation	.091	.023	.091	.023
Payment	Resubstitution	.247	.035	.247	.035
	Cross-validation	.247	.035	.247	.035
Overall	Resubstitution	.201	.032	.195	.032
	Cross-validation	.221	.033	.195	.032

Growing Method: CHAID
Dependent variable: filing compliance

Table B.8: Classification of various CHAID model

Compliance Type	Observed	With the influence of corporate sector			Without the influence of corporate sector		
		Predicted			Predicted		
		Tax non-compliant	Tax compliant	Per cent correct	Tax non-compliant	Tax compliant	Per cent correct
Filing	Tax non-compliant	0	24	.0%	0	24	.0%
	Tax compliant	0	130	100.0%	0	130	100.0%
	Overall percentage	.0%	100.0%	84.4%	.0%	100.0%	84.4%
Reporting	Tax non-compliant	71	0	100.0%	71	0	100.0%
	Tax compliant	14	69	83.1%	14	69	83.1%
	Overall percentage	55.2%	44.8%	90.9%	55.2%	44.8%	90.9%
Payment	Tax non-compliant	0	38	.0%	0	38	.0%
	Tax compliant	0	116	100.0%	0	116	100.0%
	Overall percentage	.0%	100.0%	75.3%	.0%	100.0%	75.3%
Overall	Tax non-compliant	86	11	88.7%	76	21	78.4%
	Tax compliant	20	37	64.9%	9	48	84.2%
	Overall percentage	68.8%	31.2%	79.9%	55.2%	44.8%	80.5%

Growing Method: CHAID
Dependent variable: Overall compliance

B.9 Appeals cases lodged by different type of non-compliant taxpayers

Compliance Type	Compliance Outcome	Did the taxpayer appeal?			
		Yes	No	No Ground	Total
Filing	Tax compliant	8	3	13	24
	Tax non-compliant	77	5	48	130
	Total	85	8	61	154
Reporting	Tax compliant	69	2	0	71
	Tax non-compliant	16	6	61	83
	Total	85	8	61	154
Payment	Tax compliant	31	7	0	38
	Tax non-compliant	54	1	61	116
	Total	85	8	61	154
Overall	Tax compliant	76	8	13	97
	Tax non-compliant	9	0	48	57
	Total	85	8	61	154

B.10: Corporate Tax rates in Bangladesh

Corporate Categories	Corporate Tax Rates	
	2008-09	2010-2011
Publicly Traded Normal Tax rate (paying dividend by 10% or >) Higher rate (paying dividend by <10%)	27.5% 37.5%	27.5% 37.5%
Financial corporations: Banks, Insurances and Leasing	45%	42.5%
Non-publicly traded	37.5%	37.5%
Mobile Phone Operator Corporations: Publicly Traded Non publicly traded	35% 45%	35% 45%

SurveyQuestionnaire

1.   Name of your organization:

2.   Which of the following types of corporation is this? (Please tick one)

a) Public limited   b) Private limited   c) Other (Please specify)

3.   To which corporate sector do you belong? (Please tick one)

a) Finance   b) Manufacturing   c) Service   d) Other (Please specify)

4.   Do you have foreign shareholding of more than 25% of your assets? (Please tick one)

Yes   No   Other (Please specify)

5.   Do you have an in-house tax advisor, or do you appoint an outside advisor to settle your tax matters or both? (Please tick one)

In-house tax advisor   Appointed tax advisor   Both

6. To ensure the timely submission of tax returns, how much would each of the following contribute? (PLEASE RANK in order of importance: 1, 2, 3…6, with 1 being the top and 6 the last choice)

    a. Charging penalties for non-declaration   --------------
    b. Auditing of corporation accounts by your tax office   --------------
    c. Imprisoning those responsible in non-complier corporations --------------
    d. Simplifying income tax law   --------------
    e. Quality taxpayer service by tax office   --------------
    f. Mutual understanding between tax office and corporations   --------------

7. To ensure timely declaration of full income, how much would each of the following contribute? (PLEASE RANK in order of importance: 1, 2, 3 ...6, with 1 being the top and 6 the last choice)

    a. Charging penalties for non-declaration   --------------
    b. Auditing of corporation accounts by your tax office   --------------
    c. Imprisoning those responsible in non-complier corporations --------------
    d. Simplifying income tax law   --------------
    e. Quality taxpayer service by tax office   --------------
    f. Mutual understanding between tax office and corporations   --------------

8. To ensure timely payment of all taxes, how much would each of the following contribute? (PLEASE RANK in order of importance: 1, 2, 3 ...6, with 1 being the top and 6 the last choice)

    a. Charging penalties for non-declaration   --------------
    b. Auditing of corporation accounts by your tax office   --------------
    c. Imprisoning those responsible in non-complier corporations --------------
    d. Simplifying income tax law   --------------
    e. Quality taxpayer service by tax office   --------------
    f. Mutual understanding between tax office and corporations --------------

9. To ensure fulfilment of all tax obligations (i.e., filing return, paying taxes and reporting income) properly, how much would each of the following contribute (PLEASE RANK in order of importance: 1, 2, 3 ...6, with 1 being the top and 6 the last choice)

    a. Charging penalties for non-declaration   --------------
    b. Auditing of corporation accounts by your tax office   --------------
    c. Imprisoning those responsible in non-complier corporations --------------
    d. Simplifying income tax law   --------------
    e. Quality taxpayer service by tax office   --------------
    f. Mutual understanding between tax office and corporations --------------

10. A significant goal of tax administrations is to provide quality service to taxpayers. The LTU has developed a taxpayer service wing to provide quality service. Please show which of the following best reflects your choice for the statement below by ticking a box on the line.

The quality of taxpayer service provided to large corporate taxpayers by the LTU is:

Very Good	Good	Fair	Poor	Very Poor
☐	☐	☐	☐	☐

11. Simplifying tax law is one of the goals of the LTU, which hopes simplification will improve large corporate taxpayers" ability to understand their tax obligations and reduce undesirable legal disputes. Please show which of the following best reflects your choice for the statement below by ticking a box on the line.

The income tax laws relating to large corporations have been simplified by the LTU:

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

12. Mutual understanding between large corporations and the LTU helps in solving common concerns and establishing an enhanced relationship. Please show which of the following best reflects your choice for the statement below by ticking a box on the line.

The mutual understanding between your corporation and the LTU is:

Very Good	Good	Fair	Poor	Very Poor
☐	☐	☐	☐	☐

13. The LTU employs penalties (Tax Codes 124, 125, 127 and 128 of the ITO, 1984) to control various kinds of non-compliance by large corporate taxpayers. Please show which of the following best reflects your choice for the statement below by ticking a box on the line.

Tax penalties imposed by the LTU on its large corporate taxpayers are useful:

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

14. Imprisonment of corporate taxpayers for committing tax offences (Tax Codes 164, 165 and 166) is seen as an effective step by the LTU administration. Please show which of the following best reflects your choice for the statement below by ticking a box on the line.

Imprisoning large corporate taxpayers (Tax Code 2/48) is an effective way to reduce tax related offences:

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

End of the questionnaire

Sample Semi-Structured Interview Questions

A. InterviewSchedule(ForLargeCorporateTaxpayers)

I. Please briefly describe the income tax compliance process of your corporation.

II. What are the main difficulties your corporation faces in the tax compliance process? What are the major encouraging issues?

III. In your view, what are the major reasons for a large corporation, including yours, failing to submit a tax return on time or pay the required taxes?

IV. Please say why some corporations don"t properly report their income in their tax return?

V. Why do you think that ----- is/are a strong reason for compliance failure? Please can you give me an example from your experience?

VI. Do you think that coercive instruments like penalty, audit and imprisonment contribute to higher tax compliance? Which one of them is important to filing and which one to reporting, payment and overall compliance?

VII. How do you perceive or describe the influence of quality taxpayer service, simplified tax law and mutual understanding between the tax administration and your corporation on tax compliance? In which ways do they affect different tax compliance obligations?

VIII. Do you think that a balanced use of coercive and persuasive instruments induces greater tax compliance by large corporations? Or should some of the compliance instruments be emphasised more than the other? And why?

B. InterviewSchedule(ForTaxOfficials)

I.   How long have you been working with large corporate taxpayers?

II.   Would you please describe the compliance behaviour of large corporate taxpayers?

III.   What are/were the major difficulties you face/faced in dealing with large corporate taxpayers?

IV.   In your opinion, why does a large corporation fail to submit its return on time or to pay its taxes?

V.   Please tell me why some corporations don"t declare their income properly in their tax return?

VI.   Why do you think that ----- is/are a strong reason for compliance failure? Can you give me an example from your experience?

VII.   Which coercive instrument do you use more among penalty, audit and imprisonment? Do you use some of them to increase filing compliance and others to increase reporting or payment compliance? Are all of them equally important to you in improving large corporate tax compliance?

VIII. How do you evaluate the role of persuasive compliance measures, including quality taxpayer service, simplified tax law and mutual understanding, in managing large corporate tax compliance? How are these measures related to the different compliance obligations?

IX.   Do you think that a balanced use of coercive and persuasive instruments induces greater large corporate tax compliance? Or should some of the compliance instruments be emphasised more than others? And why?

Table C.1: Linking the Free Nodes

Free nodes	Connection with other nodes
Accountability and transparency	Linking tax and non-tax laws Linking good corporate governance Linking institutional monitoring Linking institutional development
Accounting standards	Linking tax audits Linking corporate officials Linking international tax forums
Coercion as a policy tool	Linking tax law Linking politics and governance Linking the cultural and economic perspectives of the country Linking accounting standards Linking corporate income and profit Linking monitoring Linking fear of the tax environment Lining coercion with persuasion to make the complementary Linking corruption Linking comparatively soft measures, for example, CCTV Linking litigation
Corporate employees	Linking corruption Linking accountability Lining accounting standards
Insecurity of business	Linking profit motive Linking political issues Linking underreporting Linking auditors in the process
Institutional monitoring	Linking institutions Linking sectors Linking accountability Linking tax administration Linking coercion (positive role of coercion) Linking society
Persuasion as a policy tool	Linking tax law Linking marginal tax rate Linking motivation and attitude Linking complemetarity Linking habituality Linking taxpayer service Linking political atmosphere Linikng tax administration Linking education and ethics
Networking and modernization	Linking institutional development Lininking monitoring Linking accountability Linking accounting standards Linking taxpayer service

	Linking tax administration
	Linking tax audits and auditor
Ownership and partnership	Linking accountability
	Linking corruption
	Linking accounting standards
	Linking corporate good governace
	Linking mutual understanding
	Linking attitudinal development
Tax administration issues	Linking corruption
	Linking political-economic issues
	Linking mutual understanding
	Linking attitudinal issues
	Linking confidence building
	Linking training and education
	Linking sector issues
	Linking social responsibilities
	Linking accountability
	Linking trust
	Linking tax law
Tax audit standard	Linking training and education
	Linking accountiung standards
	Linking ethics
	Linking corruption
	Linking image and reputation
	Linking capacity issues
	Linking political and governance isssues
	Linking accountability
	Linking corporate profit and greed
Tax education and training	Linking corporate profit
	Linking persuasion
	Linking mutual understanding
	Linking accountability
	Linking tax administration
	Linking corruption
	Linking economic interetst or profit
	Linking to coercion
	Linking capacity building
Simplified tax law	Linking persuasion
	Linking accounting standards
	Linking sector issues
	Linking habituality
	Linking tax administration
	Linking tax audit
	Linking coercion
Taxpayer service	Linking coercion
	Linking persuasion
	Linking tax administration
Mutual understanding	Linking corporate profit
	Linking politics
	Linking the tax law/system

		Linking tax administration
		Linking accounting standards
		Linking persuasion
		Linking ethics and education

Table C.2: summary of key evidence from interviews

RESPONDENT NO.	TITLE	ISSUES
RES-01	Chartered Account	Focused on the importance of corporate sector characteristics and the influence of power and politics on tax compliance.
RES-02	Corporate Managing Director	Provided a general review of the coercive and persuasive instruments and emphasised mutual understanding as an option; acknowledged the role of corporate sectors in compliance behaviour.
RES-03	Corporate Finance Director	Focused on the importance of corporate sector characteristics and compliance behaviour: multinationals are better; services do not reduce the cost of compliance or produce value for money.
RES-04	Chartered Accountant	It"s the probability of any coercive action and regulatory discipline that induces compliance, not the amount of the penalty.
RES-05	Bank Finance Director	Argued that structural deficiency in the accounting system and lack of competent accounting staff cause many compliance problems.
RES-06	Addl. Commissioner , LTU	Focused on why taxpayer service fails and emphasized the need for coercion.
RES-07	Joint Commissioner, Khulna	Insisted that the possibility of a huge financial penalty was more coercive than its probability merited; preference for powerful, severe actions over soft, persuasive solutions.
RES-08	Second Secretary, NBR	Poor regulatory framework of the financial accounting system and its impact on income underreporting.
RES-09	Inspector, LTU	Tax officials" discretionary powers and their potential impact on compliance; large corporations are greedy profit-makers; also concentrated on complex tax law and uneven competition.
RES-10	Income Tax Practitioner	Audit adjustment process and how it influences compliance issues and how taxpayer service can be futile in creating compliance.

RES-11	Chief Finance Officer	Argued that imprisonment and other tough action can only bring transitory change, not a permanent change.
RES-12	Tax Commissioner, Chittagong	Hierarchical tax bureaucracy and tax audit problems; focused on the necessity for simplified tax law and reducing knowledge gaps.
RES-13	Commissioner, LTU	Acknowledged the issue of transfer pricing among large corporate taxpayers.
RES-14	Addl. Commissioner-	Concentrated on mutual understanding and their probable impact on tax laws; supported the persuasive mode of inducing tax compliance.
RES-15	Chief Finance Officer	Complex and costly tax laws make bribery likely and stimulate non-compliance.
RES-16	Deputy Commissioner, LTU	Focused on the issues of corporate sector affiliation and compliance behaviour.
RES-17	Managing Director	Discussed conflicting local and international accounting standards; and tax officials" inefficiency, mistrust and lack of mutual understanding.
RES-18	Chief Finance Officer	Argued that financial audit is corrupt and a strong source of tax non- compliance.
RES-19	Income Tax Practitioner	Disbelief, trust and negative attitude of the tax administration in creating tax non-compliance issues; tough laws cannot bring the desired outcome – you need to persuade.
RES-20	First Secretary, NBR	Explained why services may fail and persuasive measures become ineffective.
RES-21	Deputy Commissioner, LTU	Audit selection process and its impact on filing compliance; political vengeance and patronage as an explanation for tax compliance.

RES-22	Member, NBR	Explained how political intervention becomes a factor in the compliance process and service provisions become ineffective in creating compliance.
RES-23	Joint Commissioner, LTU	Inefficient and complex tax law discourages taxpayers from being compliant and indirectly makes them unreceptive to coercive actions; complex tax laws affect the trust-building process.
RES-24	Former Member, NBR	Tax officials" inefficiency and chaotic procedures make taxpayer service fail.
RES-25	Chartered Accountant	Argued for coercive actions and focused on increasing penal actions and strengthening regulation.
RES-26	Chartered Accountant	Taxpayer service and simplified tax law can be great good source of high corporate tax compliance.
RES-27	Second Secretary-NBR	Explained why mutual understanding fails and complicates the compliance process.