TAX KNOWLEDGE AND TAX COMPLIANCE DETERMINANTS IN SELF ASSESSMENT SYSTEM IN MALAYSIA

by

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ABSTRACT

Self assessment system (SAS) has become the key administrative approach for both personal and corporate taxation in developed countries including the USA, UK and Australia. This approach emphasises both the taxpayers' responsibility to report their income and the need for them to determine their own tax liability. Central to the motivations of self assessment system introduction is an increase in the efficiency of tax collection for the tax authority; however, of more vital importance is the need to enable this without having an unacceptable detrimental effect on the other key characteristics of a well-designed tax system (equity, wider administrative efficiency etc). This requires the development of public awareness of tax laws, and improvements in voluntary compliance. According to prior studies on this topic one of the main facilitating factors in achieving these aims is the development of the level of tax knowledge among taxpayers. The objective of this study is to investigate how facilitating factors interact in the development of a suitable SAS focusing in particular on the role of tax knowledge. To explore the interaction in the real setting the country of Malaysia is used as a case tax system for this study. This country is due to chosen its fairly recent introduction of SAS enabling a specific focus on changes brought about by the move to a SAS with as little time for 'noise' creating factors as possible that may result from longer implemented SAS. It also enables a study of this topic in the context of a developing country where many of the prior studies in this area have had in the context of developed countries. This study focuses on the level of individual Malaysian taxpayers' knowledge and explores how tax knowledge levels influence tax compliance behaviour in a new SAS. Data was collected through a large scale national postal survey resulting in 1,073 responses. Five stages were used to facilitate the analysis. Stage 1, using the t-test and ANOVA, focuses on the characteristics of taxpayers' knowledge including gender, ethnicity, educational level and income level. Stage 2 attempts to describe the relationship between tax knowledge and tax compliance using multiple regressions. Stage 4 examines taxpayers' compliance determinants more widely than tax knowledge. Nine variables were tested in Stage 4. Control variables were added in both Stage 3 and Stage 5 in order to assess whether the inclusion of control variables significantly affects tax compliance behaviour. The results suggested that tax knowledge has a significant impact on tax compliance even though the level of tax knowledge varies significantly among respondents. The results also indicate that tax compliance is influenced specifically by probability of being audited, perceptions of government spending, penalties, personal financial constraints, and the influence of referent groups. Results of this study answer such questions as which various taxpayer characteristics of tax knowledge affect compliant behaviour. The results of this study can inform policymakers on the extent to which tax knowledge is important in a self assessment system and in what ways it can affect compliance. It also provides an indicator for tax administrators of the relative importance of tax knowledge in assisting with the design of tax education programmes, simplifying tax systems and developing a

wider understanding of taxpayers' behaviour. This study contributes to current global literature in this field of the relative importance of tax knowledge in affecting tax compliance, as well as exploring the factors that make people pay taxes in a self assessment system, and discusses methods of increasing voluntary compliance.

DEDICATION

To my late father, father in law, and mother in law, mother, wife and children.

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LIST OF ABBREVIATIONS.

ANOVA	- Analysis of variance
ATO	- Australian Tax Office
CDQ	- Choice of Dilemma Questionnaire
CRA	- Canada Revenue Authority
DCV	- Demographic control variable
HMCE	- Her Majesty Customs and Excise
HMRC	- Her Majesty's Revenues and Customs
IRB	- Inland Revenue Board of Malaysia
IRS	- Internal Revenue Services
ITA	- Income Tax Act 1967
KW	- Kruskall Wallis
MWW	- Mann-Whitney and Wilcoxon
NTA	- National Tax Agency (Japan)
OAS	- Official Assessment System
OECD	- Organization for Economic Co-operation and Development
OLS	- Ordinary least squares
PAYE	- Pay as You Earned
RM	- Ringgit Malaysia (Malaysian currency)
RMC	- Royal Malaysian Customs
SAS	- Self assessment system
SD	- Standard deviation
SEM	- Structured equation modelling
TBCV	- Tax background control variable
TCDIR	- Tax compliance direct questions
TCHYP	- Tax compliance hypothetical questions
TPB	- Theory of Planned Behaviour
TRA	- Theory of Reasoned Action
UK	- United Kingdom
USA/US	- United States of America
VAT	- Value Added Tax
VIF	- Variance Inflation Factor

CHAPTER 1

INTRODUCTION AND THESIS OVERVIEW

1.1 INTRODUCTION

This chapter provides a general introduction to the subjects addressed in this thesis and provides a summary of the following content and key research outcomes. This chapter begins with the definition of tax, an explanation of brief the importance of tax in a country, as well as principles and objectives of tax. Research objectives, problems statements, the significance of the study and the outline of the thesis are also discussed in the latter part of this chapter. Each element of this chapter is then expanded upon and developed more fully in subsequent chapters (as outlined in section 1.8).

Taxation is one of the important elements in managing national income, especially in developed countries and has played an important role in civilized societies since their birth thousands years ago (Lymer and Oats, 2009: 1). Tax is defined as ‘a compulsory levy, imposed by government or other tax raising body, on income, expenditure, or capital assets, for which the taxpayer receives nothing specific in return’ (Lymer and

Oats, 2009: 3). However, not all payments to government are considered tax payments: for example, charges, tolls and other levies are paid to obtain a specific service and are not strictly tax payments.

Adam Smith in his book '*The Wealth of Nations'* which was published in 1776 suggested that a tax system is based on certain basic principles, namely equity, certainty, convenience and efficiency. Lymer and Oats (2009: 42) and Barjoyai (1987: 76) briefly defined the principles as follows:

Equity means a tax system should be fair among individuals and taxes should be levied based on taxpayers' capacity. Horizontal equity means that taxpayers with the same income or wealth should pay the same amount of tax (tax burden) while vertical equity means that taxpayers with high income (capacity) should pay higher tax (tax burden).

Certainty is defined as a taxpayer knowing his or her tax liability and when and where to pay the tax. It relates to the simplicity of the tax systems so that the taxpayers are easily understood and capable of calculating their tax liability.

Convenience relates to how people pay their taxes or engage with the tax system. For example, people more conveniently pay tax by it being deducted at source rather than paying a large amount of tax annually (Lymer and Oats, 2009: 50). The introduction of electronic filing is another example of a facility provided by the tax authority to ease the method of filing tax returns.

Efficiency refers to how the tax authority collects the tax revenues and can be divided into two subsections: administrative efficiency and economic efficiency. Administrative efficiency refers to the costs involved when collecting tax revenues. The more a tax costs to administer, the less of the money raised is available to the government to spend. The administrative cost should be as small as possible to achieve desirable economic efficiency (Lymer and Oats, 2009: 55). Economic efficiency referring to tax should not interfere with the working of the markets. For example, the introduction of a new tax or increase on the tax rates should not distort or affect taxpayers' behaviour (i.e. from compliant to less compliant).

The main objective of imposing certain taxes on the public is to generate revenues for the government for public expenditure (Singh, 1999; Shanmugam, 2003; Lymer and Oats, 2009: 2). However, there are other functions of taxes as suggested by Lymer and Oats (2009: 2) including to reduce inequalities through a policy of redistribution of income and wealth so that income gap between the rich and the poor is not as significant. Tax systems are also designed for social purposes, such as discouraging certain activities which are considered undesirable and protecting the environment. For instance, the excise taxes on alcohol and tobacco are (at least partly) exercised to decrease consumption and thus encourage a healthier lifestyle. Taxes are also expected to ensure economic goals through the ability of the taxation system to influence the allocation of resources including transferring resources from the private sector to the government to finance the public investment programme, the direction of private investment into desired

channels through such measures as regulation of tax rates and the granting of tax incentives. In addition, import duties could be used to protect local industries from foreign competition. This has the effect of transferring a certain amount of demand from imported goods to domestically produced goods.

Taxes can be classified into two main types: direct and indirect taxes. Direct taxes mean the burden (incidence) of tax is borne entirely by the entity that pays it, and cannot be passed on to another entity; for example, corporation tax and individual income tax. Indirect taxes are typically the charges that are levied on goods and services (consumptions) (Barjoyai, 1987: 77), for example VAT (Value Added Tax), sales tax, excise tax and stamp duties. Indirect taxes are not levied on individuals, but on goods and services. Customers indirectly pay this tax in the form of higher prices. For example, it can be said that while purchasing goods from a retail shop, the retail sales tax is actually paid by the customer. The retailer eventually passes this tax to the respective authority. The indirect tax actually raises the price of the goods and the customer's purchase by paying more for that product. Unlike indirect tax, direct taxes are based on 'ability to pay' principle but (by being very obvious to the taxpayer) they sometimes work as a disincentive to work harder and earn more because that would mean paying more tax (Mansor, Tayib and Yusof, 2005).

One of the main reasons why the government imposes taxes is to generate income to manage the economy and redistribute resources. In 2007, tax collection as percentage of Gross Domestic Products (GDP) in developed countries like the United States of America

(US) and the United Kingdom (UK) were 28.33% and 36.6% respectively (average Organization for Economic Co-operation and Development (OECD) countries in 2006 were 35.9%) (OECD, 2009). For developing countries, like Indonesia and Malaysia in 2008, the tax collection as percentage of GDP were 13.35 and 15.3% respectively (average Asian countries 22.5%) (Asian Development Bank, 2009). The importance of tax systems as a major revenue source in a country is undeniable (Slemrod, 1989), these statistics have evidenced that tax revenues are one of (if not the) main income source for many governments throughout the world but to maximize tax collection and minimize tax evasion among taxpayers is difficult to achieve in practice (Allingham and Sandmo, 1972).

A number of measures have been implemented by many countries in order to increase the revenue collection; this includes the change of the assessment system used by many countries for direct taxes from direct assessment to self assessment systems (SAS). Many countries have shifted to SAS for individuals, for example Sri Lanka (1972), Pakistan (1979), Indonesia (1984), Australia (1986-87), Ireland (1988), New Zealand (1988) and the United Kingdom (1996-97). In relation to the efficiency principles discussed earlier, objectives supporting the change to SAS were to increase voluntary compliance, reduce tax authorities' burden of assessing tax returns and increase tax collection efficiency (reduce tax collection costs) (refer Table 2.1). However, a research question therefore now arises related to this switch to SAS namely did the changes to a SAS achieve a desirable increase in the rate of voluntary compliance and succeed in reducing tax collection costs (increase efficiency)?

The main difference between direct assessment and SAS is that in direct assessment, it is the taxpayers' statutory duty to declare all the necessary particulars pertaining to their income and expenses for that particular year of assessment and submit the necessary returns together with all required supporting documents to the tax administrator. It is then the tax administrator's duty to assess all tax returns and issue a notice of tax stating the tax liability. However, under SAS, the tax authority's responsibilities, particularly on assessing the tax return and determining tax liabilities, has been shifted to taxpayers. For example, a taxpayer has to ensure that all income is accurately declared and calculate the tax payable, an expense is deductible before making a claim in his or her return.

The change to SAS has raised issues linked to the competency, honesty, capability and readiness of taxpayers to receive the burden of calculating and assuring the accuracy of the tax returns. For example, under the direct assessment, it is assumed that individual taxpayers might not possess the sufficient knowledge to compute their tax payable but in SAS, tax knowledge is vital as an insufficient level of tax knowlegde may result in inaccurate tax returns and and therefore computation of tax liability (Eriksen and Fallan, 1996; Loo, 2006).

Previous tax compliance studies linked to direct assessment have been conducted in many developed countries; for example, Allingham and Sandmo (1972) and Lewis (1982) suggested that taxpayers were likely to comply if the probability of being audited was high. However, in direct assessment, probability of being audited is not the only factor affecting tax compliance among the taxpayers. There are other factors such as age (Spicer

and Lundstedt, 1976), gender (Vogel, 1974), level of income (Mason and Lowry, 1981), income source (Wahlund, 1992), and perceptions of equity and fairness (Harris, 1989) that impact the compliance behaviour (Chapter 4 discusses the factors that affect tax compliance in detail). Are these variables still relevant and important in SAS and do the findings from developed countries like the US, Australia and New Zealand suggest the same results will occur if the study is conducted in developing tax regimes?

It is believed that the significant changes (changing to SAS) in tax administrations could produce better administrations, more focus on tax audit and investigations (rather than tax returns processing, and assessment creation) and reduce collection costs and time (Shanmugam, 2003; Kasipillai, 2000). However, there is limited published researches studying the implications of and the introduction of SAS, particularly in exploring taxpayers' behaviour (Loo, 2006). Therefore, this study attempts to provide empirical evidence regarding these issues in a SAS regime to add to this research literature. Moreover, this study focuses on the influence of tax knowledge on compliance behaviour and the determinants of tax compliance in SAS in Malaysia by using individual taxpayers as the respondents. The reasons why individual taxpayers in Malaysia are chosen as a focal point of study is discussed in 1.3.

1.2 PROBLEM STATEMENTS

One of the main barriers in implementing SAS is achieving acceptable levels of voluntary compliance (and thus tax collection efficiency), which typically involves many factors used in combination with each other such as fines, audit probability, tax rates, knowledge, attitude, norms and fairness (Kirchler, Hoelzl and Wahl, 2008). Findings of some prior research has indicated that in SAS, taxpayers tend to comply less as compared with direct assessment (Andreoni, Erard and Feinstein, 1998). This could happen due to unintentional non-compliance especially in the early years of the introduction due to factors such as lack of familiarity with the new system, or general limited knowledge of tax issues where such knowledge was not required and has to be obtained somehow. In Malaysia, SAS was implemented starting from year of assessment 2004, for individual taxpayers replacing a direct assessment system known as the 'Formal System'. SAS is essentially an approach whereby taxpayers are required by law to determine their taxable income, compute their tax liability and submit their tax returns based on existing tax laws and policy statements issued by the tax authorities. A notice of assessment is not issued under SAS. The tax return furnished by the taxpayer is deemed to be a notice of assessment. Cornell (1996: 12) defined 'self assessment' as 'do it yourself' in which taxpayers have to understand, interpret and apply tax laws to their own situation.

In contrast, under a direct assessment system (using Malaysia's the Formal System as an example), tax returns would be subjected to a detailed technical scrutiny by the Inland

Revenue Board Malaysia (IRB). The spirit of SAS is to educate taxpayers and make them aware of their tax responsibilities (IRB, 2006; Kasipillai, 2000). Hence, assuming that taxpayers are adequately conversant with the tax legislation, guidelines, ruling and administrative procedures, unlike under the Formal System the Inland Revenue Board (IRB) would not assess all tax returns and issue notices of assessment. However, a detailed technical scrutiny through tax audits can still be implemented randomly.

In the year of assessment 2003, a year before SAS implemented for individuals, the IRB had assessed 98.65% of the tax return (IRB Annual Report, 2003). Under the Formal System, the compliance behaviour of the taxpayers in terms of accurately completing the tax returns (declaring all incomes and deductions) is easier to detect because the taxpayers are required to submit some relevant documents such as evidence of income from employment, dividend vouchers and other receipts as proof for deductions. However, in SAS, the taxpayers do not need to submit such documents (other than dividend vouchers for tax rebate purposes). Moreover, in SAS, the tax authority heavily relies on taxpayers' honesty during their completion of the tax return. Hence, in this context, tax compliance is an important issue for both administrators and taxpayers so that total tax collections are accurate and finally could 'reduce the tax gap' (Mohani, 2001: 187).

Therefore, judging from the significant difference in terms of the mechanism of SAS particularly in filing processes (no supporting documents attached), assessments (no

detailed scrutiny assessments) as well as an issue of the competency (tax knowledge), it is believed that these significant changes (to a SAS) could potentially make tax knowledge much more important factor when ascertaining the accuracy of tax returns and therefore more directly affect the tax compliance behaviour of individual taxpayers.

1.3 OVERVIEW OF MALAYSIA AS A COUNTRY AND WHY MALAYSIA IS SELECTED IN THIS STUDY?

Malaysia is a federation that consists of thirteen states and three federal territories in Southeast Asia with a total land of 329,847 square kilometres (127,355 sq. miles) and the population stands at over 27 million (Department of Statistic Malaysia, 2008). The country is separated into two regions—Peninsular Malaysia and Malaysian Borneo—by the South China Sea. Malaysia borders Thailand, Indonesia, Singapore, Brunei and the Philippines. Malaysia's head of state is the *Yang di-Pertuan Agong* (The King) and the government is headed by a Prime Minister. The government is closely modeled on the Westminster Parliamentary System. The largest ethnic groups in Malaysia are the Malays, Chinese and Indians (Department of Statistic Malaysia, 2008). Malays who make up about 65% (Department of Statistic Malaysia, 2008) of the population are the predominant group with Chinese (22%), Indians (9%) and other ethnic groups (4%) making up the rest. Islam is the official religion but all other religions such as Christianity, Buddhism and Hinduism are freely practised. Malaysia is a federal

constitutional elective monarchy (further details on Malaysia as a country can be found in Chapter 3).

Tax systems in Malaysia were introduced by the British into the *Federation of Malaya* in 1947 and were based on *Heasman's Report* (Singh, 1999:138). Initially, the *Income Tax Ordinance 1947* was gazetted as the main act but subsequently reformed and replaced by *Income Tax Act 1967* (ITA) which took effect on January 1, 1968. Currently, ITA 1967 continues to be the main act to govern direct taxes in Malaysia, particularly corporate and individual income tax.

The *Lembaga Hasil Dalam Negeri* or the Inland Revenue Board (IRB) is the tax authority which administers direct taxes in Malaysia. Other than income taxes, the IRB is also responsible for administering, assessing, collecting and the enforcement of real property gain taxes, petroleum taxes and stamp duties. Royal Malaysian Customs (RMC) is the government agency responsible for administering the nation's indirect tax policy. The core business is to collect tax and in line with that, RMC's vision is to be a respected, recognized and a world class Customs Administration.

There are a number of factors that make Malaysia important for our study of tax compliance disciplines especially in a self assessment system. One of the most important factors is that Malaysia recently introduced SAS in year of assessment 2004 for

individual taxpayers and therefore has been operational now for five tax years, giving appropriate time to explore the extent to which developments of tax knowledge and changes in compliant behaviour are visible, resulting from this change of tax administrative approach. SAS for companies was first introduced in 2001 and this was followed by business, partnership and cooperatives in 2003. The IRB therefore has now experience of nine years of companies' SAS (year of assessment 2001 to 2009). The effectiveness of the SAS has been positive since its implementation. Tax collection from companies has increased at an average rate of 12.78% per year (IRB Annual Report, 2002). The legislation, tax services and education and the enforcement of the law are important elements which have led to the improvement of tax collection for companies.

Loo (2006: 284) also suggested that there is a need to explore the effectiveness of SAS from various perspectives after several years of implementaion especially in terms of tax knowledge and tax compliance behaviour. She also recommended a comparison between Malaysia and European countries as vital to enhance Malaysian tax administration.

In addition, other factors help to make Malaysia an interesting context in which to study tax compliance. These include the fact that it is a complex multi-racial and multi-faith country, enabling us to contribute new evidence to the tax compliance literature where previous studies evidenced that ethnicity and religion have a significant impact on compliance (see Loo, 2006; Mohamad Ali, Mustafa and Asri, 2007; Devos, 2005; 2008). Malaysia also provides an ideal opportunity for comparative analysis with previously developed countries such as the United States, United Kingdom, Australia and OECD

countries. Despite similar capitalistic economies, structural tax differences do exist between Malaysia and other countries (particularly UK and the US) that make Malaysia a significant country to study. For instance, the personal tax rates structure in Malaysia is effectively a progressive tax: rates stand at 1% to 27% (refer Table 3.2) which are lower than those countries[1] The tax rates are usually changed in a yearly budget which is presented by the Minister of Finance. There is no capital gain tax and inheritance tax imposed in Malaysia except for the real property gains tax which is enacted by Real Property Gain Tax 1976. Interestingly, although Malaysian tax systems were largely based on British tax systems, all taxpayers are required to complete tax returns every year (IRB, 2008) while in the UK lodgement of tax returns is not something everyone has to do (Lymer and Oats, 2008; 43; Her Majesty's Revenues and Customs (HMRC), 2009).

Also, a number of previous authors suggest that significant cross cultural differences exist between countries that can affect tax compliance in different ways in these jurisdictions (Hofstede, 1980; Chan, Troutman and O'Bryan, 2000; Mohamad Ali *et.al.*, 2007). It is therefore important to study tax compliance in a wide variety of countries to enable development of appropriate compliance models for those countries (i.e models demonstrated to be applicable in country A may or may not be equally applicable in country B) and to add to general knowledge on tax compliance issues. Like the United States and other western jurisdictions, tax compliance represents a significant problem in Malaysia particularly in the self assessment system (Kasipillai, 2000; Mohani, 2001; Kasipillai, Aripin, and Amran, 2003; Shanmugam, 2003; Loo, 2006).

[1] UK – 1% - 40%, US – 1% - 35% and Australia 1% - 45% as at year of assessment 2009.

Therefore, choosing Malaysia as a focal point, this study contributes to the tax compliance literature by investigating the extent to which western developed country tax compliance dimensions can be shown to also exist in an Asian developing country setting denoted in a study of Malaysia as well as to generate general principles of taxation and general conclusions of global general tax administration.

1.4 RESEARCH OBJECTIVES

'Knowledge about tax law is assumed to be important for preference and attitudes towards taxation. There is little research that explicitly considers how attitude towards taxation is influenced by specific knowledge of tax regulations' (Eriksen and Fallan, 1996: 387). The research done by Eriksen and Fallan demonstrated the importance of tax knowledge in a tax system, especially in a SAS. They suggested that fiscal knowledge correlates with attitudes towards taxation and that tax behaviour can be improved by better understanding of tax laws. A recent study by Kirchler *et. al.* (2008) also emphasizes that tax knowledge in individual taxpayers is also positively related to tax compliance (in line with Wahlund, 1992; Eriksen and Fallan, 1996; Park and Hyun, 2003, refer Chapter 4).

It has been stated and has long been discussed in tax compliance literature that there are many factors affecting tax compliance, with knowledge being a major influence especially in SAS. While previous literature is continuously contributing to new

development on tax compliance research, this study attempts to enrich the existent literature by providing a clearer picture and a holistic view of Malaysian individual taxpayers' compliance behaviour in SAS. It does this by providing the most comprehensive published study of individual taxpayers in Malaysia undertaken to date. This will in turn enable us to provide some wider comments applicable beyond the Malaysian situation at least where similar situations to that found in Malaysia can be found .

Individual taxpayers are the main subject of this study and are particularly important in understanding tax compliance particularly in a self assessment system (DasGupta, Lahiri and Mookherjee, 1995; Wallschutzky and Singh, 1995; Kasipillai, 2000; Mohamad Ali *et.al.*, 2007). Firstly, compared to corporate taxpayers, individual taxpayers are inclined to self-complete tax returns rather than engaging a tax agent (Trivedi, Shehata and Mestelmen, 2004). Since self assessment systems require a high level of tax knowledge, self completion among less knowledgeable taxpayers could lead to unintentional non-compliance behaviour and could increase tax gaps effects (Mohani, 2001; Riahi-Belkaoui, 2004).

Secondly, compared to other sources of taxes (i.e petroleum tax, corporate tax and stamp duties), the nature of operation and administration of personal income tax in Malaysia is complex (for example all taxpayers must file tax returns annually unlike in some SAS e.g. the UK), is time consuming and incurs relatively high costs of collection for the tax authority compared to other forms of taxation (IRB Annual Report, 2006). It also requires

relatively complex procedures so that the IRB can manage all individual taxpayers effectively (both for assessment and for collection of income taxes) (Kassiplillai, 2000). As such it can be said to be critical for the personal income tax system to be as efficient and effectively operated as possible to directly, and significantly, affect overall levels of efficiency in the complete tax system. The details can be found in Chapter 3.

Thus, judging from these factors, it is reasonable to study individual taxpayers' compliance as the main subject of this thesis because of the greater likelihood that tax knowledge differences between taxpayers will influence their level of compliance.

Therefore, the main objective of this study can be divided into the following sub-objectives:

1. to obtain a comprehensive overview of the tax knowledge of individual Malaysian taxpayers. The study will focus on measuring the individual tax knowledge and the focal point is on personal income taxes which are enacted in Section 4 of the Income Tax Act 1967, the regulations about the classification of income, deductions, relief and rebate;
2. to investigate and analyse taxpayers' compliance behaviour in the SAS in Malaysia. This objective provides the factors that impact tax compliance in SAS; and
3. to provide a comparison of Malaysian taxpayers in the SAS with selective other countries – for example the United Kingdom, the United States, Australia, Cambodia, Sri Lanka, and other OECD countries to draw more general

conclusions about what the Malaysia situation can reveal about SAS in both developed and developing countries.

In order to accomplish the above objectives, the specific research objectives of this study are therefore as follows in the context of the Malaysian SAS in operation at the time of this research:

1. to determine the characteristics and the level of tax knowledge of individual taxpayers;
2. to examine the association between tax knowledge and tax compliance behaviour;
3. to identify the determinants of tax compliance behaviour of individual taxpayers; and
4. to analyse and compare the Malaysia with other countries (i.e the United Kingdom, the United States, Australia, Cambodia, Sri Lanka, and other OECD countries in terms of individual's tax compliance under self assessment systems).

The study is therefore produces empirical evidence addressing the following questions under these research objectives:

i) Do Malaysian taxpayers have better tax knowledge under the SAS compared to the previous Formal System? In the Formal System, tax knowledge is not compulsory and necessary for the taxpayers in order to file their tax returns. All they need to do is simply complete the personal detail information in the tax return and submit the return with relevant documents to the IRB. Then the

IRB will calculate the tax liability for the taxpayers. In the Formal System, the responsibility of calculating the tax liability falls to the IRB but in the SAS, the responsibilities has been fully shifted from IRB to the taxpayers. Thus, to fulfill these responsibilities, the taxpayers must have sufficient tax knowledge in order for them to complete the tax return and calculate their tax liability accurately.

ii) What categories of taxpayers are the most knowledgeable and least knowledgeable?

iii) Does tax knowledge affect tax compliance?

iv) What are the factors affecting tax compliance attitudes?

v) How does the Malaysian system compare to other developed or developing countries globally for SAS compliance?

Further details and elaboration of the research objectives as well as hypotheses development resulting from these research questions are discussed in Chapter 5 – Research design and methodology.

The results of this study suggest empirical evidence and provide indicative improvement strategies for the tax authority by studying the inherent weaknesses of the current enforcement system and give some evidence on the holistic model of Malaysian individual taxpayers behaviour. Since this study will emphasize the importance of tax knowledge and the influence of this knowledge on the behaviour of taxpayers, the results

could provide new insights to the IRB (and other tax authorities) in designing the tax education programmes and the sampling design for audit purposes.

1.5 SIGNIFICANCE OF THE STUDY

The mission of SAS set by the Malaysian Government is to collect taxes in an efficient manner which mean at the lowest costs (time and money), to improve compliance and to institute effective enforcement through prevailing legal procedures (IRB Annual Report, 2006). In order to accomplish that mission, the three fold objectives are (IRB Annual Report, 2006):

1) to assess and collect the correct amount of revenue as provided under the law in the most effective manner and at a minimum cost;
2) to instill public confidence in the fairness and integrity of the tax system; and
3) to encourage voluntary compliance.

Judging from those objectives, in order to accomplish the first objective specifically and the whole objectives generally, it can be argued that tax knowledge is one of the most important variables that should be emphasized (refer 4.2). However, it is not likely that a simple relationship between tax knowledge and tax compliance will exist; knowledgeable taxpayers do not necessarily comply (Collins, Milliron and Toy, 1992). Since Malaysian tax laws and policies, especially for individuals, are always amended during the yearly

budget presentation by the Minister of Finance[2], tax knowledge either gained through formal or informal courses dates quickly. For example, if there are changes in income classifications, deductions, relief and tax rates, it means that past years' knowledge can be considered as obsolete. In fact, as it may be unclear to the taxpayer what information is out of date they may even be considered to be at a disadvantage to those with less tax knowledge.

Tax knowledge also affects the taxpayers' attitude towards the accuracy of the tax return (Eriksen and Fallan, 1996; Kirchler *et. al.*, 2008). In addition, research on measuring the level of tax knowledge in Malaysia is insufficient. Furthermore, no studies have been done to investigate the level of tax knowledge among individual Malaysian taxpayers post SAS introduction, factors that affect the characteristics of the taxpayers themselves that contribute to the level of tax knowledge. Since there is no formal tax education being given in secondary school or at the higher level except for accounting students[3], it can be presumed that the majority of taxpayers are relatively tax illiterate. This was adequate under the Formal System but is arguably no longer so under a SAS. The question is: why do we need to investigate their characteristics as we already know that they are relatively tax illiterate and therefore identifying those characteristics will have little relevance? Actually, the introduction of SAS for individuals in other countries such as Sri Lanka (1972), Pakistan (1979), Indonesia (1984), Australia (1986-87), Ireland (1988), New Zealand (1988) and the United Kingdom (1996-97) has illustrated that taxpayers quickly

[2] The national budget presentation used to be presented in Parliament by the Finance Minister on each last Friday in October. However, starting from 2003, the presentation is on each last Friday in September.
[3] As for diploma and bachelor levels, the accounting students are required to undertake at least two taxation papers.

become more aware of their tax obligations (Kasipillai, 2000) as the new systems are introduced. This study indicates that most taxpayers will try hard to improve their tax knowledge and keep up to date on changes of tax policy every year once a SAS is in position.

There are limited published research studies completed in Malaysia regarding income tax compliance. For example, one is concerned with tax ethics and taxpayers attitude (Sabri, 1993); one is concerned with the analysis of aspects of Malaysian income tax system that promote tax avoidance amongst taxpayers (Wallschutzky and Singh, 1995); one is concerned with personal income tax non-compliance (Mohani, 2001) and the other one is concerned with the competency of Malaysian salaried individuals in relation to tax compliance under SAS (Loo and Ho, 2005). However, only the last of these studies concentrated on SAS because at the time of the prior studies, SAS for personal taxpayers had not yet been implemented.

In addition to these studies, a study conducted by Loo (2006) attempted to investigate and compare the taxpayers' behaviour in Formal System and SAS. However, Loo's (2006) scope of study was limited to comparing taxpayers' attitudes toward taxation and used a quasi experiment and a case study approach.

This study therefore extends research in this area by focusing on post SAS introduction- after five years of implementation which is argued is a reasonable enough period of time to evaluate the initial achievements of SAS. Loo's study (based on a case study and a

quasi experiment) also did not attempt to investigate the level of tax knowledge among individual Malaysian taxpayers according to key demographic factors other literature has argued may have a significant influence on their tax behaviour such as religion, ethnic, social class, level of income and geographical location throughout Malaysia which prior studies from other countries have suggested could be contributory factors of tax compliance. Moreover, Loo's study also investigates the level of tax knowledge very shortly (one year only) after the implementation of SAS in year of assessment 2004.

Most importantly, this study also responds to some important calls made by Eriksen and Fallan, (1996); Andreoni, Erard and Feinstein, (1998); Chan, Troutman and O'Bryan (2000) and Richardson and Sawyer (2001) to contribute some evidence in tax compliance literatures:

> *"no study has been done to investigate which parts of tax knowledge have the greatest effect on attitude toward taxation. Experiments with different types of courses could provide new understanding."*
>
> (Eriksen and Fallan, 1996: 399).

> "*there is a need for more empirical and institutional research within jurisdictions outside the United States."*
>
> (Andreoni, Erard and Feinstein, 1998: 856)

" future research can explicitly measure and model structural variables such as tax rates and progressive versus propotional tax systems…"

(Chan, Troutman and O'Bryan, 2000: 99)

"no research has examined the link between these dimensions (tax rates, probability of audited) and compliance behaviour."

(Richardson and Sawyer, 2001: 182)

Also, unlike Mohani (2001), Kasipillai and Abdul Jabbar (2003), Loo and Ho (2005) and Loo (2006), this study is unique due to involving a complete, nationwide national survey which can provide valid, reliable and suggestive results that are not geographically limited to enable this study to analyse whole-of-country wide results.

The SAS for individuals was first implemented in year of assessment 2004 which means that the taxpayers had to complete and submit their first SAS tax return no later than 30th April 2005. Loo's (2006) time frame for the second stage of data collection (post test) was in April to July 2005 which is a few months after the taxpayers submitted their first self-completed tax returns. Within this time frame, it may be arguable that many taxpayers were not as fully aware of their full responsibilities in completing the tax returns compared to the previous system. For those taxpayers who were not fully aware of the changes in the system, they potentially treated the tax return as usual (as in Formal System). It is expected that within this study's time frame (five years after SAS was

implemented), the taxpayers' knowledge and awareness of tax laws will have significantly increased compared to Loo's research findings and could be reasonably considered to have reached a stable plateau of development of SAS specific knowledge making this a suitable point to extend Loo's work. Further, the questionnaire that was developed by Loo (2006) in examining the compliance behaviour among the subjects was directly referring to specific tax knowledge questions; she did not use hypothetical situation questions in order to examine the propensity of the subject to comply with tax laws. For example, (p. 132) compliance among the subjects was measured by Yes/No questions whereby (for taxable income) 'yes' indicated that the subject had 'complied', 'no' indicated 'non-compliance' and 'not sure' indicated 'unintentional non-compliance'. For questions on reporting exempted income, the measurement of compliance would be 'yes' to indicate 'over complied', 'no' to indicate 'complied' and 'not sure' to indicate 'unintentional non-compliance'. This study will use separate questions in order to examine the level of tax knowledge and the tax compliance behaviour (hypothetical scenarios) to attempt to provide a richer exploration of compliance behaviour.

One of the major contributions of this study is to assist the IRB in developing their tax education system and tax audit judgments in SAS. The findings of this study will give indicators to the tax administrator in terms of the level of tax knowledge and the characteristics of taxpayers' compliance behaviour in assisting the IRB to accomplish the three fold objectives of SAS, including impacts on voluntary compliance among the taxpayers, especially for individuals.

The result of this study will contribute to tax literature not only in Malaysia but also internationally by enabling both a comparison of the Malaysian system with other more established self assessment systems, but will also provide pointers for development of tax compliance in any developing countries' use of such tax administration systems.

1.6 RESEACH DESIGN AND METHODOLOGY

This study was conducted through a national mail survey which was carried out between June and August 2007. After piloting the survey on a group of 23 lecturers and professionals in various sectors and other lay people (non-tax specialist) to improve the validity, reliability, and to refine the questions, a total number of 5,500 mail surveys[4] were distributed to individual taxpayers selected at random from telephone directories throughout Malaysia. In ascertaining the quality of the results and responses from the respondents, this study follows the timing of disseminating the survey as suggested by Song and Yarbrough (1978) who timed dissemination of their survey questions in the United States in the months of July and August - a few months after taxpayers there had gone through the annual process of filing the federal and state incomes tax returns. This period was selected because it was argued that the data would be least likely to be biased by any exaggerated and critical feelings about the tax system that could likely be hightened by the filing period. In Malaysia, the equivalent ideal time in the annual tax

[4]Two batches of dissemination involved, 3,000 and 2,500 surveys disseminated in each batch. The time gap is approximately two weeks between both batches.

cycle to disseminate the survey is between May and September and hence our survey was conducted within this window[5].

The questionnaires were divided into four main sections, namely Section A- tax compliance determinants hypothetical questions; Section B – tax knowledge; Section C – tax compliance determinant direct questions and Section D – respondent background. Section A and C were developed based on Kogan and Wallach (1964), Troutman (1993) and Chan *et. al.* (2000) while Section B was developed based on Section 4 (a) to (f) of Income Tax Act 1967 as well as studies conducted by Harris (1989); Eriksen and Falllan (1996); Loo (2006); Loo and Ho (2005).

To facilitate the data analysis process, five stages were involved; 1) Stage 1 – examining the level of taxpayers' knowledge and the profile of respondents; 2) Stage 2 – to explore the association between various aspects of tax knowledge (independent variables) and tax compliance based on hypothetical and direct questions; 3) Stage 3 – to explore association between tax knowledge and tax compliance with the addition of control variables; 4) Stage 4 – to identify the factors that impact upon tax compliance behaviour by using both hypothetical and direct questions; and 5) Stage 5 – to identify the determinants of tax compliance with the addition of control variables. Data was analysed predominantly by t-test, one-way analysis of variance (ANOVA), multiple regressions

[5] The due date for individual taxpayers to submit tax returns is 30 April (but sometimes extended to 31 May) every year.

and stepwise multiple regressions. The details of research design and methodology are described in Chapter 5 – Research design and methodology.

1.7 SCOPE OF STUDY

As mentioned in 1.4 – Research objectives, the main aim of this study is to examine the level of taxpayers' knowledge and compare these with relevant tax compliance determinants. Knowledge about tax laws is limited in this study to Section 4 of Income Tax Act 1967 (ITA) (individual income tax) while tax compliance determinants are limited to nine variables[6] that prior literature indicates as likely to be the core determinants.

1.8 THESIS CONTENT

The remainder of this thesis contains of seven further chapters. The next chapter (Chapter 2) discusses self assessment in detail including the objectives, principles, problems of implementation, issues and comparisons between developed and developing countries including the United States, the United Kingdom, OECD and Australia. International comparisons between Malaysia and other countries' self assessments are also included in this chapter. Chapter 3 reports the historic background of Malaysia income tax system

[6] The details of the variable are discussed in Chapter 5 – Research design and methodology

and outline the various types of tax in Malaysia. In the last part of Chapter 3, a series of measures taken by the Inland Revenue Board (IRB) to enhance the operation of SAS during and since its implementation are described in detail. A review of the existent literature relating to the research objectives of this thesis, such as the importance and implications of tax knowledge and factors affecting tax compliance, are discussed in Chapter 4. Research design and methodology for this study is outlined in Chapter 5. The outline of data collection methods (including sampling frame, survey procedure, the respondents and measures to increase response rate), questionnaire design and variables measurement, the nature and development of the survey as well as technique of analysis and relation with research questions are comprehensively discussed in Chapter 5. This chapter also explains the research hypotheses and five stages utilised to address the research questions. Chapter 6 discusses the findings and results. The detail about survey responses and statistical tests (descriptive analysis, t-test, one-way Analysis of Variance (ANOVA) and stepwise multiple regressions) are included in this chapter. The results related to research questions and previous findings are also discussed in Chapter 6. Chapter 7 specifically discusses the results in relation to previous literature and provide some comments on a comparison of the results found in this study with that reported in other countries while the conclusions, limitations and future research directions of this thesis are discussed in the final chapter (Chapter 8). The policy implications, contributions to the body of knowledge as well as recommendations are also discussed in this chapter.

CHAPTER 2

SELF ASSESSMENT SYSTEMS– PRINCIPLES, ISSUES AND ADMINISTRATION

This chapter discusses the nature of self assessment systems (SAS) in detail including their objectives, principles, the comparisons between systems in operation and the issues of operation. The self assessment system has been widely implemented in developing and developed countries. While common principles exist for SAS, each country has experienced their own problems and issues while implementing self assessment which require different solutions. There are many factors that need to be taken into account in order to minimise and solve the issues that have arisen. The early part of this chapter discusses self assessment in general i.e. the declared missions and objectives intended for self assessment systems by various tax administrators as well as the principles that underpin its technical application. This is then followed by a discussion of the administrative issues in implementing self assessment systems successfully. Comparison among countries currently using SAS for tax purposes is discussed in the latter part of this chapter.

2.1 MISSION AND OBJECTIVES OF SELF ASSESSMENT SYSTEMS

Several tax administrations in both advanced and developing countries have adopted a self assessment system for tax filing purposes. These countries include, Sri Lanka (1972), Pakistan (1979), Indonesia (1984), Australia (1986-87), Ireland (1988), New Zealand (1988) and the United Kingdom (1996-97). As for the United Kingdom, the first self assessment tax forms were issued in April 1997 and by 1999, the self assessment system was fully implemented. These self assessment returns were originally sent to the self-employed, business partners, employees and pensioners (Lymer and Oats, 2008). Although many countries have turned to self assessment systems, some key countries like Singapore[7], Belgium, Luxembourg and France[8] remain with direct assessment systems. Table 2.1 indicates years of SAS introduction for companies and individuals in various countries.

[7] www.iras.gov.sg
[8] www.oecd.org and www.pwc.com

Table 2.1: SAS introduction in countries across the world

Countries	Company	Individual
Sri Lanka[9]	1972	1972
Pakistan[10]	1979	1979
Indonesia[11]	1982	1984
Australia[12]	1986/87	1992
Ireland[13]	1988	1988
New Zealand[14]	1988	1988
United Kingdom[15]	1999	1996/97
United States[16]	1913	1913
Japan[17]	1947	1947
Malaysia[18]	2001	2004

SAS in the US was established as early as 1913 for both companies and individuals (United States Department of Treasury, 2009). The introduction of SAS in the US was implemented by the advent of the 16th Amendment to the United States Constitution which modified the apportionment requirement in 1913, and since then income tax has become one of the primary means of funding the Federal Government. (Ando, Blume, and Irwin, 1985). The main objectives of SAS in the US at that time were to

[9] Inland Revenue of Sri Lanka, 2009
[10] Federal Board of Revenue Pakistan 2009
[11] 'Direktorat Jenderal Pajak' 2009 (The Directorate General of Tax of Indonesia)
[12] Australian Tax Office, 2009
[13] Irish Tax and Customs, 2009
[14] Inland Revenue of New Zealand, 2009
[15] Lymer and Oats (2008: 341).
[16] Unites States Department of Treasury, (2009).
[17] NTA (2009); Kimura (2006).
[18] IRB Annual Report (2004)

increase tax efficiency (collection) and instill awareness among taxpayers of funding federal expenses (Eissa, 1996). Since 1913, the operation of SAS in US is premised and primarily underpinned by 'voluntary compliance' (Unites States Department of Treasury, 2009).

Australia Tax Office (ATO) declared that their mission and objective for introducing a SAS for individuals was to give taxpayers greater equity and fairness, increased certainty, and simplicity (ATO, 2009). Major changes to the way tax was assessed for individuals were introduced in Australia through the *Taxation Laws (Self Assessment) Act 1992* (ATO, 2009). The introduction of SAS in Australia placed a greater responsibility on the taxpayer to assess their own tax debt or refund. Previously, taxpayers submitted an income tax return containing information from which the Tax Office prepared an assessment of the taxpayer's taxable income and tax payable. The assessment was made by making any necessary adjustments to the taxpayer's calculation of taxable income. A notice of assessment was issued indicating the tax refund or the amount payable and the due date for payment.

Self assessment for both companies and individual taxpayers (including inheritance tax) was first introduced in Japan in 1947 (Kimura, 2006). A developing conflict between taxpayers and the tax authority, perceptions of fairness and equity as well as inefficiency of the tax system led to the need for a tax reform (the introduction of SAS) in Japan in late 1940s (Shoven, 1989). The declared objectives of Japan's self assessment system are establishing a relationship of trust between taxpayers and the tax authority, efficient tax administration and also to act as a symbol of agreement

with postwar democratic thought (Kimura, 2006). In addition, the mission of SAS in Japan is to raise the rate of appropriate tax filings and payments through taxpayers' cooperation (Ishi, 2001). Japan's mission and objective was initially emphasised as 'cooperation and trust between taxpayers and the tax authority' (Ishi, 2001: 43). In the beginning of SAS, the tax authority faced a low level of tax literacy among taxpayers and poor management of the tax system generally (Ishi, 2001). However, in the last two decades, the tax authority has identified that issues such voluntary compliance and ex-post tax audit have become key tools necessary to accomplish the SAS objective (Kimura, 2006).

SAS in Canada was first introduced in 1985 as it was considered as' the most economical and efficient way to collect income tax' (Loo, 2006: 41). In the early stages of the introduction of SAS, taxpayers felt that the tax system was too complex (Loo, 2006: 41) and this discouraged taxpayers from filing tax returns voluntarily. They also perceived that fairness and equity was no longer applicable in the SAS (Canada Revenue Authority (CRA), 2009). However, after several years of operation, taxpayers are well aware of their responsibilities and these issues (fairness and lack of knowledge) have been gradually resolved (CRA, 2009).

In the UK, self assessment for companies commenced for the accounting period ending after July 1999, while for individuals it began in the 1996/97 tax year (Lymer and Oats, 2008: 20). The objective of SAS in the UK, like other countries both developed and developing, was to make the tax system simpler, easier and fairer to taxpayers, to make it possible for the Inland Revenue to accept the Statement of Accounts without further review, and to allow taxpayers to pay the right amount of

taxes at the right time without intervention by the Inland Revenue (IR) (Loo, 2006). In addition, SAS was expected to allow taxpayers to understand and to have more control over their own tax problems and, eventually, to open up ways for further reforms aimed at simplifying, unifying and improving the system of personal taxation, especially in relation to customer services, through greater co-operation between taxpayers and the IR (James, 1996, Brodie, 1999: Lymer and Oats, 2008).

As for Malaysia, the mission of SAS set by the Government is to collect taxes for the nation at minimum cost, to improve compliance, and to institute effective enforcement (Kasipillai, 2000; IRB Annual Report, 2001; Loo, 2006). In order to accomplish this mission, a three fold objective was established:

1) to assess and collect the correct amount of revenue as provided under the law in the most effective manner and at a minimum cost;
2) to instill public confidence in the fairness and integrity of the tax system; and
3) to encourage voluntary compliance.

Judging from the mission statement and operational objectives of the IRB, the implementation of a self assessment tax system in stages, commencing with companies in 2001, can be seen as a step towards improving the functioning of the Board. Increased voluntary compliance can only be achieved if taxpayers perceive the tax system to be equitable (Harris, 1989). Past studies have indicated that a SAS will improve efficiency and productivity of the tax administrative system (Sandford and Wallschutzky, 1994; James, 1996). A survey by Mustafa (1997) revealed that Malaysian taxpayers perceived SAS to be a significantly better tax system than the

Formal System. Table 2.2 summarises the missions and objectives of SAS in some countries across the world.

Table 2.2: The missions and objectives of SAS in some countries across the world.

Countries	SAS main mission and objectives
United States	To increase tax efficiency (collection) and instill awareness among taxpayers of funding federal expenses (Eissa, 1996).
Australia	To give taxpayers greater equity and fairness, increased certainty, and simplicity (McKerchar, 2007; Australian Tax Office (ATO), 2009).
Japan	To establish a relationship of trust between taxpayers and the tax authority, efficient tax administration and to serve as a symbol of agreement with postwar democratic thought (Kimura, 2006). In addition, the mission of SAS in Japan is to raise the rate of appropriate tax filings and payments through taxpayers' cooperation (Ishi, 2001).
United Kingdom	To make the tax system simpler, easier and fairer to taxpayers; to make it possible for the Inland Revenue (IR) to accept the Statement of Accounts without further review, and to allow taxpayers to pay the right amount of taxes at the right time without intervention by the IR (HMRC, 2009)
Canada	To encourage voluntary compliance, to simplify the tax systems and to increase taxpayers' knowledge about tax laws (CRA, 2009).
Malaysia	To collect taxes for the nation at minimum cost, to improve compliance, and to institute effective enforcement (Kasipillai, 2000; IRB Annual Report, 2001; Loo, 2006).

2.2 PRINCIPLES OF SELF ASSESSMENT SYSTEMS

Based on the declared missions and objectives of self assessment from various countries who have adopted the system to date, it seems that voluntary compliance, administrative efficiency and improving fairness and equity are the key motivating factors for introduction of SAS. Loo (2006) also claims that, in general, the reasons for implementing SAS are to simplify the tax collection system and increase voluntary compliance. Therefore, in order to convert this system into a meaningful tax mechanism compared to the previous system (direct assessment), the principles of operation must be created and implemented so that the SAS can be operated efficiently.

The mechanisms of operation of a SAS are significantly different from the direct assessment system, whereby the administrative burden of tax is at least partly shifted to taxpayers. From the positive perspective, this should encourage taxpayers to become more responsible, honest and to up to date with current tax regulations by forcing them to engage more directly with their tax computations process. In contrast, some taxpayers may have a negative reaction by using the nature of SAS to manipulate their tax returns[19] (decrease voluntary compliance) and/or employ tax agents (James, 1996; Hasseldine and Hansford, 2003) who in turn can affect their tax declaration levels either negatively (from a tax revenue perspective) e.g. by advising them of tax deductions (for example) they may otherwise not opt to take, or potentially positively by increasing the quality of returns that would otherwise be made in error.

[19] For example under report income and over claim deductions which make the tax liability less.

To reduce the possibility of taxpayers manipulating their tax returns, the tax authorities are likely to implement an enhanced investigation policy such as increasing tax audits and tax assessments, but these actions, if applied extensively, will in effects eventually turn the SAS back into the old direct assessment system. The more tax assessment required by the tax authorities, the less benefit results from a move to self-assessed for tax return. Therefore, the tax authorities have to determine the appropriate operation of SAS and exercise the principles of SAS by ensuring the taxpayers' and tax authority's responsibilities are balanced, thereby minimising any tax assessment they have to perform so that SAS can genuinely reduce tax compliance costs and increase administrative efficiency as well as developing public voluntary compliance.

Based on Table 2.2 above, it can be concluded that the main objective of SAS is to encourage voluntary compliance and efficient tax administration and to make the tax system simpler and fairer. Principles are defined as the rules or theories that something is based on (Barjoyai, 1987) and these principles become the main underpinning regulations to accomplish the objectives of SAS (Mohamad Ali *et. al.*, 2007). Based on the 'Canons of Taxation' introduced by Smith (1776), the central principles of taxation which relate to SAS are equity, certainty, convenience and efficiency (Samson, 2002: Lymer and Oats, 2008).

2.2.1 Equity

The introduction of SAS must be seen to be fair in its impact on all individuals and it must not affect taxpayers' horizontal and vertical equity. Equity in SAS is specifically

developed via suitable tax administration being used, particularly in respect of filing accurate and timely tax returns. SAS does not affect taxpayers' ability to pay directly but might affect ability and accuracy of filing. Thus, all levels of taxpayers should have the same capabilities, knowledge and opportunities to file tax returns accurately.

2.2.2 Certainty

Taxpayers need to be fully informed about when, where, and who should pay taxes and what amount of tax should be paid (the incidence of tax). Lymer and Oats (2008) again suggested that any financial transaction should be known in advance to achieve full certainty. In SAS, clear and certain rules should be disseminated to taxpayers sufficiently in order to minimise 'grey areas of the law' and misinterpretation. For example, in the UK the HMRC Code of Practice provides details about the information that taxpayers can expect in order to help to reduce uncertainties[20].

2.2.3 Convenience and efficiency

The tax administrators should not only focus on *their* convenience but must also consider taxpayers' convenience particularly in terms of tax regulations, filings, assessments, payments, administration and costs of administering the tax system (Sandford, 1993). The taxpayers' costs associated with the operation of SAS are normally called 'compliance costs' (Pope and Abdul Jabbar, 2008). The SAS should provide a simple tax system and tax returns. These would facilitate taxpayers in understanding tax systems and encourage them to easily file tax returns correctly.

[20] See http://www.hmrc.gov.uk/leaflets/c11.htm

This could be aided through continuous education programmes administered in various ways, for example through pamphlets and mass media.

Since tax can affect taxpayers' behaviour in many ways, the SAS also has to be very convenient from taxpayers' perspective (James, 1996; Lymer and Oats, 2008: 51) for example clear payment structures and appropriate forms of payment (e.g. including online BGC transfer).

Moreover, the SAS should be more efficient to administer than the direct assessment system in relation to tax costs incurred by the tax authority (creating tax returns, assessments, chasing the evaders, educating taxpayers etc.). The administrative costs should be as little as possible to achieve desirable economic efficiency.

Therefore, it is suggested that these principles are very important and become the main factors in achieving SAS's goals particularly. Equity, certainty and convenience should be taken into account in designing SAS. The following section describes the key issues in self assessment systems.

2.3 KEY ISSUES IN SELF ASSESSMENT SYSTEM

In this section, the key issues of operating a SAS are discussed. This section focuses on four key issues amongst those that may affect any particular SAS based on what literature in this area has previously focused upon, namely tax education and tax knowledge, the simplicity of the system and tax audits, fines and penalties. SAS has been widely practiced and the number of countries which adopt SAS is expected to

grow over time. Each country has its own laws and regulations in implementing an SAS. Some countries practice the fiscal year basis while other countries may practice current year basis. In line with information technology developments, many countries (for example, the UK and Malaysia), have moved toward electronic filing[21] which, from a tax administrators' perspective, is more user-friendly and, most importantly, could save costs (time and money - printing, paper, postage etc.) for all parties.

It is noted that each country inevitably has its own issues and controversies upon implementing SAS. The following are some issues that should be addressed and continuously monitored in order to accomplish SAS objectives. In addition to these issues, there are also various tax compliance issues in SAS. This issue will be addressed extensively in Chapter 4 and become the core focus of the remainder of this thesis.

2.3.1 Tax education and tax knowledge

Specific tax education programmes for taxpayers have been implemented in most SAS countries including the US (including via online education[22]), Canada and the UK. Tax education can constitute any informal or formal programme organised by the tax authority or independent agencies by which to facilitate taxpayers in completing tax returns correctly and also to cultivate awareness of their responsibilities in respect

[21] In Malaysia, E-filing was first introduced in 2003 and is an online system introduced by IRB that allows taxpayers to submit tax returns online, which is an alternative to the usual manual form submission. It is not compulsory current but eventually it will become so seems likely.

[22] IRS in collaboration with professional agencies has developed an online education platform known as 'Understanding Taxes' (see http://www.irs.gov/individuals/students/index.html). This website assists taxpayers on how to file their tax returns and resolve issues arising in relation to their tax matters.

of the tax system (Eriksen and Fallan, 1996; IRB Annual Report, 2006; McKerchar, 2007).

Various programmes in the US, including the Public Information Programme, were introduced to educate school children, small business owners and other self-employed individuals. Through workshops or in-depth tax courses, instructors provided training on filing tax returns, starting a business, recordkeeping, preparing business and personal tax returns, self-employment tax issues, and employment taxes (IRS, 2009). The Taxpayers Advocate Service is an independent organisation within the IRS and was introduced to assist taxpayers who are experiencing economic hardship, who are seeking help in resolving tax problems that have not been resolved through normal channels, or who believe that an IRS system or procedure is not working as it should (IRS, 2009).

In Australia, the ATO launched a programme called 'Teaching Tax with Tax Files' in 1998 to educate school children aged 9 – 12 (ATO, 2009). It is an innovative multimedia tax education kit which comprises of an interactive CD-ROM and a hard copy which provides schools with extensive, up-to-date information about tax. This programme is expected to educate the school children to be aware of where government money comes from and what it is used for, the responsibilities of a taxpayer, and should develop their understanding of the role of taxation in a society (e.g the connection between tax and services such as hospitals, roads and schools) (ATO, 2009).

In the UK, the HMRC introduced various education programmes including continuous events throughout the year during weekends and school holidays. These included drama, story telling, art and craft activities and drop in sessions, workshops, tours, the handling collection, live demonstrations and competitions (HMRC, 2009). The number of people participating in formal and informal learning organised by HMRC directly in 2005/6 was 18,021 (HMRC, 2009) - this represents a 29 per cent increase on target for the year. The coverage of the education programmes was not simply for tax filing per se, but additionally on tax morality, tobacco, alcohol, drugs and black market smuggling (HMRC, 2009).

Countries such as the US, Canada, Japan, New Zealand, Australia, the UK and Malaysia have all been implementing a continuous tax education for taxpayers and children (as future taxpayers). Apart from these programmes to educate taxpayers directly and instill public awareness regarding tax matters, various countries such as the USA, the UK and Australia also have developed interactive websites, disseminated leaflets together with tax returns, opened call centres, created advertisements or supplied reminders via television and radio (e.g. to remind taxpayers of deadline dates for filings).

In addition to tax education, knowledge about tax laws also plays a major role in determining taxpayers' compliance behaviour (Eriksen and Fallan, 1996). Therefore a step ahead, for example continuous education programmes and effective monitoring mechanisms must be taken into account by tax authorities to ascertain that taxpayers

have a good and reasonable knowledge and understanding of tax matters. However, the awareness and attitude of the taxpayer himself is more important since the effectiveness of tax education depends on the readiness, acceptance and honesty of taxpayers. Further details regarding tax education programmes in various countries are discussed in section 2.4 and Chapter 3.

2.3.2 Simplicity of the system

The second key implementation issue discussed in this study is the simplicity of the system. Silvani and Baer (1997) outlined the importance of the fact that a tax authority should have a simple tax return system from a taxpayer's point of view. A tax authority might assume its tax return is simple and easy to complete but it may not be so from the taxpayers' point of view. Therefore, before the final and actual version is delivered to taxpayers, it would be normal to put the forms through a series of 'pilot' tests to validate that the tax return is simple and easy to complete. (For example in the UK, refer to 2.4.1 (b)). Evidence suggests that uncomplicated tax returns play a major role in improving tax compliance (Silvani and Baer, 1997). Although tax knowledge and the simplicity of tax returns have a different impact on compliance (see Kirchler, 2008), it is noted that a taxpayer with low tax knowledge may be able to file the tax returns accurately provided the tax returns are simple, clearly explained and consistent[23].

[23] The current year of tax returns should be the same as the previous one or at least largely the same. This can encourage taxpayers to file their tax returns correctly.

Over an extended period, research focusing on complexity of a tax system in SAS has reported that there is an association between complexity and compliance, but the extent of the association remains in part uncertain. Some research has found positive association between complexity and non-compliance, whether intentional or unintentional (e.g. see McKerchar, 2002; Ritsema, Thomas and Ferrier, 2003; Blanthorne and Kaplan, 2008) while others have found that the impact of complexity on compliance varied with the characteristics of individual taxpayers; such as income level, education level, perceptions of fairness and equity and the opportunity to evade (e.g. see Slemrod, 1989). In contrast, Clotfelter (1983) evidenced that when the level of complexity increased (for non-business taxpayers in the case of this study) it significantly increased non-compliance among taxpayers. The reason behind this finding was because business taxpayers were more likely to seek advice from tax practitioners as complexity rose; hence the issue of complexity appeared to be significant to them.

It has also been argued that simplifying tax laws in SAS might encourage compliance among taxpayers as they might more easily interpret and understand the law and the tax structure, and so possibly be better able to declare their income and compute their own tax liabilities correctly (Baldry, 1999). However, Forest and Sheffrin (2002) assert that simplifying the tax system (and therefore generating simpler tax returns) implicitly might not be an effective deterrent to tax evasion because taxpayers may not necessarily consider a complex tax system to be unfair. Forest and Sheffrin were unable to identify any relationship between complexity and perception of unfairness and concluded that while simplifying the tax law would not automatically improve

compliance, many taxpayers perceive that tax systems are always complex and become a burden to them (Forest and Sheffrin, 2002).

Although Forest and Sheffrin suggested that the impact of the simplicity of the tax systems in SAS were insignificant, however, the main feature of SAS is self-completed tax returns which require a high degree or at least a reasonable level of simplicity because taxpayers come from various levels of backgrounds, education, income and most importantly levels of tax knowledge. In helping taxpayers to complete their tax returns accurately, the tax authority should supply simple but sufficient tax systems.

2.3.3 Tax audits and audit probability

The third key issue of SAS operation is setting and operating a suitable tax audit system. A tax audit is an investigation made by the tax authority in order to verify the accuracy of tax returns and attempt to detect non-compliance behaviour and activities; audit probability is defined as the number of tax returns assessed (audited) divided by the number of tax returns received (Shanmugam, 2003; IRB Annual Report, 2006; Kirchler, 2007). In SAS, the question 'to what extent should tax audits be implemented?' remains unsolved, as an absolute SAS supposedly requires minimum tax audits (Loo, 2006). Furthermore, there is a conflict between direct assessment and SAS in terms of tax audits (Mohani, 2001) whereby in direct assessment, all tax

returns are subject to thorough scrutiny while SAS does not require any direct assessment as the responsibility is shifted to taxpayers for all assessment.

The importance of tax audits on tax administration and compliance has long been discussed and evidenced by previous research findings which suggested that tax audits are important in both SAS and direct assessment systems. For instance, Kirchler, Hoelzl and Wahl (2008) found that the probability of tax audits positively affecting compliance is weak. An experimental study by Slemrod, Blumenthal and Christian (2001) revealed that threatening taxpayers with ”close examination” increased tax compliance only for low and middle-income earners. In addition, tax audits and audit probabilities found low negative effects of audit rates on evasion especially where precise percentage information on audit probabilities was given instead of simply indicating high, middle and low probabilities (Spicer and Thomas, 1992). Conversely, Friedland *et. al.* (1978) reports that imprecise information increases compliance while non-experimental studies (surveys) found both significant and non-significant low positive relationships between tax audits and audit probabilities and tax compliance (Song and Yarbrough, 1978; Spicer and Lundsted, 1976). Again, Andreoni *et. al.* (1998) argued that the probability of being audited has little effect on compliance. They also concluded that psychology variables mediate the subjectively perceived probabilities. Nevertheless, prior audit experiences also have low impact on compliance. One explanation is that prior audits may not turn out as badly as is feared by taxpayers (Andreoni *et.al*., 1998).

Judging from previous studies (i.e. Kirchler, Hoelzl and Wahl, 2008; Andreoni *et.al*., 1998; Song and Yarbrough, 1978; Spicer and Lundsted, 1976), although tax audits

had a low significant impact on compliance, however it is still vital in determining tax compliance behaviour and therefore, further research in this area in a SAS setting (particularly in tax audit variables) is needed.

2.3.4 Fines and penalties

The fourth key issue to organizing a SAS discussed in this chapter is the use of fines and penalties to aid tax collection mechanisms. Taxes are compulsory but fines are avoidable. As with tax audits, penalties and fines also appear to play a significant role in the success of SAS. In a SAS, taxpayers are also faced with a more difficult tax compliance task when compared to a direct assessment system. Since SAS is heavily reliant on the honesty of taxpayers and is also not subject to complete scrutiny or assessment by the tax authority, the execution of penalties is important compared to in a direct assessment systems. A possible explanation for this is that very few taxpayers will be likely to be involved with tax audits, and so penalties and fines take on a critical behaviour-influencing role in helping to improve tax compliance.

Despite anecdotal evidence that penalties and fines are important in SAS, empirical studies on the extent of their impact has not yet found a clear correlation (e.g. see Kirchler, 2007; Kirchler *et. al.*, 2008.) Some studies have showed that penalties have a larger impact on compliance than the probability of being audited (i.e. Fisher *et. al.*, 1992). Tax compliance also significantly increased with higher penalties but not with audit probability in the study by Friedland, Maital and Ruternberg (1978). In contrast,

other studies have shown that fines and penalties are not related at all to compliance; even though they were able to confirm that the probability of being audited is related to compliance (e.g. Webley, Robben, Elffers and Hessing, 1991).

Various arguments arise regarding the impact of fines and penalties on tax compliance in SAS to explain this lack of a clear impact relationship. For example, fines that are too low could be perceived as an indicator that the authorities are weak and unable to control non-compliant taxpayers, thereby undermining trust among honest taxpayers and leading to a lack of encouragement to comply with tax law in SAS. Furthermore, fines that are inappropriate because a taxpayer has made a mistake resulting from vague or overly complex tax laws would weaken the perception of retributive justice and encourage tax evaders to try harder to regain their losses incurred by those fines.

In conclusion, these four the key issues namely tax education and tax knowledge, the simplicity of the tax system, use of tax audits and penalties and fines have received more attention from previous researchers in SAS than any other issues that may effect efficient operations. Although there are some other issues in administering a SAS, these other issues were not extensively researched by previous authors and are therefore not discussed in this section. In addition to these issues, there are also tax compliance issues in SAS which are addressed in Chapter 4. The next section discusses the implementation of SAS in various tax regimes.

2.4 HOW SELF ASSESSMENT IS OPERATED IN DIFFERENT COUNTRIES

This section provides an overview of the SAS for individuals in various countries. In order to distinguish operations among them, this section is divided into two parts: developed and less developed countries. As for developed countries, an analysis is made for the US, the UK, Japan and a collective of OECD countries while Sri Lanka and Cambodia represent the less developed countries. All countries were chosen because they have some similarities with the Malaysian tax system, which is to be used as the focal context for this research in terms of filings, assessments, operations, tax audit and investigations procedures and scope of charge of personal income tax. The Malaysian tax system is thoroughly discussed in Chapter 3 as a key justification of analysis in this thesis.

2.4.1 Developed countries

This section discusses how SAS has been implemented in developed countries such as the USA, UK, Japan and the OECD countries as one group.

a) United States

The roots of the Inland Revenue Service (IRS) started during Civil War in 1862 when President Lincoln and Congress created the position of Commissioner of Internal Revenue and enacted an income tax to help bear war expenses. In 1913, Wyoming approved the 16th Amendment (this is part of the United States Constitution which allows the Congress to levy an income tax without apportioning it among the states), providing the three-quarter majority of states necessary to amend the Constitution.

Also, in 1913, the substantial 'growth' of the number of taxpayers, the limited time frame to assess all tax returns, the shortage of human resource and the need to increase the efficiency of tax collection, meant that the IRS required all taxpayers to assess their own tax liabilities and to send in their returns together with their payments of tax.

In 1918, during World War I, the top rate of the income tax rose to 77 percent to help finance the war effort. It dropped sharply in the post-war years, down to 24 percent in 1929, and rose again during the Depression. During World War II, Congress introduced payroll withholding and quarterly tax payments. The IRS reorganised itself to closely resemble the private sector model of organising around customers with similar needs (IRS, 2008). Since 1913, taxes have been imposed on a full self assessment basis. However, a series of tax reforms have taken place since the introduction of SAS. These reforms have included various improvements to the tax administration in general in order to develop public awareness of the system, increase voluntary compliance and improve the convenience of payment and efficiency of collection. For example, in July 1940, a withholding tax system (i.e. deduction of tax at source) was introduced by the Income War Tax Act (1940) (Lent, 1942). In the 1940s, wage-earners were assessed half-yearly on the basis of their earnings as reported by their employers for each half-year, ending in April and October respectively. The annual returns then had to be filed in September or October by employees (Lent, 1942). The introduction of withholding tax created a protest from wage earners (who claimed that the system was unfair), with problems in record-

keeping as well as the perceived level of tax burden. The adoption of withholding tax was found to be particular unfavourable among certain taxpayers (Lent, 1942).

Later, in 1953, the Bureau of Internal Revenue was replaced by the Inland Revenue Service or IRS (IRS, 2008). Although tax administration developed following this change, tax compliance issues were not fully resolved. In order to further dissuade taxpayers from avoiding taxes, the Tax Reform Act (1969) was introduced (IRS, 2008). After World War II, the income tax base was converted from a narrowly-based tax which affected some 8 million taxpayers to a broadly-based tax which affected about 70 million taxpayers (Cohen, 1966). In the 1970s, SAS was viewed with national pride and seen as a great advantage to the American tax system (Cohen, 1966; Smith W, 1970). Even without direct enforcement activities, 97 per cent of total revenue collected was derived from self-assessed taxation while the remaining three per cent was collected by direct enforcement (Caplin, 1962).

The US tax administration's policy was focused on three main goals, namely; seeking more reasonable and responsive interpretations of the tax laws; providing a better service to American taxpayers and continuing a vigorous enforcement programme to discourage and deter tax abuse (IRS, 2008). On top of these objectives, the IRS also attempted to speed up and improve the resolution of tax cases; to streamline the management of refund cases; to perfect audit procedures and to strengthen tax procedures. In May 2000 a new taxpayer compliance measurement project entitled the 'National Research Programme' (NRP) was launched to replace the Taxpayer

Compliance Measurement Programme (TCMP) (Mills, 2004). The main difference between the audit approach under TCMP and NRP was that NRP auditors appeared 'more friendly' by requesting 'reasonable substantiation' for income and deductions claimed by taxpayers. The objectives of NRP were wide-ranging and included the provision of compliance data, determination of the compliance rate on voluntary reporting and the improvement of IRS operations by providing specific information about non-compliance.

In order to aid compliance in the SAS, various education programmes such as the 'Public Information Programme', 'Free Tax Return Preparation For You by Volunteers', 'Volunteer Income Tax Assistance Program (VITA)', 'Tax Counseling for the Elderly (TCE)', and 'Military Personnel and Their Families Get Free Tax Help' are being implemented in the US (IRS, 2008). The tax returns and instructions have been simplified and problems encountered by taxpayers, especially in relation to the type and colour of return, were identified through national surveys. As a result, different taxpayers are issued with different forms and instructions to accommodate their needs and ease the process of filing tax returns (IRS, 2008).

Previously, instead of preventing tax compliance, the IRS had taken steps to ensure that its employees meet their tax filing and payment obligations in order to accommodate the statement by the Commissioner of the IRS which emphasised that internal enforcement begins at home (IRS, 2008). Although SAS has been implemented in the US for a very long time (nearly a century since 1913), compliance

issues still remain important and continue to be a major focus to be addressed by the IRS (IRS, 2009).

The USA also has a significant amount of revenue that remains unreported and unpaid. In 2005, the IRS estimated this gross tax gap to be approximately $345 billion. After subtracting revenue obtained through enforcement actions and other late payments, the IRS estimated the net tax gap to be approximately $290 billion. These estimates, which remain the most recent estimates available (IRS, 2009), were conducted using data collected in the tax year of 2001 and before (IRS, 2009). For the purpose of estimating the tax gap in the USA, the IRS identified three forms on non-compliance activities, namely underreporting (not reporting one's full tax liability on a timely-filed return); underpayment (not timely paying the full amount of tax reported on a timely-filed return); and non-filing (not filing required returns on time and not paying the full amount of tax that should have been shown on the required return) (IRS, 2009: 3).

Table 2.3 to 2.6 summarise some significant data in relation to the US tax system, including filings, compliance rates and tax gaps, underreporting estimations for individuals and tax collection by types.

Table 2.3: Individual filing in US 2008

	2007	2008	Change
Total Receipts	140,188,000	156,297,000	11.50%
Total Processed	140,023,000	156,053,000	11.40%
E-filing Receipts:			
Tax Professionals	57,420,000	62,959,000	9.60%
Self-prepared	22,559,000	26,927,000	19.40%
Total	79,979,000	89,886,000	12.40%
Web Usage:			
Visits to IRS.gov	216,952,000	351,191,000	61.90%
Total Refunds:			
Number	105,879,000	107,569,000	1.60%
Amount	$246.02 billion	$261.32 billion	6.20%
Average refund	$2,324	$2,429	4.60%
Direct Deposit Refunds:			
Number	61,581,000	66,460,000	7.90%
Amount	$166.24	$181.28	9.10%
Average refund	$2,699	$2,728	1.00%
E-filing rate	57%	58%	

Source: IRS 2009 (http://www.irs.gov/taxstats/article/0,,id=184855,00.html)

Table 2.4: United States' compliance rates and tax gap 2008

Activities	USD$ (billion)
Non-filing	27
Underreporting:	
Individual:	
Underreport non-business income	56
Underreport business income	109
Overstated deductions, adjustments, exemptions and credits	32
Underpayment	33
Noncompliance rate (NCR) 16.3%	
Tax compliance index is 4.47[24]	

Source: IRS 2009 (http://www.irs.gov/pub/irs-news/tax_gap_figures.pdf)

Table 2.5: United States- Individual income tax gap underreporting estimates 2008

Type of income or offset	Tax gap $b	NMP #
Total underreported gap	197	18%
Underreported income	166	11%
Wages, salaries, tips	10	1%
Interest income	2	4%
Dividend income	1	4%
State income tax refunds	1	12%
Alimony income	*	7%
Pensions and annuities	4	4%
Unemployment compensation	*	11%
Social security benefits	1	6%
Capital gains	11	12%
Other income	26	64%

* Less than $0.5 billion
# NMP – Net Misreporting Percentage

Source: IRS 2009 (http://www.irs.gov/pub/irs-news/tax_gap_figures.pdf)

[24] Based on Riahi-Belkaoui (2004: 138). Tax compliance is measured based on a scale from 0 to 6. A high score indicates higher compliance.

Table 2.6: United States: Internal revenue collections by type of tax, fiscal years 2007 and 2008

Type of tax	Gross collection $'000	
	2007	2008
United States, total	**2,691,537,557**	**2,745,035,410**
Corporation income tax	**395,535,825**	**354,315,825**
Regular	394,666,355	353,548,654
Tax-exempt organisation business income tax	869,471	767,171
Individual income tax	**1,366,241,437**	**1,425,990,183**
Income tax withheld	928,632,327	970,654,194
Other	437,609,110	455,335,989
Employment taxes	**849,732,729**	**883,197,626**
Estate and gift taxes	**26,977,953**	**29,823,935**
Estate	24,557,815	26,543,433
Gift	2,420,138	3,280,502
Excise taxes	**53,049,612**	**51,707,840**

Source: IRS 2009 (http://www.irs.gov/taxstats/article/0,,id=171960,00.html)

b) United Kingdom

The income tax in the United Kingdom began in the 1790s at a time when the British were faced with continuous warfare with France. Resource concerns led to taxation innovations in both countries. William Pitt (The Younger), the Prime Minister at that time is credited the father of income tax in the UK. He introduced 'Triple Assessment' in 1798 and then expanded to a general income tax in 1799 with more focus on property-based income tax such as tax on rentals and house value (Lymer and Oats, 2008).

In 1944 a new income tax system was introduced known as *pay-as-you-earn* (PAYE) where an employee received his or her salary and wages after tax deduction. Taxation at source had long been a core principle of the UK's tax system, with its use in income tax collection commencing in 1803 in addition of Pitt's income tax system. This system has contributed to the government in terms of improvement in cash flow, reduction in bad debts, ease of taxpayers' payments of weekly or monthly taxes, thereby preventing large annual payments at the end of the tax year (Lymer and Oats, 2008). In 1965, two new taxes were established: corporation tax and a real property gain tax called capital gains tax. Capital gains tax aimed not to increase revenue significantly but to decrease non compliance and increase equity among taxpayers. In 1984, inheritance tax was introduced to replace capital transfer tax which was launched in 1975.

The self assessment system in the UK was first introduced in 1996/97 (Lymer and Oats, 2008: 341). The introduction of the SAS in the UK was driven by three main reasons (Barr, James and Rest, 1977: 1-3). Firstly, the costs of administration had risen steadily over the years since the 1970s. The Board of Inland Revenue reported that the cost of collecting taxes during 1974-75 was about £200 million- most of this being used for staff salaries (p. 1). In 1976, the Inland Revenue had employed nearly 81,600 staff, an increment of 7,000 staff compared to in 1975 (and the number had increased to 90,000 by 1978). Moreover, 'the cost of administering individual taxes averaged 1.75% of the net revenue collected' (Barr *et. al.*, 1977: 2). This percentage was high compared with that in the USA, particularly as the number of staff was thought to be comparable with those in the UK. This was partly because the USA's

tax system is simple (in terms of tax allowance) with emphasis on extensive use of computers. In contrast, 'Britain placed more emphasis on equity between taxpayers, using a complex system of individual reliefs and allowances, and made greater efforts to collect all tax payable' (Barr *et. al.,* 1977: 2).

Secondly, the debate of tax credits in early 1970's has also led to the introduction of SAS. The existence of a reduced-rate band for low income earners would result in many year end adjustments as the amount of tax withheld each week would not add up exactly to the total tax due for the whole year. Consequently, tax administration could not cope easily with many year end adjustments and therefore, the tax credit scheme could not easily incorporate a reduced rate band (Barr *et. al.,* 1977: 2).

The third reason was, in relation to the costs of administration, the discussion of local government finance culminating in the Report of the (Layfield) Committee of enquiry required some 12,000 additional civil servants in the 1970s to administer the tax collections. This significant increment would reflect the additional cost of administrations due to the increase in workload during that time (Barr, *et. al.,* 1977: 2).

Taking into account the consequences of the cost of administrations, the flexibility of the structure of marginal tax rates and the feasibility of the local income taxes, the Committee suggested that there was a need to propose a new system, the self

assessment system, to overcome these problems. Thus, the introduction of SAS in 1996/97 for individuals in the UK was made in the hope of increasing the efficiency of tax administration and collections.

Currently, apart from individual income taxes, various taxes are applied in the UK, namely inheritance tax, national insurance contributions, stamp duties, and other smaller duties overseeing the national minimum wage rules and student loan repayments (HMRC, 2009). Previously, these taxes were managed by the Inland Revenue (IR) while Her Majesty's Customs and Excise (HMCE) administer taxes like customs duties and excise charges (i.e. on petrol), landfill tax, the climate change levy, insurance and air passenger duties, VAT and any other taxes not managed by the IR (HMRC, 2008) However, since 2005, the HMCE and IR have been combined and renamed Her Majesty's Revenue and Customs (HMRC) with almost all taxes in the UK being managed by this body.

The objective of SAS in the UK, as in all developed and developing countries, was to make the tax system simpler, easier and fairer for taxpayers, to make it possible for the Inland Revenue to accept the Statement of Accounts without further review, and to allow taxpayers to pay the right amount of taxes at the right time without intervention by the IR. On top of this, SAS permits taxpayers to understand and to have more control over their own tax problems and, eventually, should open up ways for further reforms to simplify, unify and improve the system of personal taxation, especially in relation to customer services through greater co-operation between

taxpayers and the IR (James, 1996, Brodie, 1999). It was reported that the UK administrative cost was much higher than Canada and Australia (Loo, 2006) and the cost of collection for the self-employed was 3.7 times higher when compared with the cost for the employed (Thompson and Teviotdale, 1999). Table 2.7 represents annual receipts in the UK, Table 2.8 represents number of individual taxpayers and Table 2.9 represents income tax receipts from year 2002 to 2008.

Table 2.7: United Kingdom- HMRC annual receipts £million (1)

Year	Total HMRC	Income tax (2, 3)	National Insurance Contributions (3, 4)	Capital gains tax (5)	VAT	Corporation tax (6)
2003-04	343,864	113,968	72,457	2,225	69,275	28,077
2004-05	371,075	122,920	78,098	2,283	73,058	33,573
2005-06	397,912	130,481	85,522	3042	72,856	41,829
2006-07	423,659	143,327	87,273	3,813	77,360	44,308
2007-08	451,053	147,324	100,410	5,268	80,599	46383
2008-09 (7)	447,075	151,190	97,664	4,910	82,557	44,836

(1) The figures in the table are equivalent to cash receipts as measured in producing HMRC's accounts subject to relevant adjustments. (The accounts moved to an accruals basis for the 2004-05 Trust Statements.) For some taxes, there are differences from the figures published by the Office for National Statistics, which reflects payments into the Consolidated Fund.

(2) Figures for income tax treat payment of the personal tax credits as negative tax to the extent that the credits are less than or equal to the tax liability of the family. Payments exceeding this liability are treated as public expenditure. This approach is consistent with the presentation adopted by the Office for National Statistics in National Accounts, HM Treasury and OECD. Personal tax credits are therefore being treated in line with international accounting conventions so as to distinguish between negative tax and public expenditure.

(3) The split of receipts between income tax and national insurance contributions, and therefore each of these series individually, should be interpreted with caution. Most PAYE payments by employers now combine the two. A provisional split has to be estimated with corrective adjustments made later when employers' end of year returns have been received and processed. These corrective adjustments are recorded in the period when they are made and not cast back to the date of the original payment.

(4) Figures for national insurance contributions are net of personal pension rebates paid directly from the National Insurance Fund to personal pension providers. They also include estimates

of the amounts deducted by employers in respect of payments to employees of statutory sick, maternity, paternity and adoption pay.

(5) Figures exclude tax on capital gains made by companies which is included under corporation tax.

(6) The figures are net of the negative tax element of the tax credits. Directly payable tax credits are classified wholly as public expenditure. Any tax relief due to the enhanced expenditure (i.e. amounts in excess of 100 per cent of the expenditure) which offsets liability to corporation tax is classified as negative tax. This approach is consistent with the presentation adopted by OECD.

Source: HMRC 2009 (http://www.hmrc.gov.uk/stats/tax_receipts/table1-2.xls)

Table 2.8: United Kingdom- Numbers of individual taxpayers (thousands)

Year	All taxpayers	Lower (1) or starting (2) rate	"Savers" (3) rate	Basic (4) rate	Higher (5) rate	Males (6)	Females (6)	Under 65's	65's and over	State Pension Age (7)
2003-04	28,500	3,220	730	21,600	2,960	16,100	12,400	24,500	3,950	4,700
2004-05	30,300	3,570	833	22,500	3,330	17,000	13,300	26,000	4,250	5,110
2005-06	31,100	3,190	1,170	23,100	3,590	17,600	13,500	26,900	4,160	5,100
2006-07	31,500	3,210	1,270	23,200	3,770	17,800	13,700	27,200	4,320	5,270
2007-08	31,900	3,190	1,460	23,400	3,870	18,000	13,900	27,400	4,500	5,470
2008-09	30,600	348	1,410	25,300	3,640	17,500	13,100	26,600	4,070	5,000

(1) From 1993-94 until 1998-99 a number of taxpayers with taxable income in excess of the lower rate limit only paid tax at the lower rate. This was because it was only their dividend income and (from 1996-97) their savings income which took their taxable
(2) In 1999-2000 the starting rate replaced the lower rate. Taxpayers with a marginal rate at the 10% starting rate from an extra £1 of earnings from 1999-2000 until 2008-09 when the starting rate on earnings was removed.
(3) Taxpayers with a marginal rate at the 20% lower rate for savings income or the 10% ordinary dividend rate from an extra £1 of earnings. Before 1999-2000 these people would have been classified as lower rate taxpayers.
(4) Taxpayers with a marginal rate at the basic rate from an extra £1 of earnings.
(5) Taxpayers with taxable income above the higher rate threshold.
(6) We have withdrawn information on the number of taxpayers by marital status in Table 2.1. The marital status indicator in the Survey of Personal Incomes has been unreliable for the vast majority of individuals under the age of 65 since 2000-01.
(7) State Pension Age defined as males aged 65 years and over and females aged 60 years and over.

Source: HMRC 2009 (http://www.hmrc.gov.uk/stats/tax_receipts/table2-1.xls)

Table 2.9 – United Kingdom- Income tax receipts: analysis by type £ million

	Year					
	2002-03	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**
Receipts other than self assessment	99,695	107,381	114,992	121,852	133,129	135,269
of which:						
PAYE	94,243	101,389	108,699	113,894	124,799	126,760
Assessed income tax	231	183	194	174	173	208
Tax deduction scheme for interest (TDSI)	2,122	2,092	2,266	2,969	3,124	4,134
Other tax deducted at source	1,160	1,081	1,188	1,400	1,744	1,564
Other receipts	1,938	2,637	2,645	3,416	3,290	2,603
Self Assessment, net of repayments [1]	16,059	15,772	17,141	18,077	20,306	22,443
Repayments other than self assessment [2]	-6,247	-9,185	-9,213	-9,450	-10,108	-10,388
Total net receipts	109,507	113,968	122,920	130,480	143,327	147,323

Notes:

1. Self assessment has been used to collect tax direct from individuals, trusts and estates from the tax year 1996-97 (1997-98 for tax on their income from most partnerships). For each tax year, a first Payment of Account (POA) is due on 31 January of that year, based on the previous year's liability. A second POA is due on 31 July, and the balance of liabilities on the next 31 January. (However many taxpayers do not have to make any POAs). Thus, receipts in 1996-97 comprised only first POAs (which, for 1996-97 only, were restricted to the previous year's liabilities on incomes from sole trades, property and untaxed investments). Net receipts in a year also include late payments in respect of earlier years and are also net of repayments made, mostly to those for whom deductions at source exceeded their total liability.

2. Money paid via the self assessment covers income tax, capital gains tax and Class 4 national insurance contributions. A statistical algorithm is used to attribute net SA receipts between these three components. However this algorithm does not yield reliable figures for receipts and repayments for each component, so only a net series for income tax is shown here.

Source: HMRC 2009 (http://www.hmrc.gov.uk/stats/tax_receipts/table2-8.xls)

Compliance issues remain important in the UK tax system. Tax administrators in the UK face some difficulties from the perspective of tax practitioners: a study carried out by Hansford (1999) revealed a number of problems, particularly in relation to procedures arising from the implementation of SAS. The following issues were highlighted:

i) Many problems were encountered in completing the Statement of Accounts, in response to which the IR acknowledged the need to make improvements (Smith D., 1999). Although the IR proposed that the Statement should be similar to that of the 'credit card statement', in practice, this was still incomprehensible (Brodie, 1999);

ii) The SAS restricted the practitioners' access to well-trained IR staff (Hansford, 1999; William, 1999);

iii) Inconsistent practices at the IR due to the restructuring of Tax Service Offices and Tax District Offices with the reduction in staff and their inconsistent training;

iv) Software-related problems during the introduction of electronic lodgment of tax returns, and

v) In relation to electronic filing, tax practitioners faced difficulties when lodging tax returns themselves because they needed a digital signature from their clients. This led to an increase in costs incurred by practitioners.

Not withstanding tax compliance concerns, other related issues also emerged, such as the simplicity of tax returns. Since SAS is fully reliant on taxpayers, the tax returns

were quite difficult to complete. Many taxpayers perceived that the tax system itself was too complex, difficult to understand and the terminology used was unfamiliar to taxpayers (Hansford, 1999; Brodie, 1999; Hinks, 2000). For example, taxpayers might get confused between 'tax allowance' and 'tax credit' as well as 'relief' and 'deductions'. To help overcome this confusion the tax authorities have engaged in a variety of activities to help educate taxpayers in the details they need to know in order to be tax compliant. This has widened the development of 'Tax Aid'. This organisation is a registered charity established in 1992 to provide free tax advice and assistance to individuals in financial need. Brodie (1999) found that some improvements have been identified, for example, taxpayers who sought considerable help in 1997 and 1998 were able to complete their own tax returns without much help in 1999. In contrast, Brodie (1999) also reports that the returns were not good enough to accommodate the different taxpayers' needs, especially those that frequently shifted from the 'employed individual' status to 'self-employed' status.

Since 2000, the number of taxpayers using e-filing has increased and the online service provided by the HMRC has also improved (Lymer and Oats, 2008). Also, the HMRC have initiated measures to increase taxpayers' confidence and ease of administration: for example, 'Working Together' is a partnership where the main agent representative bodies focus on improving all areas of HMRC operations for the benefit of agents, advisers and their clients. It provides a forum to raise operational issues or problems that have been identified by HM Revenue and Customs (HMRC) or the representative bodies, either at a national level or through local Working Together groups (HMRC, 2009).

Despite a variety of measures taken to increase compliance and raise awareness of tax obligations among taxpayers in the SAS, the HMRC also suffered significant direct tax losses in 2007. A report called 'Developing Methodologies for Measuring Direct Tax Losses' published online in 2007[25] showed that the main types of losses were due to non-payment from individuals and large business entities, the use of avoidance schemes to reduce tax liabilities, the informal economy and individuals who had not issued a return (p. 7). The report suggested that in 2002, 13% (£2.5 billion) of tax due by those subject to self assessment was lost. This figure is equivalent to, and was estimated to be, £17.6 billion in 2007 (Murphy, 2007 - the estimation is based on extrapolating the average tax lost on direct taxes and those taxes that probably behave like them and applying this to 2007/08 HMRC data.).

It has long been argued by the UK tax authorities that in spite of the numerous problems faced by practitioners and taxpayers, the objectives of SAS have been significantly accomplished (Brodie, 1999). Although there were some difficulties, taxpayers and practitioners have cooperated well with SAS (James and Nobes, 2000: 37). The UK government has benefited from SAS with improved administration of income tax, making assessment easier, efficient, straightforward, encouraging taxpayers to disclose all income voluntarily and bringing their tax affairs up to date. SAS has also brought about technological innovation (e-filing), instilled public awareness through education programmes, publicity and branding and consultation with external bodies (Hinks, 2000; HMRC, 2008).

[25] http://www.hmrc.gov.uk/pbr2007/mdtl-direct.pdf

In conclusion, tax development in the UK from World War II to the current date has undergone significant tax reform. However, after twelve years of operation (since 1996, refer Table 2.1), SAS continuously faces problems, difficulties and challenges which need to be taken into account by tax authorities. The explosion in information technology (e.g. wireless networks) as well as taxpayer's behaviour in reaction to the technology enhancement, inflation rates and the economic situation mean that there are very likely to still be future changes to the outcome of any SAS regulations and laws currently implemented. The economic environment is dynamic and agile – tax systems must be equally so. Therefore, the legislation, and particularly the fiscal policies, must be in line with government objectives to fulfill people's needs and maintain public perception on equity and fairness. In an economic situation where prices are increasing and living costs are high, people tend to comply less with tax laws.

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c) Japan

Tax administration in Japan has gone through various reforms to improve its standards. The introduction of the self-assessment system was the particular highlight of tax administration reform after World War II (Kimura, 2006). SAS in Japan was first introduced in 1947 to replace the direct assessment system. However, 1868 saw the beginning of modernisation for Japan. At that time they received the majority of their tax revenues comprised mostly of land tax and liquor tax. Income tax was first introduced in Japan in 1887. In 1940, corporate tax was separated and became

independent from income tax law. The taxes on income have now replaced land tax as the main sources of tax revenue in Japan (Kimura, 2006).

At the inception, a direct assessment system was implemented. In 1947 at the end of World War II, the self-assessment system was applied to all the major sources of tax revenues[26]. The introduction of SAS was a massive transformation in the taxation method and it was the start of a series of major tax administration reforms in the post-war era.

In the initial days of introduction, the tax authority was worried about winning the trust of taxpayers and there were many alterations to the process before the system was considered to be operating smoothly (Ishi, 2001; Kimura, 2006). In the period following the end of World War II, inflation was running at more than 100% per annum in Japan. Since the existing taxation system was based on the previous year's income, it was no longer possible to secure the necessary tax revenue in the hyper-inflationary environment. A decision was taken to adopt a new system under which taxpayers would calculate and file their own income for the current year. This issue notwithstanding, another driving factor supporting the move to SAS was the incapability of the revenue staff in dealing with increasing number of taxpayers. This was due to a sudden flow in the number of people who had to pay tax because the inflationary economy was creating many more taxpayers as tax thresholds failed to keep up with inflation. The following are some of the main problems arising in the early stage of SAS in Japan (Kimura, 2006):

- Problems detecting individuals running their own businesses.

[26] At that time taxes involved were individual income tax, corporate tax and inheritance tax.

- Individual income tax has a minimum taxable income threshold, making it more difficult to identify those with tax obligations.
- Many sole proprietors and family-owned small and medium corporations found it was difficult to adapt to the new system, and many did not even keep accounting books.
- The actual amount of tax paid was less than the amount budgeted for by the government.
- Tax officers were making assessments without any clear basis through which to meet the target, resulting in the public further losing trust in the tax authority. By 1948, many anti-tax protests were staged in various parts of Japan. Some had led to threats and violence against tax officers. In some cases, petrol bombs were flung into tax offices and homes of tax executives.
- The difficulty in terms of filing and collection.

Since many problems arose with the existing tax administration system and the nation's trust of the tax authority deteriorated, it was thought that a more specialised tax administration organisation was needed. Therefore, in June 1949, to preserve trustworthiness, the National Tax Agency (NTA) was established as a separate body from the Tax Bureau of the Ministry of Finance to focus on tax assessment and collection.

The emergence of NTA has proved to be a successful move in preserving the credibility and supremacy of the tax authority. They have elevated the sense of moral duty toward tax. Efforts were made to further inform taxpayers about the tax system and to provide advice for those requiring assistance; they also focused on human

resources development including improved staff training, promotion of bookkeeping and accounting records and proper tax filing and also received important support from tax associated bodies in the private sector and Certified Public Tax Accountants (CPTAs).

In Japan, as in the USA and the UK, ensuring compliance via tax audits and fines is a common approach to improving tax collection. In order to preserve people's trust in the system and their belief that tax is applied equally, and to maintain their motivation to file and pay taxes correctly, it is essential that those who try to avoid tax, be dealt with firmly, sometimes by making them the focus of prioritised tax audits. Tax collection had also become a major obstacle, whereby it operated in an extraordinary environment where delinquency rates were more than 40% (Kimura, 2006). Prevention of non-compliance and prompt addressing of new delinquency therefore became the focus. While calling upon taxpayers to pay tax in time, automatic debiting of tax against their bank accounts was also implemented. As a result, delinquency rates fell significantly and collection operations started to improve.

In order to ensure that taxpayers are capable of fulfilling their tax returns, various measures have been implemented by the NTA including public relations, tax consultations and tax education. Various tax education programmes have been designed by NTA including lectures on taxes, preparing and distribute tax guidance materials and also organising writing contests particularly for school children (NTA Annual Report, 2008). On top of these, in order to facilitate schoolchildren to find, learn, think of, and solve their tax problems, the NTA has set up 'Tax Space Euno'- a tax game which encourages students to solve their tax matters. (NTA Annual Report

2008). E-Tax (e-filing) was also introduced to facilitate taxpayers in filing procedures as well as allowing payment of tax liabilities via online banking and an ATM connected system called Pay-easy. Since January 2008, taxpayers who file tax returns via e-Tax have been given a 5,000 yen (£35) tax rebate (limited to the amount payable for that year).

Table 2.10 demonstrates the number of individually filed tax returns, Table 2.11 represents examinations of self assessed income tax and Table 2.12 represents Japan's tax evasion in 2007.

Table 2.10: Japan- Number of individual tax returns filed fiscal year 2006

	'000 persons
Total population	127,770
Workforce	63,820
Number of tax returns filed	23,620
Refunds	12,690
Tax payments	7,770
Income earner category:	
Business income	1,500
Other income	5,970
Real estates	1,090
Employment	2,640
Others	2,240

Source: National Tax Agency of Japan (NTA) Annual Report 2008, http://www.nta.go.jp/foreign_language/2008e.pdf page 48.

Table 2.11: Japan- Examinations of self assessed income tax fiscal year 2006

Field examination	Number of cases ('000)	Total understated income Million yen	Understated income per case Thousand yen	Total additional tax revenue collected Million yen	Additional tax revenue collected per case Thousand yen
Special general*	63	533,700	8,460	99,500	1580
Focusing **	183	328,100	1,800	15,300	80
Brief contract ***	549	54,800	100	9,500	20
Total	795	916,600	10,360	124,300	1,680

Notes:
** Focus examination of the malicious taxpayers.*
*** Short term examination to grasp understated income.*
**** Correction of tax return errors by speaking with the taxpayers by telephone or by asking the taxpayers to visit the tax office.*

Source: National Tax Agency of Japan (NTA) Annual Report 2008, http://www.nta.go.jp/foreign_language/2008e.pdf page 49

Table 2.12: Japan- Tax evasion fiscal year 2007

Cases conducted	Cases closed	Prosecutions	Total tax evasion Million yen	Tax evasion per case	Total tax evasion (In prosecuted case)	Tax evasion per prosecuted case
			Million yen			
220	218	158	35,300	162	30,900	195

Source: National Tax Agency of Japan (NTA) Annual Report 2008, http://www.nta.go.jp/foreign_language/2008e.pdf page 49

Self-assessment in Japan has gradually become accepted by the public as the basis for the stable tax revenue that is required for running the nation. Now it has firmly taken root they are preparing for the next challenges of the 21st century. The basic principles and objectives of SAS have remained unchanged. However, as the system shifts into the 21st century there are many developments in the environment surrounding tax administration in Japan, such as the information technology (IT) explosion, globalisation, the declining birthrate and the ageing of the population. The number of taxpayers has risen and cases of tax assessment and collection are getting more and more complex and difficult. To overcome these problems, the Japanese tax authority have set up five basic themes for tax administration, namely taxpayer service, ensuring compliance, the use of IT and streamlining operations, the role of tax accountants, and human resources development (Kimura, 2006).

In conclusion, the history of the Japanese tax administration particularly in SAS is seemingly a series of steady steps taken to strengthen tax audits, increase tax collection and preserved fairness and equity as well as other activities to ensure compliance. A steady effort to work on the basics such as developing human resources, instilling public awareness and educating taxpayers have also proved very important. The victory in implementing SAS in Japan has not come about overnight - strong co-operation between the tax authority and taxpayers is the main ingredient.

d) The Organisation for Economic Co-operation and Development (OECD) Countries as a Group

The self assessment system is widely practiced in the OECD countries and around half of OECD countries (refer Table 2.13) have implemented a self assessment system for personal income taxation (OECD, 2007). In contrast, for the other OECD countries, the system of tax administration is based on administrative direct assessment. Tax administration practices across OECD countries demonstrate a variety of issues and problems and therefore, taken collectively, provide a comprehensive review of the majority of tax administration issues faced when using self assessment systems. This section therefore builds on the specific cases of the USA, the UK and Japan already explored in detail above in order to widen the review of the administration of the self assessment system.

Out of thirty members of the OECD, tax administrations have evolved into a variety of institutional arrangements however, in the majority of cases there are unified and semiautonomous bodies with a broad range of powers. They are mainly responsible for tax administration that report directly to their respective governments. In many OECD countries, a separate body for the collection of tax and social contributions and revenues bodies has been given a considerable degree of autonomy to carry out and administer their own tax systems (OECD, 2007). The evolution from autonomy[27] to semi autonomy[28] administration as well as the integration of tax collection among a large number of OECD members has increased taxpayers' confidence in the tax

[27] Autonomy – A broad range of powers that are mainly responsible for tax administration and collections without government intervention (OECD, 2007).
[28] Semi autonomy - A broad range of powers that are mainly responsible for tax administration and collections with government intervention particularly in developing policies (OECD, 2007).

administrations and their perception of equity and fairness of the tax systems (OECD, 2007). On top of this, the change from autonomy to semi autonomy has also increased the efficiency of the tax system by means of efficient use of resources, lowering administration costs[29] and lowering taxpayers' compliance costs (Barrand, Harrison and Ross, 2004). In addition, the steps taken by most of the OECD countries in using the self assessment system has increased taxpayers awareness, knowledge and compliance gradually, particularly within three to five years after the introduction of the SAS (OECD, 2007). Table 2.13 illustrates summary details countries that use a SAS across OECD countries.

[29] E.g. Typically they help eliminate duplication of core functions require fewer staff and exploit economies of scale in human resource management and training, lower infrastructure costs in office telecommunication network and elimination of IT duplication development and maintenance costs.

Table 2.13: SAS for individual in OECD countries and tax administration arrangements

OECD countries	Compulsory filing annual returns?	Type of revenue body	Collect most social security	Performs custom function	Performs other non-tax role
Australia	Yes	Unified semi autonomous body	Not applic.	No	Yes
Canada	Yes	Unified semi autonomous body with board	Yes	No	Yes
Hungary	Yes	Unified semi autonomous body	Yes	No	Yes
Ireland	No	Unified semi autonomous body	Yes	Yes	Yes
Italy	No (if only in receipt of employment income and no deductions)	Semi autonomous body	Yes	No	No
Japan	No	Unified semi autonomous body	No	No	Yes
Korea	No	Unified semi autonomous body	No	No	No
Mexico	No (if income is less than $300,000 and interest less than $100,000)	Unified semi autonomous body	No	Yes	No
New Zealand	No	Unified semi autonomous body	Not applic.	No	Yes
Poland	Yes	Multiple directorate in MOF	No	Yes	No
Slovak Rep.	No	Unified semi autonomous body	No	No	Yes
Spain	Yes	Unified semi autonomous body	No	Yes	Yes
UK	No	Unified semi autonomous body	Yes	Yes	Yes
USA	Yes	Unified semi autonomous body with board	Yes	No	Yes

* MOF – Ministry of Finance

Source: OECD (2007) pag. 28.

In terms of personal income tax, the vast majority of countries rely on 'withholding at source' arrangement for the collection of tax revenue, in respect of salary and wages. Taxpayers are also required to file their tax returns annually under the self assessment system, so the filing methods vary across countries. The period of time taken to finalise tax liabilities and make a final payment (if total tax payable is more than total tax credits (deductions at source) also varies across countries from as low as three months up to eleven months from the date the tax returns are due (refer Table 13 in OECD, 2007: 67).

The implementation of SAS in more than 60% of the OECD countries has produced significant reforming of the tax administration of these countries especially in terms of improving overall taxpayer compliance with tax laws and efficiency (early collection of tax revenue, an expanded and better targeted audit programme and through reducing the incidence of disputed assessment) (OECD, 2007). In order to further improve their SAS, some OECD countries encourage tax authorities to pre-fill tax returns to assist taxpayers in meeting their return filing obligations. This pre-filled tax return programme has been implemented in the Nordic region (i.e. Denmark, Estonia, Finland, Norway, and Sweden) and more recently in Chile and Spain (OECD 2007: 61) and has shown benefits for both taxpayers and tax revenue bodies including a substantial reduction in taxpayers' burden; greater certainty for taxpayers in claiming their deductions and calculating their tax liabilities; an improved image of revenue bodies; faster processing of the tax returns; quicker refunds and minimised unintended errors made by honest taxpayers (OECD, 2007).

A variety of special education programmes have also been designed across OECD countries to educate their taxpayers in respect of their responsibilities and updating their tax knowledge and regulation in a particular year of assessment. Since filing annual tax returns is not compulsory in all OECD countries (refer Table 2.13), therefore, in countries where personal taxpayers are required to file annually, these measures are particularly important to ensure the filing procedures are fully complied with. In these cases taxpayers are provided with a tax guide to assist them in understanding tax laws and in certain cases tax assistants are provided to assist taxpayers in completing their tax returns.

Taxpayers are also being given ample time to file their tax returns in the self assessment system, for example in Canada and Korea, taxpayers have four and five months respectively to submit tax returns (OECD, 2007: 71) after the financial tax year ends.

As a measure to increase tax compliance (and perceptions of fairness and equity) and instill public awareness of their tax responsibilities in line with the self assessment system, all OECD countries imposed a penalty (interest) on tax not paid on time. Certain countries impose failure-to-file penalties or additional tax liabilities or may apply rates of tax liability to the delayed period (i.e. Denmark, Greece, Portugal and USA) (OECD, 2007: 85).

Although more operations are becoming computerised, salary is the single largest cost item for tax administration functions in 2003 and 2004 in all OECD countries because the revenue body's mission is to collect revenues by enforcing tax laws, not to make government expenditures. Salary ratios in 2004 are in the 60-90 per cent range of total tax administration cost in two thirds of OECD countries while others hit the 50-60 per cent range. As illustrated in Table 2.15 and 2.16, cost of collection ratios (i.e. the ratio of administrative costs/tax revenue collections), which are widely used internationally to draw conclusions on the relative efficiency and effectiveness of revenue bodies, vary substantially across countries, in part due to factors unrelated to efficiency and effectiveness. Notwithstanding the little amount of revenue collected by those functions, compared to total staff usage, tax audit and verification activities are important measures for compliance management purposes.

Table 2.15: OECD Self-assessed Countries - Aggregate Administrative Costs for Tax Administration Functions (2004)
(All amounts in millions of local currency, unless otherwise stated)

COUNTRY	Aggregate administrative costs for all tax functions (incl. salaries)		Total salary costs for tax functions		Salary costs/aggregate administrative costs (%)		Total IT costs		IT costs/ aggregate administrative costs (%)	
	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Australia	2,299.9	2,438.9	1,466.2	1,528.8	63.8	62.7	412.0	420.5	17.9	17.2
Canada /1	3,164	2,946	n.avail.	n.avail	-	-	366	370	11.6	12.6
Hungary	n.avail	71,143	n.avail.	52,587	-	73.9	n.avail.	n.avail.	-	-
Ireland/1	337	365	246	266	73.0	73.0	31	38	9.3	10.4
Italy	1,864	2,275	956	1,155	51.3	50.8	107	116	5.7	5.1
Japan	723,221	717,627	568,620	569,512	78.6	79.4	73,258 /1	70,079 /1	10.1	9.8
Korea	879,651	949,234	579,627	641,733	65.9	67.6	47,508	58,056	5.4	6.1
N. Zealand	289	310	168	188	58.1	60.6	67	68	23.1	21.9
Poland/1	2,837	3,789	1,783	2,526	62.8	66.7	n.avail.	n.avail.	n.avail.	n.avail.
Slovak Rep.	2,381	2,572	1,520	1,641	63.8	63.8	530	391	22.2	15.2
Spain	1,086	1,149	730	768	67.2	66.8	69/1	70/1	6.3	6.1
UK /1	3,140	3,146	1,866	1,871	59.4	59.5	430	529	13.7	16.8
USA	9,400	9,760	6,850	7,120	72.9	72.9	1,560	1,600	16.6	16.4

Source: OECD (2007) page 108.

Table 2.16: OECD Self-assessed Countries - Comparison of Aggregate Administrative Costs to Net Revenue Collections

COUNTRY	Administrative costs/ net revenue collections (costs per 100 units of revenue)					Abnormal or unusual factors likely or known to influence reported ratio
	2000	2001	2002	2003	2004	
Australia	-	1.06	1.07	1.05	1.05	
Canada	1.07	1.08	1.20	1.33	1.17	Removal of customs functions to separate agency at the end of 2003; costs and revenue bases for 2003 and 2004 exclude customs.
Hungary	1.45	1.23	1.35	n.avail.	1.14	Revenue base includes social contributions.
Ireland	0.81	0.90	0.95	0.91	0.86	Costs include customs operations; revenue base includes social contributions and VAT on imports.
Italy	n.avail.	n.avail.	n.avail.	0.42	0.52	Costs exclude substantial tax fraud work carried out by Guardia di Finanza (tax police).
Japan	1.42	1.54	1.66	1.67	1.58	Relatively low tax burden; revenue base excludes separately-collected social contributions; substantially reduced administrative workloads due to design features of tax systems- refer to main body of text.
Korea	0.80	0.85	0.85	0.82	0.86	Substantially reduced administrative workloads due to tax systems design features -refer to main body of text.
Mexico	1.47	1.20	1.19	1.21	1.17	Ratio is slightly overstated as cost element includes overheads for customs.
N. Zealand	0.89	0.90	0.87	0.83	0.81	
Poland	1.54	1.50	1.78	1.95	2.62	Costs and revenue base include customs operations; revenue base excludes social contributions.
Slovak Rep.	1.30	1.43	1.46	1.45	1.26	Revenue base includes VAT on imports but not social contributions or some income tax refunds.
Spain	-	0.81	0.78	0.83	0.82	Revenue base includes customs administration and VAT on imports.
UK	1.02	1.06	1.11	1.04	0.97	Revenue base includes national insurance contributions while cost base includes all staff of national contributions agency.
USA	0.43	0.46	0.52	0.57	0.56	Revenue base includes social contributions; no national VAT .

Source: OECD (2007) page 110-111.

Table 2.17: OECD Self assessed Countries - Comparison of Registered Taxpayer Populations

COUNTRY	Number of citizens (mlns)	Labour Force (mlns)	Number of active registered taxpayers (million)			Relative indicators	
			Personal income tax (PIT)	Corporate income tax (CIT)	Value added tax (VAT)	Registered personal taxpayers/ labour force (%) /1	Employees generally file annual returns
Australia	20.1	10.2	17.04	1.05	2.4	167.1	Yes
Canada	31.9	17.2	23.3	1.5	2.2 /4	135.4	Yes
Hungary	10.1	4.1	4.4	0.39	1.9	107.3	Yes
Ireland	4.0	1.9	1.99	0.111	0.236	104.6	No
Italy	57.6	24.4	n.avail.	n.avail.	n.avail.	-	No
Japan	127.7	66.4	46.14 /4	2.74 /4	2.13 /4	69.5	No
Korea	48.1	23.4	2.2	0.34	4.0	9.4 /2	No
Mexico	104.0	42.6	8.3	0.6	6.3	19.5	No /4
N. Zealand	4.1	2.1	5.1	0.40	0.62	242.9	No
Poland	38.2	17.3	28.26	0.37	1.857	163.4	Yes
Slovak Rep.	5.4	2.7	0.51	0.13	0.13	18.9 /2	No
Spain	42.7	20.2	37.6	1.1	2.9	186.1	Yes
UK	59.8	29.4	28.5	0.7	1.8	96.9	No
USA	293.6	148.6	222.5	10.5	n.applic.	149.7	Yes

Source: OECD (2007) page 112.

2.4.2 Developing countries

Having analysed the SAS of the USA, the UK and Japan, and reviewed the key features of other developed OECD countries earlier in this chapter, this section discusses the use of SAS in developing countries. It includes the cases of Cambodia and Sri Lanka as examples of two developing countries that are currently engaged in using SAS. These are chosen to illustrate cases of relatively (apparently) successful SAS implementation (Cambodia) and one facing more problems (Sri Lanka) with their use of SAS - although

it is acknowledged that wide varieties of tax and SAS design can be found amongst developing countries.

a) Cambodia

Initially, the tax authority of Cambodia was known as the Tax Department. It was re-established in 1981 with capacity of less than 200 officers and the first branch was in Phnom Penh with five more offices in other locations. The tax system was first introduced in 1982 formerly known as Official Assessment (also called the Pure Estimated Regime of Taxation). Like other countries implementing this system, Cambodian taxpayers were simply required to declare their income in a tax return and furnish all relevant documents to support this claim. Then, tax officials assessed and calculated the aggregate income and the estimated profit (for a business entity). A notice of assessment would then be issued to the taxpayers and payments were made to tax office cashiers. In 1994, a new system, called the Self Assessment System was introduced to replace Official Assessment (Eang and Seiha, 2006). A further tax reform occurred in 1997 whereby a new Law on Taxation was introduced to accommodate regulations regarding profit tax, salary tax, VAT, excise tax, withholding tax, and associated administrative rules and procedures.

The implementation of SAS in Cambodia was undertaken in stages. Before 2000, SAS was applied only in Phnom Penh. A year later it was extended to 5 provinces and by 2003

a total of 16 provinces (out of 24 provinces) were involved. The tax system was reformed to conform with the country's transition to a market economy.

A comprehensive reform of Cambodia's tax system started in February 1997 (Asian Development Bank, 2008). Revenue mobilisation was the key element in the Government's fiscal strategy. To achieve the targeted increase in the revenue, the Government acted on two fronts: putting in place the structural elements of a modern tax system and strengthening the administrative capacity to collect taxes (Asian Development Bank, 2008).

The main objective of SAS in Cambodia is to increase the efficiency of tax collection (Eang and Seiha, 2006). Several measures have been taking place to strengthen collection including clear strategic management (vision, mission, plans); clear organisational structure; controlling of large taxpayers (with a focus on auditing, filing on time, payment and debt); methods of direct assessment (calculations, payments and penalties); providing good taxpayer service and tax audits (good taxpayer services will promote voluntary compliance by improving taxpayer understanding and confidence in the tax system); introducing better quality technology for assessment, collection, and audit and, finally, employing professional staff, (well-trained staff, with integrity).

In the Cambodian self assessment system, employers also have to make monthly declarations and payments no later than the 15th day of the succeeding month and there is no annual return for personal taxpayers. Tax deducted monthly by the employer is

deemed to be the amount of tax liabilities for the year of assessment (PriceWaterhouseCoopers, 2008).

Like other SAS countries, voluntary compliance remains the issue with the SAS. The compliance rates are relatively low in Cambodia[30]. Several measures have been planned and undertaken by the tax authority to minimise non-compliance behaviour. The strengthening of tax auditing to detect non-compliance taxpayers has been aggressively implemented, a measure in which tax officials conduct general audits on selected taxpayers all over the country. In 2005, around 1,000 large and medium taxpayers were audited which resulted in more than KHR400 billion (£643,956.00) being collected (Eang and Seiha, 2006). Continuous staff training has also been conducted in line with tax audits to enhance the credibility and performance of the tax officials and thereby developing taxpayers' confidence and exposure to current tax laws. On the other hand, the Cambodian tax authority is also facing a number of problems with SAS; many taxpayers file tax returns with loss results for many years which in turn reduces tax collections, limits their capacity and places a strain on human resources (i.e. tax auditors) (Eang and Seiha, 2006; Cambodia Annual Economic Review, 2004). Lack of guidelines for processing tax audits, limitation of receiving information between related offices and lack of equipment to support audit plans has to be tackled wisely so that the objectives of SAS are achieved (Eang and Seiha, 2006).

[30] Riahi-Belkaoui (2004: 138) suggested that among Asian countries, Cambodia has the lowest tax compliance index (3.12) compared to other countries such as Malaysia (4.34), Thailand (3.41), Japan (4.41) and Philippines (3.83). Tax compliance is measured based on a scale from 0 to 6. A high score indicates higher compliance

In terms of information technology, Cambodia is facing some problems due to lack of resources (Economic Institute of Cambodia, 2009). The significant cost incurred by IT development not only relates to purchasing equipment but also to after-sale costs such as software, technical support and staff training. Therefore, a well-designed computer system is a useful device for a tax administration, and when used effectively can reduce the cost of operations, improve efficiency of controls, and assist taxpayers in complying with tax legislation. Limited internet access throughout Cambodia has also become a major barrier to tax administrator's attempts to implement SAS easily, effectively and successfully in the way it is typically used in developed countries now. Statistics show that internet coverage was at approximately 6,000 out of total population of 12,573,580 (0.05%) in the year 2000. This number significantly increased to 44,000 out of the total population of 15,507,538 (0.3%) in 2007 (International Telecommunications Union, 2008).

In conclusion, although Cambodia is a less developed country, it demonstrates the spirit necessary to excel in its tax administration. Thus the administrator is consistently implementing procedures to realise the country's SAS objectives. Introducing E-service, the internet, posting tax information on the website, producing and providing more tax guides and information brochures, improving the process of response answering inquiries, providing more seminars, making more use of media including TV, radio and newspapers, improving relationships with tax agents as well as increasing interaction with community groups are some prominent steps taken by the administrator to enhance the efficiency (Eang and Seiha, 2006; Economic Institute of Cambodia, 2009).

Tax and compliance costs remain a crucial obstacle to a systematic modern tax system (Vanderbruggen, 2008) and encouraging compliance is an important element in enabling taxpayers to achieve some degree of satisfaction in response to what they pay (tax). The Tax Department (TD) claimed that taxation must first and foremost be predictable and clear so as to not impede business and investment (Asian Development Bank, 2008). In Cambodia, the transparency of the tax system would greatly benefit from educational programmes on tax regulations, clarifying or establishing the official administrations. However, the TD is facing problems in improving tax systems in Cambodia i.e a procedure providing "rulings" (for which there is an existing legal basis) would dramatically improve the predictability of the tax system. In addition, an independent and efficient tax dispute settlement system would contribute much to the clarity and predictability of the tax system in order for the Cambodian tax system to become "fair and equitable" in accordance with the prevailing international legal principles on the subject; further, in order to empower businesses, an independent judicial or quasi-judicial procedure must be implemented to settle disputes (Vanderbruggen, 2008). Table 2.18, 2.19 and 2.20 illustrates Cambodia's tax revenue as a percentage of GDP compared to other countries, the number of taxpayers and corporate and personal tax revenue.

Table 2.18: Cambodia -Tax Revenue as a Percentage of GDP, (2005-2007)

Countries	2005	2006	2007	Average 3 years %
New Zealand	32.7	33.2	na	33
Brunei	33.1	30.3	na	32
Australia	25.5	25.3	25.0	25
Sri Lanka	13.7	14.6	14.2	14
Malaysia	15.4	15.1	14.8	15
Japan	10.3	10.6	na	10
Taipei, China	9.3	9.2	na	9
Cambodia	7.4	7.6	10.2	8
India	7.5	8.5	9.2	8

Source: Based on Asian Development Bank (2008) page 219 and 222.

Table 2.19: Cambodia – Number of taxpayers in 2007

Group of taxpayers	2006	2007
Companies	17,287	18,387
Individuals and partnerships (employees)	234,655	254,232

Source: Based on Asian Development Bank (2009).

Table 2.20: Cambodia – Corporate and personal tax revenue 2006 - 2007 (KHR million)

	2006	2007
Total Tax Revenue (including other tax revenue)	465,645	487,989
Corporate tax	278,299	280,877
Personal tax	152,876	158,342

Source: Based on Ministry of Finance and Economy Kingdom of Cambodia (2009).

b) Sri Lanka

Income tax in Sri Lanka was first introduced in 1932. Income tax administration was mainly governed by the Income Tax Department (ITD) which was established in the same year and now ITD is known as Department of Income Tax, Estate Duty and Stamps (the Department). The vision is "to be a taxpayer friendly tax administrator delivering excellent service to the tax paying public, with well trained and dedicated staff" (Inland Revenue Sri Lanka, 2008) while the mission is "to collect taxes under the law by encouraging voluntary compliance, and to enhance public confidence in the integrity and efficiency of tax systems by administering tax and related legislation fairly, uniformly and courteously and thereby facilitate and foster a beneficial tax culture" (Inland Revenue Sri Lanka, 2008).To realise both vision and mission, strategic goals were also outlined which were "to improve voluntary compliance with the tax laws through programmes which encourage and assist that and detect those who do not comply and, where necessary, take appropriate corrective action" (Inland Revenue Sri Lanka, 2008). Judging from its mission, and strategic goals, 'compliance' and 'corrective action' appear to be important goals in administering tax in Sri Lanka.

The tax system in Sri Lanka can be classified into five main categories, namely income taxes (charged on current year basis), value added tax, debit tax, betting and horse racing, economic service charges and taxes on international trade; the system is based on self compliance. There are three methods of tax payment in Sri Lanka, namely: 1-

Monthly Tax Deductions from Regular Profits[31]; 2) Tax on Tax on Lump-sum-payments (e.g. bonus etc.) and 3) Rates for the Deduction of Tax from Once-and-for-All Payments (Terminal Benefits)[32] (Inland Revenue Sri Lanka, 2008).

Under SAS, taxpayers are encouraged to comply with their tax obligation by declaring accurate income especially casual income, pay the correct amount of tax as well as alert the authorities on due dates. In order to overcome non compliance, higher penalties and aggressive tax audits are imposed. Table 2.21 summarises the development of the tax system in Sri Lanka.

[31] Regular profits from employment include (Inland Revenue Sri Lanka 2008) :
(i) Wages, salary, commission, overtime pay, traveling allowances and other allowances, fees, pension or such other profits from employment that arise or accrue in such pay period.
(ii) Payment on housing, conveyance, medical bills, insurance policies, electricity, telephone bills and entertainment, etc.
(iii) Any such payment or benefit provided by the employer to a member of the family or any other person.

[32] The amounts of the One-and-for-All Payments to which this table applies are (Inland Revenue Sri Lanka 2008):
(a) Retiring gratuity up to a ceiling of:
(i) Rs. 1,800,000; or
(ii) The product of average monthly salary for the last three years and the number of completed years of service; which ever is higher;

Table 2.21: Tax development in Sri Lanka

Year		Activities
1941	-	Excess Profits Duty came into operation
1948	-	Profits Tax was introduced replacing Excess Profits Duty
1950	-	Signed the first Double Tax (Relief) Treats by Ceylon with UK
1958	-	Kaldor Commission Proposals Taxation of Capital gains Wealth Tax Expenditure Tax Gifts Tax Named the Department as Department of Inland Revenue
1961	-	Introduction of surcharge on income tax, National Development Tax, Rice Subsidy Tax, Surtax, a Tax on Registration of Business and Professions and a Sales Tax (Last for 2 days only)
1963	-	Establishment of first Regional Office in Jaffna. Introduction of Business Turnover Tax under Finance Act 11 of 1963.
1964	-	The first tax amnesty
1971	-	Compulsory Savings Levy came into operation PAYE scheme was introduced. Capital Levy was introduced
1972	-	**Introduction of the Self Assessment Scheme.**
1974	-	The Department of Inland Revenue was re-structured. Inland Revenue Service was established
1979	-	Introduced current year basis taxation (79/80)
1983	-	Introduction of Rehabilitation Levy
1985	-	Abolished Estate Duty and Gifts Tax
1986	-	Introduction of Withholding Tax on interest
1988	-	Implementation of the “Imputation System” of Company Taxation. Imposition of Betting and Gaming Levy.
1991	-	Devolution of Turnover Tax on whole sale and retail to Provincial Councils.
1992	-	Introduction of Withholding Tax on Specified Fees. Commenced Automation Introduce Defense Levy (NSL)
1998	-	Introduction of Goods and Services Tax (in place of Turnover Tax)
2002	-	Introduction of Value Added Tax (by abolishing Goods and Services Tax and National Securities Levy) - Abolished Stamp Duty and introduced Debits Tax

2004	-	Economic Service Charge was introduced
2005		Introduced Share Transaction Levy and Social Responsibilities Levy.

Source: http://www.inlandrevenue.gov.lk/

According to Table 2.21, the self assessment system was first introduced in 1972 which means that Sri Lanka has been experiencing 36 years of operation of a SAS. However, the triumph of SAS does not rely on how long it has been implemented: various factors play significant roles in relation to a SAS victory. Table 2.22 summarises the number of taxpayers in Sri Lanka in 2004.

Table 2.22: Sri Lanka – Number of taxpayers in 2004

Group of taxpayers	
Resident companies	26,344
Non resident companies	315
State corporations, statutory boards and state owned institutions	71
Individuals and partnerships (employees)	338,551

Source: Inland Revenue Sri Lanka (2008).

The total collection of revenue for the year 2004 amounted to Rs.164.8 billion (£855 million) (Inland Revenue Sri Lanka, 2008) which represents a growth of 18.5% over that of 2003. When the revenue collection under each type of tax is compared with the corresponding estimates, it is seen that the targeted revenue collection in relation to every type of tax, except income tax, has been achieved. Table 2.23 represents Sri Lanka's tax revenue, percentage of GDP and cost of collection from 2006 to 2008.

Table 2.23: Sri Lanka – Tax revenue, percentage of GDP and cost of collection– 2006 - 2008 (Rs. million)

	2006	2007*	2008*
Total revenue	477,834	599,817	750,741
As a per cent of GDP	16.3	16.9	18.0
Tax revenue	428,378	540,929	677,259
As a per cent of GDP	14.6	15.2	16.2
Non tax revenue	49,455	58,888	73,482
As a per cent of GDP	1.7	1.7	1.8
Cost of collection per Rs100	.63	.32	.30

** Estimation*

Source: Based on Central Bank of Sri Lanka Annual Report (2007) page 119.

Although the SAS has been in operation since 1972 in Sri Lanka, Dissanayake (2009) claimed that the system was only suitable for implementation in developed countries but not for Sri Lanka. He also claimed that only 3% out of approximately 250,000 tax returns were audited every year and that 97% of tax returns remained unaudited. The tax authority relied on the self-assessed tax returns, with no detailed auditing carried out. The Inland Revenue Commissioner also asserted that tax audits or assessments would be exercised if it was felt that an additional tax could be generated due to lack of human resources. Principally, individual taxpayers should be audited every three years at least. As a result, the Sri Lanka tax authority are suffering an increment in tax collection default due to inefficient tax audits and tax collections (Dissanayake, 2009). According to the Annual Report 2008 published by the Central Bank of Sri Lanka, the default tax in 2007

is over Rs. 158 billion (£828 million).- a 69.7 per cent increase in default taxes over the figure for year 2000 due to improper tax collection procedures and lack of specially trained task force (Dissanayake, 2009).

The Inland Revenue Commissioner also admits that the main problem for the successful implementation of SAS is lack of human resources. For example, since 2007, 118 (out of approximately 750) tax officials have left due to lack of job satisfaction - graduates who are recruited as tax officers, have no promotion prospects. They remain tax officers until they retire. Despite no future prospects, the burdens of the job also become another factor explaining why many tax officials have left. On average, a tax official has to assess 800 – 1,200 tax returns every year (Dissanayake, 2009). Consequently, the tax authority must train new tax officials more frequently, which is costly.

SAS in Sri Lanka appears to be far from being a success (Dissanayake, 2009) unless some measures are taken by the tax authority. A continuous education programme should be implemented to cultivate awareness among taxpayers particularly highlighting their responsibilities as taxpayers (Central Bank of Sri Lanka Annual Report, 2008). In addition, the government should focus on human resources development as well as offering more opportunities (career enhancement) to tax officials so that they would have more motivation to work. A user friendly website, as has been introduced in many developed countries (e.g. the UK, the USA and Australia) should be developed to offer

information which is related to tax matters or as a platform for taxpayers to file their tax returns and make a payment (e-filing).

c) Malaysia

Tax in Malaysia was introduced by the British into the *Federation of Malaya* in 1947 and was based on *Heasman's Report* (Singh 1999). Initially, the *Income Tax Ordinance 1947* was gazetted as the main act but this was subsequently reformed and replaced by *Income Tax Act 1967* (ITA) which took effect on January 1, 1968. During that time, ITA consolidated the three acts of income taxation namely *Sabah Income Ordinance 1956*[33], *Sarawak Inland Revenue Ordinance 1960*[34] and *Income Tax Ordinance 1947*[35]. Currently, ITA 1967 is the main act to govern direct taxes in Malaysia including corporate and individual income tax. The *Lembaga Hasil Dalam Negeri* or the Inland Revenue Board (IRB)[36] is the tax authority which administers direct taxes in Malaysia. Other than ITA, the IRB are also responsible for administration, assessment, collection and enforcement of real property gain taxes[37], petroleum taxes[38] and stamp duties[39]. Royal Malaysian Customs (RMC) is the government agency responsible for administering the nation's indirect tax policy. The core business is to collect tax and in

[33] Applicable to Sabah only.
[34] Applicable to Sarawak Only.
[35] Applicable to Peninsular of Malaysia only.
[36] It is under the Ministry of Finance. The *Inland Revenue Board Act 1995* established on March 1, 1996 to replace Inland Revenue Department (IRD).
[37] Real Property Gain Tax 1975.
[38] Petroleum Act 1967.
[39] Stamp Act 1949.

line with that, RMC's vision is to be a respected, recognised and world class Customs Administration (*www.customs.gov.my).*

The introduction of self assessment basis of taxation involved a substantial shift of responsibility on to the taxpayers in terms of their compliance obligations. SAS was first introduced in 2001 for companies and 2004 for personal taxpayers and the IRB have now experienced nine years of companies' SAS (2001 to 2009). The effectiveness of the SAS has shown a positive effect since its implementation. In year 2002 to 2006[40], tax collection from companies has increased at an average rate of 12.78% per year (2006 RM30.5/£5.35 billion; 2005 RM28.1/£4.93 billion; 2004 RM24,6/£4.63 billion 2003 RM23.1/£4.05 billion – IRB Annual Report, 2006). The legislation, tax services and education and the enforcement of the law are some important elements which led to the improvement of tax collection for companies. The computer system for handling the corporate taxation was fully developed and has been in use since 1 January 2003. Under SAS, the IRB would be involved in an expanded programme of checking and verifying tax returns on a post-assessment basis, particularly by way of tax audits and the implementation of a penalty system to enforce compliance with tax law. These would allow revenue officials to 'inquire into returns' in the six years that follow the filing period. They would also be able to demand a taxpayer to produce records that they may 'reasonably require' for them to verify. From 1990 to 1996, it was reported that approximately twenty to thirty per cent of the returns filed were not assessed by the IRB (Kasipillai, 1998a, 1998b). In 2003, although nearly 3.5 million tax returns were

[40] Latest IRB report covers until year 2006.

assessed, they represented only 67 per cent of returns lodged (IRB Annual Report, 2003). For individual taxpayers in the first year of SAS (2004) the IRB collected RM9.471/£1.75 billion as compared to only RM7.572/£1.32 billion in the preceding year, in which the Formal System had taken effect (IRB Annual Report, 2006). Further details of SAS in Malaysia are discussed in Chapter 3.

2.5 SELF ASSESSMENT SYSTEMS – AN INTERNATIONAL COMPARISON

After discussing how SASs are operated in different tax regimes in the previous section, this section summarises SAS operations among countries including the general tax administration, the number of registered taxpayers, administrative costs and the measures taken to increase compliance. Extra developed countries (e.g. Canada and Australia) and developing countries (e.g. Pakistan and Bangladesh) are add to the summary to expand its scope further from the more detailed analysis found earlier in this chapter.

2.5.1 General tax administration

Table 2.24 illustrates a comparison between developed and developing countries in relation to general tax administration.

Table 2.24: SAS – Comparison among developed and developing countries (year of assessment 2007 otherwise stated)

	United States	**Canada**	**Japan**	**Pakistan**	**Bangladesh**	**New Zealand**	**Australia**	**United Kingdom**	**Cambodia**	**Sri Lanka**	**Malaysia**
Income tax authority	IRS	CRA	NTA	CBR	NBR	IRD	ATO	HMRC	TD	ITD	IRB
First introduced	1913	1917	1947	1979	1981	1980s	1986	1996	1994	1972	2001
Basis of return	FY (p)	FY	CY (ai)	FY (z)	FY	FY (j)	FY (f)	CY (i)	CY	FY	CY
Tax audit	/	/	/ (d)	/ (x)	/ (x)	/	/	/	/		/
e-filing	/	/				/ (o)	/	/			/
Penalties	/	/	(e)	/	/ (y)	/	/	/	/	/	/
Taxpayers' Compliance	M	M	ST	W	W	M	M	M		W	
Public rulings	(ad)	(ae)		/ (af)	/	/	/	(ac)			/
Time limit for audit review (years)	3-6(h)	6 (h)	(d)	5		4 (h)	2-4(h)	1-5	5	2	6 (h)
Taxpayer retained records (number of years)	(ag)	6	(ah)	(ah)	(ah)	7	2-5	5	3	4	
Centralised collection			/			/		/	/	/	/
Notice issued		/					/				
Personal tax rates %	10 – 35 (Federal)	15 – 29 (Federal)	5 - 40	7.5 - 35	0 - 25	12.5 - 38	0 - 45	0 - 40	5 - 20	5 - 35	5 - 29
Compliance rates index (2004)#	4.47	3.77	4.41	na	na	5.00	4.58	4.67	3.12	na	4.34
Personal tax revenue as % of GDP	9.0	11.7	4.4	12.3	9.7	14.6	12.2	10.2	10.2	14.2	14.8

Notes:

/ = Applicable to certain countries

FY=fiscal year

CY=current year

ST=compliance rate is high

M=compliance rate is average

W=compliance rate is low

(d) applicable to 'white return' taxpayers (which is used only by the smallest taxpayers and/or corporations (Gillis 1989)

(e) active

(f) 1 July-30 June

(h) unlimited time limit if taxpayers found to have committed tax fraud, however in UK for the similar offence, the time limit is 20 years and 10 month

(i) depends on the accounting year end

(j) 1 April-31 March

(o) for registered tax agent only/ir file for employer

(p) not necessarily calendar year

(x) not significant

(y) little and inconsistent

(z) financial year

(ac) more of Statement of Practice

(ad) non-binding guidelines

(ae) non-binding technical interpretation practices

(af) one advance ruling for non-resident issued recently

(ag) so long as the contents of records are material

(ah) not available

(ai) calendar year

 # Based on Riahi-Belkaoui (2004) – higher index, higher compliance, maximum index is 6.00

Source: Based on Loo (2006: 63); IRB Annual Report (2005); OECD (2007); Asian Development Bank (2008).

As seen in Table 2.24, many countries such including the USA, the UK, Cambodia and Sri Lanka have implemented e-filing as an alternative method whereby to file tax returns. Japan, the UK, New Zealand and Australia have among the highest personal income tax rates recorded while New Zealand and the UK recorded the highest tax compliance index across the countries.

2.5.2 Registered taxpayers

Table 2.25 illustrates a comparison among developed and developing countries in relation to registered taxpayer populations.

Table 2.25 : Comparison of Registered Taxpayer Populations

COUNTRY	Number of citizens (mlns)	Labour Force (mlns)	Number of active registered taxpayers (mlns)			Relative indicators	
			Personal income tax (PIT)	Corporate income tax (CIT)	Value added tax (VAT)	Registered personal taxpayers/ labour force (%) /1	Employees generally file annual returns
Australia	20.1	10.2	17.04	1.05	2.4	167.1	Yes
Belgium	10.4	4.6	6.0	0.5	0.6	130.4	Yes
Canada	31.9	17.2	23.3	1.5	2.2	135.4	Yes
Denmark	5.4	2.9	4.6	0.15	0.4	158.6	Yes
France	60.2	27.4	34	1.2	3.6	124.3	Yes
Germany	82.5	40.0	27.9	1.0	5.1	69.8	No
Greece	11.1	4.8	10.72	0.62	0.93	223.3	Yes
Hungary	10.1	4.1	4.4	0.39	1.9	107.3	Yes
Japan	127.7	66.4	46.14	2.74 /4	2.13	69.5	No
Korea	48.1	23.4	2.2	0.34	4.0	9.4 /2	No
Malaysia	28.0	12.1	3.5	0.98	n.applic.	28.0	Yes
Netherlands	16.3	8.4	7.14	0.65	1.07	84.9	No
N. Zealand	4.1	2.1	5.1	0.40	0.62	242.9	No
Spain	42.7	20.2	37.6	1.1	2.9	186.1	Yes
Sweden	9.0	4.5	7.1	0.45	0.91	157.7	Yes
Switzerland	7.4	4.4	n.avail.	n.avail.	0.31	-	Vary
UK	59.8	29.4	28.5	0.7	1.8	96.9	No
USA	293.6	148.6	222.5	10.5	n.applic.	149.7	Yes

Notes:

/1. This indicator may exceed 100% for a variety of reasons e.g. requirement for a tax registration before having to file a tax return, taxpayers who are not members of the labour force (e.g. investors), registrations required for non-tax purposes, old/ inactive registrations.
/2. Most employees in these countries are not required to file an annual return; however, employers in these countries are typically required to report details of income paid and tax withheld along with a relevant identification number for each employee.

Sources: OECD (2007:124) (OECD in Figures: Statistics on Member Countries (2005, Supplement 1), country survey responses, 2005 World population data sheet, CIA world fact book): IRB Annual Report (2006).

As seen in Table 2.25, the USA recorded the highest number of individual taxpayers across the countries with 222.5 million taxpayers, followed by Japan, Spain and the UK. However, in terms of percentage of the total populations, Spain recorded the highest ratio with 88%, followed by the USA (76%), the UK (47%) and Japan (36%). Other countries such as Korea, Denmark and Malaysia recorded the lowest numbers of individual taxpayers in the range of less than five million.

2.5.3 Unpaid taxes

Table 2.26 illustrates a comparison among developed and developing countries in relation to unpaid tax in 2002 – 2004. Based on Table 2.26, it appears that Belgium, Greece, Mexico and Portugal had among the highest incidences of unpaid taxes from 2002 to 2004 ranging from 38% to 55% while developed countries such as the USA, France, Germany, Netherlands and Japan recorded the lowest incidences of unpaid taxes over the years.

Table 2.26: Selected Data on Unpaid Taxes 2002 - 2004

COUNTRY	Total year-end gross debt (incl. disputed debt) / net annual revenue collections (%)			Debt cases finalised in 2004 (000's)	Debt cases on hand at end-2004 (000's)
	2002	2003	2004		
Australia	9.3	8.5	8.1	1,474	1,497
Austria	-	14.1	12.7	n.avail.	102
Belgium	35.8	39.9	38.7	n.avail.	1,740
Canada	8.3	8.7	9.0	531	794
France	7.1	6.7	5.9	929	399
Germany	5.3	5.3	4.8	n.avail.	3,788
Greece	25.6	31.4	42.8	368	836
Hungary	12.3	11.5	13.4	197	192
Japan	5.6	5.1	4.4	1,866	4,370
Korea	3.0	2.7	3.6	n.avail.	704
Mexico	47.0	49.6	55.4	1,970	1,738
Netherlands	2.9	3.4	3.0	n.avail.	250
N. Zealand	6.1	6.7	6.2	456	256
Poland	11.8	10.8	11.0	n.avail.	n.avail.
Portugal	41.5	44.6	51.3	639	2,473
Slovak Rep.	-	49.5	33.0	n.avail.	n.avail.
Spain	7.9	7.8	7.8	3,625	2,142
USA	5.9	6.1	6.2	12,580	26,429

Source: OECD (2007) page 120.

2.5.4 Efficiency and administrative costs

Table 2.27 illustrates a comparison between developed and developing countries in relation to aggregate administrative costs for tax administration functions in 2004.

Table 2.27: Aggregate Administrative Costs for Tax Administration Functions (2004)
(All amounts in millions of local currency, unless otherwise stated)

COUNTRY	Aggregate administrative costs for all tax functions (incl. salaries)		Total salary costs for tax functions		Salary costs/aggregate administrative costs (%)		Total IT costs		IT costs/ aggregate administrative costs (%)	
	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Australia	2,299.9	2,438.9	1,466.2	1,528.8	63.8	62.7	412.0	420.5	17.9	17.2
Canada	3,164	2,946	n.avail.	n.avail	-	-	366	370	11.6	12.6
Japan	723,221	717,627	568,620	569,512	78.6	79.4	73,258	70,079	10.1	9.8
Malaysia	6,767	6,432	5,543	5,987	81.9	98.0	3.76	4.75	0.05	0.07
N. Zealand	289	310	168	188	58.1	60.6	67	68	23.1	21.9
UK	3,140	3,146	1,866	1,871	59.4	59.5	430	529	13.7	16.8
USA	9,400	9,760	6,850	7,120	72.9	72.9	1,560	1,600	16.6	16.4

Source: OECD (2007) page 110; IRB Annual Report (2004).

Table 2.27 indicates that in 2004, the UK recorded the lowest ratio of salary costs/aggregate administrative costs (SA) compared to other countries with 59.5%, a mere 0.01% increase from the previous year. Other countries such as Australia and New Zealand also recorded low SA ratios with 62.7% and 60.6% respectively in 2004. The table also demonstrates that two Asian countries, Japan and Malaysia recorded the highest SA ratios, particularly Malaysia with 98% in 2004. The table also demonstrates a negative relationship between (SA) and IT costs/aggregate administrative costs (IA). Countries with high IA would have had low SA, for example New Zealand and Australia recorded among the highest IA and the lowest SA.

2.5.5 Measures to promote compliance

As discussed in Table 2.2, one of the main objectives of SAS is to promote compliance among taxpayers. Therefore, this section discusses the measures taken by SAS countries to increase compliance including enforcement and penalties, tax audits and tax education.

2.5.5.1 Enforcement and penalties

Table 2.28 illustrates a comparison between developed and developing countries in relation to enforcement, penalties and interest for non-compliance.

Table 2.28: Enforcement, Penalties and Interest for Non-compliance

	Offence		
	Failure to file returns on time	**Failure to pay tax on time**	**Failure to correctly report tax liability**
United States	5% penalty for each month (or part of a month) during which there is a failure to file any returns, up to 25%. Interest accrues from the return due date, or extended due date	½% of the tax not paid, for each month (or part of month) it remains unpaid up to 25%. The rate increases to 1% per month where the account is in field status, and reduces to ¼% where taxpayer enters into a payment agreement and makes payments in a timely way. The failure to file penalty is reduced by the amount of failure to pay penalty.	The penalty ranges from 20% to 75%, according to the seriousness of the offence. Interest on the penalty amount accrues from the return due date, or extended due date. Interest on the tax deficiency starts from the return due date without regard to extensions. Underpayment interest on the tax is in addition to the interest on penalty. On the penalty, interest accrues from the date of the notice and demand or the assessment date of the penalty. The interest rate on the underpayment varies according to the type of return. For individual returns the current rate is 7% (compounded daily), and for corporate it is 9%.
Canada	5% of unpaid tax, plus extra 1% for each month of delay.	Interest calculated according to average yield of 90 day Government of Canada Treasury Bill plus 4%.	Penalty ranging up to 50% according to the seriousness of the offence.
Japan	Penalty of 5% for voluntary filing: 15% filing as a result of tax audit.	Until the date when two months have elapsed from the date following the specific due date for tax payment, either 7.3% per annum or official discount rate on November 30 of the preceding year plus 4%, whichever is lower.	Administrative sanction of 10-40% according to seriousness of offense.

		After the date when two months have elapsed from the date following the specific due date of tax payment 14.6% per annum.	
New Zealand	Penalty ranging from $NZ 50-500, according to the size of the taxpayers' net income.	Late payment penalty imposed at rate of 5% of tax payable, compounding at an additional 2% of unpaid tax and penalty for each subsequent month.	Administrative sanctions ranging from 20% (not taking reasonable care) to 150% for serious evasion/fraud. For criminal evasion offenses, a fine of up to $NZ 50,000 or imprisonment not exceeding 5 years.
Australia	One penalty unit for up to 28 days late; each unit valued at $A110. Penalty increased to two and five units for medium and large taxpayers respectively.	General interest charge imposed—calculated as the monthly average yield of 90-day Accepted Bank Bills plus 7% (daily compound).	Penalty tax ranging from 25% of tax payable (for failure to exercise reasonable care) to 50/75% (for reckless or deliberate acts). Plus a general interest charge.
United Kingdom	PIT- fine of £100 is due if filed late; additional fine of £100 if not filed within 6 months of due date; further fine of 100% of tax due if not filed within one year; and further penalties possible	Interest is due on all tax paid late at a variable rate. A surcharge of 5% is payable on any unpaid tax after 28 days from due date; a further 5% surcharge is payable if still unpaid after six months.	Additional tax up to 100% of tax payable, according to the seriousness of the offense.
Malaysia	10% of the total tax payable subject to a minimum of RM 300 and a maximum of RM 5,000.	60% of tax payable plus 10% for every repeated offence but the total penalties increased are subject to a maximum of 100%.	Fine minimum RM1,000, maximum RM10,000 plus a penalty of double the amount of tax which has been undercharged.

Source : OECD (2007) page 95 and 96; IRB Annual Report (2005).

According to Table 2.28, there are two types of penalties imposed due to failure to file tax returns across the countries. Countries such as the USA, Canada, Japan and

Malaysia impose a penalty percentage between 5% to 10% of the total tax payable, while New Zealand, Australia and the UK use the real value of money, for example New Zealand would have charged $NZ50-500 depending on taxpayer's net income. Taxpayers who under report income would be charged with a penalty range from 20% to 75% according to the seriousness of the offence in the USA, Canada and New Zealand. A serious enforcement also implemented in New Zealand to under reporters is imprisonment of up to 5 years.

2.5.5.2 Tax audits

Table 2.29 illustrates a comparison between developed and developing countries in relation to tax audit activities in 2004.

Table 2.29: Tax Audit Activities in 2004
(All monetary values in millions of national currency unless otherwise indicated)

COUNTRY	Tax audit activities (2004)			
	Number of audits completed	Value of assessments	Value of collections on these assessment	Value of assessments /total net revenue collections (%)
Australia	94,530	4,870	2,873	2.27
Greece	36,046	3,229	n.avail.	8.80
Hungary	391,143	121,589	36,719	1.95
Iceland	1,001	1,139	n.avail.	0.38
Ireland	16,321	549.6	527.7	1.29
Italy	228,337	101,138	n.avail.	23.27
Mexico	66,428	3,763	n.avail.	0.49
Netherlands	62,000	2,854	n.avail.	1.99
New Zealand	31,500	785	n.avail.	2.07
Spain	801,352	5,817	n.avail.	4.13
Sweden	7,553	3,199	n.avail.	0.27
Switzerland	9,100	n.avail.	387.5	n.avail.
Turkey	153,881	11,398	n.avail.	11.28
UK	439,349	2,559	n.avail.	0.69
USA	261,000	20,099	13,145 /2	1.16

Source : OECD (2007) page 116.

Based on Table 2.29, Italy, Spain, the UK, the USA and Turkey registered among the highest number of audits undertaken in 2004. Spain recorded 801,352 audits throughout the year followed by the UK with 439,349 audits which derived EUR5.8 billion and £2.5 billion respectively. Other countries such as Iceland, Sweden and Switzerland recorded low audits with less than 10,000 audits in 2004. Italy (Sweden) recorded the highest (lowest) percentage in terms of value of assessment/total net revenue collections with 23.27% (0.27%).

2.5.5.3 Electronic filing

Table 2.30 illustrates a comparison among developed and developing countries in relation to the usage of electronic filing in 2004.

Table 2.30: Use of Electronic Services in Taxpayer Service Delivery

	Electronic filing take-up rates in 2004 (%)		
COUNTRY	**Personal income**	**Corporate tax**	**VAT**
Australia	80	88	36
Canada	48	1.5	11
Finland	-	1	35
France	4	26	2
Germany	7	-	19
Greece	4	-	51
Hungary	2.5	3.4	6.1
Iceland	86	99	16
Ireland	62	18	13
Italy	100	100	100
Japan	n.avail.	n.avail.	n.avail.
Korea	43	92	50
Malaysia	19	23	n.avail.
Netherlands	69	n.avail.	-
N. Zealand	56	67	9
Norway	37	47	38
Portugal	24	100	83
Spain	23	17	21
Sweden	15	-	3
Turkey	30	72	70
UK	17	1	0.2
USA	47	1	n.applic.

Source: Based on OECD (2007) page 129, IRB Annual Report (2004).

Table 2.30 demonstrates that Italy, Iceland and Australia recorded the highest usage of electronic filing in 2004 for individual taxpayers. Interestingly, all personal taxpayers in Italy filed their tax return electronically while the majority of taxpayers (more than 50%) in Australia, New Zealand, Iceland and Netherlands chose to file

electronically. In contrast, in countries like France, Germany and Greece, the usage of electronic filing among individuals was low in 2004, at less than 10%.

2.5.5.4 Tax education

Table 2.31 illustrates a comparison among developed and developing countries in relation to tax education in 2007.

Table 2.31: SAS – Tax Education in Developed and Developing Countries (Year of Assessment 2007 Otherwise Stated)

	United States	Canada	Japan	Pakistan	Bangladesh	New Zealand	Australia	United Kingdom	Cambodia	Sri Lanka	Malaysia
Measure to promote principles of compliance:	/ (q)	/	/	/	/	/ (k)	/ (g)	/	/	/	/
Public relationship	/	/ (u)	/	/		/ (l)	/	/		/	/
Tax education	/ (r)	/	/			/	/	/	/	/	/
Taxpayer	/ (r)		/			/	/	/		/	
School children	/ (r)		/			/		/			
Consultation	/ (s)	/	/			/ (m)	/				
Telephone		/	/			/			/		
Facsimile		/	/								
Etc (a)	/ (t)	/				/ (n)	/ (a)				
Guidance and exam/ tax pack	/ (r)	/ (v)	/	/ (aa)			/	/			/
Counseling			/ (c)	/ (ab)							

Notes:

/ = Applicable to certain countries

(a) other forms such as advance rulings

(c) at time of tax return filed

(g) compliance programme

(k) compliance model

(l) working with community, family assistance

(m) online consultation for SME

(n) email

(q) NRP (National Research Programme)

(r) mainly online education

(s) taxpayer advocate service

(t) in CD-rom

(u) community volunteer Income Tax Programme to help tax-filer

(v) income tax and benefit package

(aa) service pack or brochures

(ab) when returns with error and possible evasion

Source: Based on Loo (2006), page 63; OECD (2007); Asian Development Bank (2008).

Many countries, as seen in Table 2.31 have implemented a variety tax education programmes, for example, the USA, Japan, New Zealand and the UK have provided tax education to their school children. In addition, the majority of the countries in Table 2.31 except Pakistan and Bangladesh also have been educating their taxpayers via various programmes such as leaflets, information through television, radio and newspapers and websites. Other methods such as through telephone and facsimile also have been implemented in Canada, Japan, New Zealand and Cambodia in order to disseminate tax information to taxpayers.

2.6 SELF ASSESSMENT SYSTEM – A CONCLUSION

In this chapter, the self assessment systems in both selected developed and developing countries has been discussed, including the missions and objectives (of SAS), principles, the problems of implementation, as well as how SAS is practiced in a variety of tax regimes. Many countries have shifted from direct assessment to SAS for good reasons. Our review from both developed and less developed countries (discussed in 2.3), evidences that the key reasons for shifting to SAS is to increase efficiency[41], allow taxpayers to declare income and calculate tax liabilities accurately

[41] This means collecting high amount of taxes at the lowest costs for the tax authority.

and to speed up tax collections that ease government cash flow. A number of strategies to achieve effective SAS have been discussed: instilling public awareness in current tax laws, emphasising fines and penalties, increasing tax audits, and education programmes for school children (i.e. in the US) are among popular and effective ways used to maximise the effectiveness of SAS regimes. Central issues such as tax education and tax knowledge, the simplicity of the system, use tax audits and role for fines and penalties are among the main issues (other than compliance) that need to be resolved to achieve effective SAS operation. In addition, in keeping with current development in technology, there is a general move towards electronic filing as part of SAS in these countries. The next Chapter (3) discusses how SAS is implemented in Malaysia in detail as the core case used in subsequent chapters to explore particular research questions and provides comparisons among countries also illustrated at the end of the chapter.

CHAPTER 3

MALAYSIAN TAX SYSTEM

This chapter discusses the tax system and its administration in Malaysia, particularly focusing on how this relates to individual income tax. The background description of the country of Malaysia, its tax administration and types of taxes that form its fiscal system are discussed in the early part of this chapter. The details of individual income tax, including definition, classes of income, the formula to derive the amount of income tax payable and the penalties for non-payment are also elaborated upon. After discussing in detail other SAS tax regimes in the previous chapter, the later part of this chapter discusses the self assessment system in Malaysia, highlighting the revenue impact on national income, a comparison between the previous Formal System (direct assessment) and SAS as well as the role of IRB in attaining SAS's goals.

3.1 INTRODUCTION TO MALAYSIA

Malaysia consists of thirteen states and two federal territories. Geographically, it is divided into two main areas known as the Peninsular of Malaysia and Borneo Island which includes Sabah, Sarawak and Labuan (more commonly known as East Malaysia).

Peninsular Malaysia is separated from the states of Sabah and Sarawak by the South China Sea. As seen on Figure 3.1, to the north of Peninsula Malaysia is Thailand while its southern neighbour is Singapore.

Figure 3.1: Map of Malaysia and its states

Source: www.malaysia-maps.com

Sabah and Sarawak are north of Indonesia (Kalimantan) in Borneo while Sarawak also shares a border with Brunei. With the land area of 329,758 sq km and a total population of 27.5 million, the largest ethnic groups in Malaysia are the Malays (65%), Chinese (23%) and Indians (9%)[42] (Department of Statistic Malaysia, 2009). In Sabah and Sarawak, there are a number of ethnic groups, each with their own unique culture and

[42] Other ethnics are 3%.

heritage including *Iban, Kadazan, Dusun, Bajau etc.* Malays who make up about 65% of the population are the predominant group, with Chinese, Indians and other ethnic groups making up the rest. Islam is the official religion but all other religions including Christianity, Buddhism and Hinduism are freely practised. Malaysia is a federal constitutional elective monarchy. The federal head of state of Malaysia is the *Yang di Pertuan Agong*[43] (the King) and the Head of Government is the Prime Minister. The system of government in Malaysia is closely modelled on that of the Westminster parliamentary system, a legacy of British colonial rule. Since independence in 1957, Malaysia has been governed by a multi-party union known as the *Barisan Nasional*[44]. Information about the geography, states and territories of Malaysia is central to this study because the analysis and results in Chapter 6 highlight the findings with respect to different states (refer section 6.5.2.5 and Table 6.11).

3.2 TAX ADMINISTRATION

Tax in Malaysia was introduced by the British into the *Federation of Malaya* in 1947 and was based on *Heasman's Report* (Singh, 1999). Initially, the *Income Tax Ordinance 1947* was gazetted as the main act but was subsequently reformed and ultimately replaced by the *Income Tax Act 1967* (ITA) which took effect on January 1, 1968. At that time, the

[43] The *Yang di-Pertuan Agong* is elected to a five-year term among the nine hereditary Sultans of the Malay states; the other four states, which have titular Governors, do not participate in the selection.

[44] Barisan Nasional is an anchor ruling party which comprises of three largest race-based parties — the United Malays National Organization (UMNO), the Malaysian Chinese Association (MCA), and the Malaysian Indian Congress (MIC) — each of which is sectarian in nature, though officially supporting racial harmony.

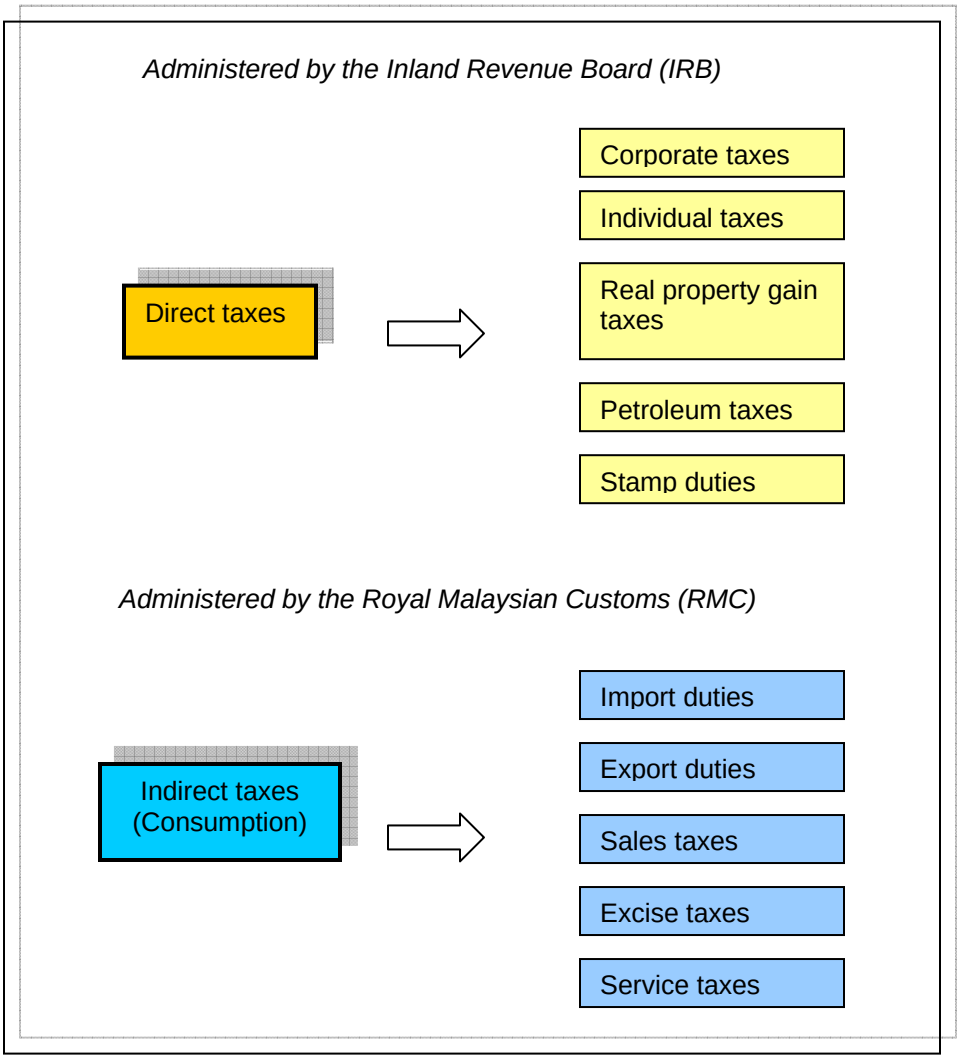
ITA consolidated the three acts of income taxation that had been enacted in 1947 and subsequently namely *Sabah Income Ordinance 1956*[45], *Sarawak Inland Revenue Ordinance 1960*[46] and *Income Tax Ordinance 1947*[47]. Before the formation of 'Malaysia' in 1963, it was formerly known as '*Tanah Melayu*'[48] which excluded Sabah and Sarawak. However on 16 September 1963, after inclusion Sabah and Sarawak, Malaysia emerged with thirteen states and two federal territories[49]. Currently, the ITA of 1967 is the main act to govern direct taxes in Malaysia including corporate and individual income tax. The *Lembaga Hasil Dalam Negeri* or the Inland Revenue Board (IRB)[50] is the tax authority which administers direct taxes in Malaysia. Other than the ITA, the IRB is also responsible for administration, assessment, collection and enforcement of real property gain taxes[51], petroleum taxes[52] and stamp duties[53]. Royal Malaysian Customs (RMC) is the government agency responsible for administering the nation's indirect tax policy. The core business is to collect tax and, in line with that, RMC's vision is to be a respected, recognised and world class Customs Administration (www.customs.gov.my).

[45] Applicable to Sabah only
[46] Applicable to Sarawak Only.
[47] Applicable to Peninsular of Malaysia only.
[48] It is a Malay language which means 'Malay Land'. *Tanah Melayu* consists of eleven states and one federal territory.
[49] The states are Perlis, Kedah, Pulau Pinang, Perak, Selangor, Negeri Sembilan, Melaka, Johor, Pahang, Kelantan, Terengganu, Sabah and Sarawak while the federal territories are Federal Territory of Kuala Lumpur and Federal Territory of Labuan.
[50] It is under the Ministry of Finance. The *Inland Revenue Board Act 1995* established on March 1, 1996 to replace Inland Revenue Department (IRD).
[51] Real Property Gain Tax 1975
[52] Petroleum Act 1967
[53] Stamp Act 1949

3.3 TYPES OF TAXES

Taxes in Malaysia are divided into two main categories, namely direct taxes and indirect (consumption) taxes. Direct taxes consist of corporate taxes and individual taxes while indirect taxes include sales taxes, import and export duties, excise duties and service tax. Figure 3.2 illustrates types of taxes in Malaysia.

Figure 3.2: Types of taxes in Malaysia



3.4 PERSONAL INCOME TAXES IN MALAYSIA

This section discusses personal income taxes in Malaysia including the definition of what is meant by 'individual', the scope of charge, the types of income, the aggregate income and the total income. Personal or individual taxation in Malaysia refers to the administration of income taxes that are applicable to self-employed (SE) and salary and wage earning (SW) individuals. Individual taxpayers in these two categories are required to file their annual tax returns based on income derived during each calendar year. Income of the SW group is normally derived from an employment and in certain cases they may also derive income from business sources[54].

3.4.1 Definition of individual

Section 2 of the ITA 1967 defines an individual as '*a natural person'* (p.15) which means that any '*unincorporated body of persons (not being a company) including a Hindu Joint Family*[55] *but excluding a partnership'* (p.12).

3.4.2 Scope of charge

With effect of the 1 January 1968, personal income tax in Malaysia was initially based on a 'worldwide scope of charge'. However, due to problems such as various technical issues, determination of source of income, and equity and fairness, in 1974 the basis of

[54] Limited to sole proprietor and partnership business.
[55] Hindu Joint Family means '*what in any system of law prevailing in India is known as a Hindu joint family or corpacenary.' (ITA 1967, p.14)*

taxation was replaced by the 'derived and remittance' basis[56] meaning tax is charged on income derived in Malaysia and on income remitted to Malaysia from outside the country[57]. However, for non-resident taxpayers, income remitted to Malaysia from outside the country would not be subject to tax. The 'derived and remittance' basis was implemented until the 'remittance' basis was removed stage by stage from the year of assessment (YA) 1995. Starting from year of assessment (YA) 2004, all income remitted to Malaysia from outside Malaysia became exempt from tax[58]. With this amendment, the scope of charge currently is 'derived basis' for all taxpayers[59].

3.4.3 Types of income

Section 4 ITA 1967 classifies an 'income' as:

a) gains or profits from a business;

b) gains or profits from an employment; (as detailed in *Appendix 1*)

c) dividends, interest or discounts; (as detailed in *Appendix 2*)

d) rents, royalties or premiums; (as detailed in *Appendix 2*)

e) pensions, annuities or other periodical payments not falling under any of the foregoing paragraphs; (as detailed in *Appendix 3*)

f) gains or profits not falling under any of the foregoing paragraphs.

[56] However, income derived from sea or air transport operations, banking and insurance businesses of resident taxpayers continues to be charged to income tax on the 'world scope basis' (ITA 1967).
[57] Section 3, ITA (1967).
[58] Paragraph 28, Schedule 6, ITA (1967), amended as at 2008.
[59] Except for income derived from air or sea transport operations, and banking and insurance businesses.

3.4.4 Basis year

Section 2 of the ITA 1967 outlined that the basis year for an individual is *'the calendar year coinciding with a year of assessment'* (p.40) i.e. the basis period for the year of assessment 2009 is 1 January 2009 to 31 December 2009. However, tax returns which report income in year 2008 are submitted within the period of March 2009 and no later than 30 April 2009. Prior to the year 2000, income tax was assessed on the preceding year basis. However, since then, and under the SAS, income tax is assessed on the current year basis. The basis of taxation of a person's chargeable income for a YA is ascertained by reference to the income derived in the basis period for that YA.

3.4.5 Aggregate income (see Appendix 4)

Section 43 of the ITA 1967 describes that the aggregate income of a person for a year of assessment shall consist of the amount of all income stated in section 4 (a), (b), (c), (d), (e) and (f) as described in subsection 3.4.3 (refer Appendix 4 – Tax return BE Form 2007). As noted in the Appendix 4 page 2, the aggregate income is the accumulation of income C1 to C6.

3.4.6 Total income (see Appendix 4)

Section 44 of the ITA 1967 describes that the total income of a person for a year of assessment shall consist of the amount of aggregate income less donations and gifts as follows:

1) Gift of money to the Government or approved institutions (Section 2);
2) Gifts in terms of artefacts, manuscripts or paintings (Schedule 4 or 4B);
3) Gift of money to library or for library facilities (Section 6);
4) Gift of money of benefit in kind for disable persons (Section 8,9,10,11,11A,11B or 11C);
5) Gift of money or medical equipment to any healthcare facility approved by the Ministry of Health;
6) Gift of money or contribution in kind for any approved sports activity; and/or
7) Gift of money or contribution in kind for any project of national interest approved by the Minister of Finance.

If a married taxpayer chooses joint assessment, the spouse's total income is included in calculating the total income being assessed. In Malaysia married couples can opt to be assessed separately or under 'joint assessment'. If separate assessment is chosen, each partner has to complete a separate tax return and make a payment separately. All income of a married woman is automatically assessed separately from her husband and no election is required. The wife however has to declare her income on the tax return issued to her husband just for record keeping; tax liabilities are not calculated in husband's tax

return (refer Appendix 4). A separate notice of assessment will be issued to her in her own name.

Prior to YA 2001, a wife whose husband had no income was given a personal relief of only RM8,000 if she elected for a separate assessment. On the other hand, a husband whose wife had no income and who was joint-assessed would enjoy a relief of RM11,000, that is, a personal relief of RM8,000 and a wife's relief of RM3,000. However, a full relief of RM11,000 was enjoyed by both husband and wife if the wife elected for a joint assessment under the name of the husband who had no income, that is, a personal relief of RM8,000 given to the husband who had no income and the wife's relief of RM3,000.

With effect from YA 2001, in order to accord equal tax treatment to individual taxpayers without gender bias, it was proposed that a husband who elects to be assessed under the wife's name be allowed a personal relief of RM8,000 and a husband's relief of RM3,000. Consequently, the legal provisions regarding tax treatment for husbands and wives are amended such as: i) to allow the husband to elect for joint assessment under the wife's name and be given husband's relief; and ii) to give husband's rebate equivalent to the wife's rebate. (IRB Annual Report, 2001)

In contrast, if joint assessment is made, the wife or the husband who both have total income can elect to have their total income combined, and can opt to be assessed either in

the name of the husband or the wife, if they find that the combination of income is more beneficial in terms of lower tax liability compared to a separate assessment. The husband can elect to be assessed jointly with only one wife. Legally, a husband can be married to up to four wives at the same time, however, for tax treatment, the IRB has ruled that only one wife (any wife) would qualify for joint assessment; the other wives have to be assessed separately (IRB, 2008). Where the husband or wife has no total income, the assessment will be raised on the spouse who has the total income. He or she will also be entitled to relief under a combined assessment.

3.4.7 Chargeable income (see Appendix 4)

Section 45 of the ITA 1967 explains how the chargeable income of a person for a year of assessment shall consist of the amount of total income less deductions as per Table 3.1:

Table 3.1: List of deductions for YA 2009

	Deductions	Restricted to RM
1.	Individual and dependant relatives	8,000
2.	Medical expenses for own parents	5,000
3.	Basic supporting equipment for disabled self, spouse, child or parent	5,000
4.	Disabled individual	6,000
5.	Education fees (self) for acquiring law, accounting, Islamic financing, technical, vocational, industrial, scientific or technological skills or qualifications	5,000
6..	Medical expenses for serious diseases for self, spouse or child	5,000
7.	Complete medical examinations for self, spouse or child (restricted to RM500)	
8.	Purchase of books/magazines/journals/similar publications (except newspapers and banned reading materials) for self, spouse or child.	1,000
9.	Purchase of personal computers for individual (deduction allowed once in every three years)	3,000
10.	Net deposit in *Skim Simpanan Pendidikan Nasiona*l (total deposit in 2009 minus total withdrawals in 2009)	3,000
11.	Husband/wife/Payment of alimony to former wife[60]	3,000
12	Disabled husband/wife	3,500
13	Child under 18 (each)	
14	Child 18 and above and studying in Malaysia (each)	4,000
15	Child 18 and above and studying overseas (each)	1,000
16	Disabled child	5,000
17	Life insurance and provident fund	6,000
18	Education and medical insurance	3,000

In order to qualify any deduction in Table 3.1, a taxpayer must make a claim.

3.4.8 Tax payable (see Appendix 4 Part E)

The amount of tax payable in a year of assessment is derived according to the following progressive rates as at YA 2009:

[60] According to Islamic law, a husband is allowed to marry up to four wives in a time. However, as for tax treatment, only a wife will qualify for a relief.

Table 3.2 Individual tax rates YA 2009

Category	Range of chargeable income (RM)	Computation (RM)	Rates	Tax (RM)
A	0 – 2,500	First 2,500	0	0
B	2,501 – 5,000	Next 2,500	1	25
C	5,001 – 10,000	First 5,000 Next 5,000	 3	25 150
D	10,001 – 20,000	First 10,000 Next 10,000	 3	175 300
E	20,001 – 35,000	First 20,000 Next 15,000	 7	475 1,050
F	35, 501 – 50,000	First 35,000 Next 15,000	 12	1,525 1,800
G	50,001 – 70,000	First 50,000 Next 20,000	 19	3,325 3,800
H	70,001 – 100,000	First 70,000 Next 30,000	 24	7,175 7,200
I	100,001 – 150,000	First 100,000 Next 50,000	 27	14,325 13,500
J	150,001 – 250,000	First 150,000 Next 100,000	 27	27,825 27,000
K	Exceeding 250,000	First 250,000 For every next ringgit	 27	54,825

Source: http://www.hasil.gov.my/lhdnv3e/individuIndex.jsp?process=21000&menu=13&expandable=1&pg_title=Income%20Tax%20Rate

Total tax payable derived from Table 3.2 must be deducted with the following tax rebates:

a) RM350 tax rebate for individual (if chargeable income no more than RM35,000) (Appendix 4 E4);

b) RM350 tax rebate for husband/wife (if chargeable income no more than RM35,000 and payment of alimony to former wife being made – see Table 3.1 no 11. (Appendix 4 E5);

c) Amount of *zakat*[61] payment. The amount of *zakat* rebate is restricted to the amount of total income tax. If the amount of *zakat* exceeds this amount, the exceeded amount cannot be carried forward. (Appendix 4 E5);

d) Fees/levy paid by a holder of an Employment pass, Visit pass or Work pass. (Appendix 4 E7).

Then, total tax charged (Appendix 4 E9) is deducted with Section 110 – tax deduction for dividends (Appendix 4 E10), Section 110 - tax deduction for others (Appendix 4 E11) and Section 132 and 133 – tax relief for double taxation agreement (Appendix 4 E12 and E13).

3.4.9 Penalty

Table 3.3 illustrates penalties for individual taxpayers.

[61] *Zakat* or 'alm' is a compulsory payment for Muslims only. In Malaysia, tax is compulsory but not *Zakat*. The rate is 2.5% of any income, shares, gold, properties and savings (www.zakat.com.my). Zakat amount is deductible (tax rebate) in the particular YA (refer column E6 in Appendix 4). It serves principally as the welfare (wealth or income distribution) contribution to poor and deprived people in the Muslim society. Unlike tax, it is administered by the state government. (IRB 2005, Public Ruling No. 5/2005)

Table 3.3: Penalties for individual taxpayers in Malaysia 2008

Sections in Income Tax Act 1967	Offences	Penalties
112	Failure to furnish return or give notice of chargeability	Fine minimum RM200, maximum RM2000 or to imprisonment not exceeding six months or both
112	Incorrect return (omitting and understating income, giving any incorrect information in relation to any matter affecting chargeable income)	Fine minimum RM1,000, maximum RM10,000 plus a penalty of double the amount of tax which has been undercharged.
114	Wilful evasion (omitting any income which should be included, making a false statement or entry, giving a false answer (orally or in writing) to a question asked, preparing or falsifying a book of accounts or other false records, fraud)	Fine minimum RM1,000, maximum RM20,000 or to imprisonment not exceeding three years or both plus a penalty of treble the amount of tax which has been undercharged.
115	Leaving Malaysia without payment of tax	Fine minimum RM200, maximum RM2,000 or to imprisonment not exceeding six months or both.
116	Obstruction of offices (refusing to permit the Director General (DG) to investigate, failure to produce any documents, refusing to answer any question asked)	Fine minimum RM1,000, maximum RM10,000 or to imprisonment not exceeding one year or both.
117	Breach of confidence (communicating classified materials to another person, allowing another person to have access to classified materials)	Fine not exceeding RM4,000 or to imprisonment not exceeding one year or both.
118	Offences by officials	Fine not exceeding RM20,000 or to imprisonment not exceeding three years or both.
119	Unauthorized collection	Fine not exceeding RM20,000 or to imprisonment not exceeding three years or both.
119A	Failure to keep records	Fine minimum RM300, maximum RM10,000 or to imprisonment not exceeding one year or both.
120	Other offences	Fine minimum RM200, maximum RM2,000 or to imprisonment not exceeding six months or both.

Source: Income Tax Act 1967 (emended 2008) page 230 – 235.

Having discussed how personal income taxes in Malaysia are administered, the following section illustrates the implementation of SAS in Malaysia in further detail.

3.5 SELF ASSESSMENT SYSTEM (SAS)

This section discusses how SAS is implemented in Malaysia, including measures taken by the IRB before implementation, the operation of SAS and some measures taken by the IRB to achieve the objectives of SAS.

When Malaysian income tax emerged on January 1, 1968 Malaysia adopted an Official Assessment System (also referred to as the 'Formal System'), whereby taxpayers were required to submit their returns within 30 days from the date of service. Under the Formal System, taxpayers received their annual tax returns from the IRB, normally in March each year. It was the taxpayers' statutory duty to declare all the necessary particulars pertaining to their income and expenses for that particular year of assessment and to submit the completed returns to the IRB no later than April 30th, every year (IRB, 2009). Under the Formal System, it was assumed that taxpayers did not possess the necessary knowledge to compute their tax payable (Kasipillai, 2000). If a taxpayer was doubtful as to whether a certain expense was allowable under the ITA, he made a claim to be considered by the Revenue authorities. (In contrast, under self assessment, a taxpayer has to ensure that an expense is deductible before making a claim in his or her return).

The critics of the Formal System called for tax reform in Malaysia (Kasipillai, 2000). The economic turmoil starting in 1998 required the IRB to make an aggressive and extensive assessment of the current tax system (Formal System). The Formal System was considered to be time consuming, costly, inefficient and complex to administer (IRB Annual Report, 2001). In addition, it encouraged late tax collection and placed a huge demand on human resource, hence the IRB had been flooded with documents and burdensome work since the introduction of the tax system in Malaysia in 1967 (IRB Annual Report, 2001). The nature of Formal system itself required a high volume of returns to be processed resulting in a *'backlog of unassessed cases, and delays in processing and issuing of returns'* (Loo, 2006: 25). In addition, it was argued that the Formal System did not encourage voluntary compliance as compared with SAS. The tax responsibility gap between taxpayers and tax authorities was therefore not in balance. Not only that, a weak enforcement due to lack of qualified staff and shortage of staff to carry out assessment activities added to the administrative problems (Kasipillai, 2000, 2002). Thus, the introduction of SAS in 2004 for individual taxpayers was an effort to enhance tax administration in Malaysia in line with global tax administration enhancement. Some neighbouring countries like Indonesia, Thailand and Singapore had turned to SAS earlier. As mentioned in Chapter 2, the majority of countries agreed that the main objective of SAS is to increase voluntary compliance, to minimise administrative costs, to increase efficiency and to lessen the IRB burden. Some unethical attitudes emerged in the Formal System such as failure to lodge tax returns and some individuals not registering as taxpayers (Kasipillai, 2002).

A new system, known as the Self Assessment System (SAS), was implemented stage by stage as follows:

Table 3.4: Stage of implementation SAS

Taxpayers Group	Year of Implementation
Companies	2001
Business, partnerships and cooperatives	2003
Salaried individuals	2004

Source: Inland Revenue Board Annual Report 2004.

The IRB have now experienced nine years of companies' SAS (2001 to 2009). Analysis of the effectiveness of the SAS has shown a positive effect since its implementation. In year 2002 to 2006[62], tax collection from companies has increased at an average rate of 12.78% per year (IRB Annual Report, 2002). The legislation, tax services and education and the enforcement of the law are some important elements which led to the improvement of tax collection for companies. The computer system implemented to handle corporate and individual taxation has been fully developed and used from the 1 January 2003 and 1 January 2004 respectively (IRB Annual Report, 2004). The IRB has more company information that can be used for the purpose of assessing the rate of compliance or assisting the government in drafting the country's taxation policies. The new computer system has served its function relating to generating and processing of forms, assessment and collection, particularly for individuals. Further details about electronic services are discussed in 3.5.3.

[62] Latest IRB report covers until year 2006.

Tax audits are among the new applications developed under the SAS. The computer application selects cases to be audited based on scoring systems produced through the analysis of data. The management of audit activity is also implemented using the computer system so that a more effective monitoring of audit activity can be done (IRB Annual Report, 2006). Table 3.5 illustrates the amount of contribution from direct taxes to the federal government's revenue 2001 – 2006.

Table 3.5: Contribution of direct taxes to the federal government's revenue 2001 – 2006

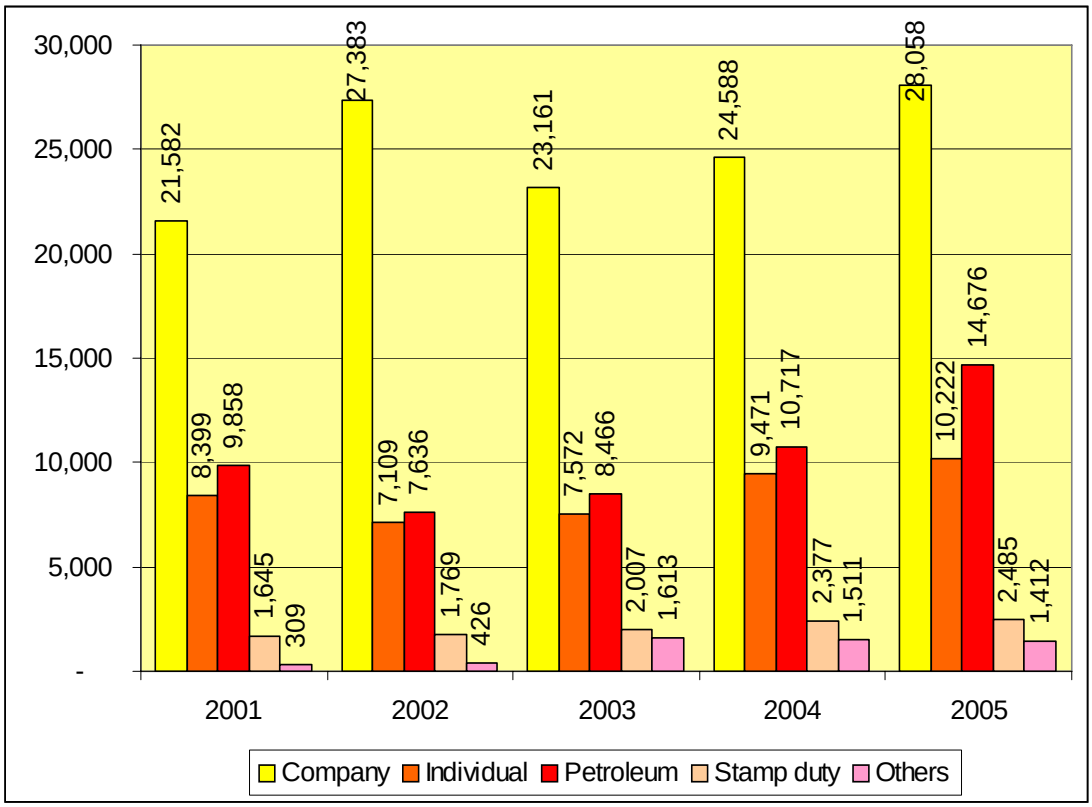
Year	Federal government's revenue		Collection of direct taxes*		Percentage of federal government's revenue
	RM billion	£ billion#	RM billion	£ billion#	
2001	79.57	12.34	41.79	6.48	52
2002	83.52	12.95	44.23	6.86	53
2003	92.61	14.36	42.82	6.64	46
2004	99.40	15.41	48.63	7.54	49
2005	106.30	16.48	56.85	8.81	53
2006	120.63	17.70	65.74	10.19	55

Source: IRB Annual Report 2006 , p. 20
**The amount of direct taxes based on actual figures collected by the IRB before deducting allocation for tax refunds.*
 # Exchange rates £1 = RM6.45

According to Table 3.5, throughout the years, the average direct tax contribution in relation to the total federal government's revenue is approximately 50%. Even though the ratio is steady, the amount of tax collection had increased particularly in 2005 (and even

bigger increase in 2006 too), a significant increase from RM48.63 billion to RM56.85 billion. However, the upward trend (tax collection) did not occur in 2003, which showed a small decrease of approximately RM1.5 billion.

Figure 3.3: Revenue collection by main direct tax category (RM million) year 2001 to 2005



Source: IRB Annual Report 2005, page 145.

Figure 3.3 demonstrates revenue collection by main direct tax category for the years 2001 to 2005. Corporate taxes[63] are the main direct tax contributor to the federal government's revenue followed by petroleum tax; individual income taxes are third, with average

[63] Corporate tax rate for YA 2001 - 2006 and 2008 is 28%. 2007 = 27%.

collection ranging from RM7.1 billion to RM10.2 billion throughout the years. A significant decrease happened in 2002, where amounts fell from RM8.4 billion to RM7.1 billion. Starting from 2003 personal tax collection steadily increased every year and recorded the highest collection in 2005 at RM10.22 billion. While individual tax collection fell in 2002 (compared to 2001), corporate taxes recorded a significant increase from RM21.5 billion to RM27.4 billion. However, this figure decreased to RM23.2 billion in the following year before maintaining the upward trend in the following years.

3.5.1 Actions taken by IRB before implementing of SAS

The challenge faced by the IRB to implement an SAS and accomplish their three fold objectives was more intense due to a large number of individual taxpayers and the various categories involved (employment, business–sole proprietor, cooperatives, trusts, societies and estates) that were to be brought into the SAS. In the year 2003, a year before SAS was implemented for individuals, the categories involved approximately 3.5 million[64] taxpayers as at year of assessment 2003 (IRB Annual Report, 2003). Being aware of this challenge, the IRB drafted an implementation strategy to ensure that SAS could be implemented smoothly and effectively.

Throughout 2003, the year before SAS was implemented for individual taxpayers, the IRB persisted with the planning to draft tax compliance procedures in line with the SAS environment. Among the strategies introduced were:

[64] Out of this figure, a total of 1,959,183 relate to individual taxpayers.

1) Married woman were required to file the tax return separately beginning in the year of assessment 2004.
2) Tax returns were still to be issued as a service to taxpayers and as part of IRB's commitment to ensure all taxpayers did not neglect their responsibilities of reporting their income and expenses including deductions and rebates.
3) The tax returns were redrafted in line with the need to self-compute tax and report it in the stipulated forms. For individuals, Form BE was introduced for residents who had employment income but did not have business income while Form B was created for residents who only had business income such as sole proprietors, partnerships and estates. Individuals who were non-Malaysian residents must file Form M.
4) All tax returns were to be processed centrally at the IRB Processing Centre in Pandan Indah, Kuala Lumpur. This was to enable more efficient processing of forms.
5) An extensive tax education programme with regard to the tax computations and filing procedures was implemented.

3.5.1 Understanding the self assessment system

For Malaysia, the introduction of SAS was an experiment at the early stages of implementation.. The introduction of a self assessment basis of taxation involved a substantial shift of responsibility on to the taxpayers in terms of their compliance

obligations. The obligation has now been placed firmly on them to understand the law and apply it to their own situation. It is up to the taxpayers to compute the tax that they owe, based upon the information they have provided on their taxable income and allowable expenditure. A notice of assessment[65] is no longer issued under SAS. The tax return furnished by the taxpayer is deemed to be a notice of assessment. Under SAS, the IRB was now involved in an expanded programme of checking and verifying tax returns on a post-assessment basis, particularly by way of tax audits and the implementation of a penalty system to enforce compliance with tax law. This programme allows revenue officials to 'inquire into returns' in the six years that follow the filing period. They will also be able to demand a taxpayer produce records that they may 'reasonably require' for them to verify within a six years period (IRB, 2009). Table 3.6 provides a brief comparison of the Formal System procedures and the Self Assessment System procedures for individual taxpayers.

[65] Also known as Form J. It contains all income, deductions, reliefs and total tax payable.

Table 3.6: A brief comparison on the Formal System procedure and the Self Assessment System for individual taxpayers.

Activity	Formal System	Self Assessment System
Filing	- The IRB will issue forms. - Taxpayers need to report income and other information. - Forms must be returned within 30 days from the date of issuance. However, in normal practice it must be submitted no later than April 30, each year. - The taxpayers must produce documents such as income statements and receipts for claiming deductions.	- The IRB will issue forms - Taxpayers need to need to report income and other information as well as computing what tax is payable. - Forms must be returned within 30 days from the date of issue.. - The taxpayers need not produce other documents except dividend vouchers for repayment cases due to credit claims on dividends. Documents pertaining to computation of tax must be kept (for seven years) and only need be produced upon request by the IRB.
Assessment	- All forms received must be checked before raising the assessment. - The Director General raises the assessment and notice of assessment issued.	- The Director General is deemed to have raised the assessment based on the taxpayers' computation. The form is also deemed to be the notice of assessment. - Notice of assessment will not be issued.
Payment of tax	- The estimated tax must be paid in accordance with the notice issued by the Director General. - Tax which has been assessed must be paid upon the assessment notice being sent to the taxpayer.	- Tax liability for individuals must be paid either by instalments in accordance with the notice of instalments as stipulated in the Income Tax Act 1967 (normally through monthly salary deduction know as Scheduled Tax Deduction (STD)) or payment in full by cheque or direct deposit to IRB's bank accounts.
Compliance	- Audit activities are mostly desk audits.	- Audit activities will be carried out to ensure that taxpayers comply with all tax legislations. Field audits are made more

	extensive so that IRB officers have better understanding of business activities and thus are able to implement provisions of the laws fairly. - Educating the taxpayers is also part of the audit objectives.

Source: IRB Annual Report 2003 page 27.

3.5.2 SAS – Contribution to total revenue

In 2003, although nearly 3.5 million tax returns were assessed, they represented only 67 per cent of returns lodged (IRB Annual Report, 2003). In the first year of SAS for individuals the IRB collected RM9.471 (£1.662) billion as compared to only RM7.572 (£1.328) billion in the preceding year in which the Formal System was still in operation (IRB Annual Report, 2004). The IRB also reported that total income tax collections increased from RM29.1 (£5.1) billion in 2000 (under the Formal System) to RM41.7 (£7.3) billion in 2001. The increase was attributable to the implementation of SAS (IRB Annual Report, 2002). However, it is inevitable that the increase in income tax collections could have been at least partly due to other factors like the improved economic situation after the 1997/1998 economic crisis in Asia or it could have been that the taxes collected were based on estimated tax payable under the newly introduced current year basis of assessment, and the IRB might have had to refund the excess collections. Although the significant increase in collection in 2001 (43.31%) was not empirically evidenced solely by the introduction of SAS, at least SAS had a positive

impact upon total revenue. Table 3.7 illustrates Direct tax collection pre and post SAS from 1998 to 2006.

Table 3.7: Direct tax collection pre and post SAS (1998 – 2006)

Period	Year	RM billion	Increase %
	1998	29.97	
	1999	27.04	(9.78)
	2000	29.16	7.84
Post SAS	2001*	41.79	43.31
	2002	44.23	5.84
	2003**	42.82	(3.19)
	2004***	48.63	13.57
	2005	56.85	16.90
	2006	65.74	15.64

Source: IRB Annual Report 1998 - 2006
** SAS for companies begins*
*** SAS for business, partnerships and cooperatives begins*
**** SAS for salaried individuals begins*

3.5.3 Measures taken by IRB to achieved SAS's objectives

SAS was a big endeavour for the IRB in the early stage of the process. The outcome of SAS would affect its credibility, capability and image. Junainah (2002) in her case study in northern part of West Malaysia (Sabah) found a multi-dimensional perception of SAS. The study was to identify taxpayers' perceptions of SAS compared to the Formal System and found that the majority (68%) of taxpayers were ready and willing to accept the changes but were afraid of their capability to complete tax returns on their own. Moreover, the study also revealed that taxpayers argued it was the responsibility of the IRB to administer tax in Malaysia. They (taxpayers) thought that the IRB should do the

job (complete, calculating tax etc), not the taxpayers. However, the study was not a national study and the results could not be generalised. Thus to defend against people's negative perceptions, the IRB implemented a number of measures in their attempt to successfully implement in SAS. The next section reviews these measures.

The IRB has been implementing various programmes to enhance its capacity and credibility. Issues discussed in Chapter 2 such as tax education programmes, audits and investigations and enhancing the simplicity of tax returns and tax systems have all been considered.

a) Improving voluntary compliance

Based on the IRB Annual Report 2005 (p. 133), the IRB admitted that with the introduction of SAS, 'the formal function of assessing tax has been reduced' and the burden of tax has partly shifted to taxpayers. However, the significant reduction of assessment by the IRB does not necessary mean that IRB does not play a significant and important role in SAS. The process of ascertaining taxpayers' compliance with current tax laws and legislations has become more crucial as the IRB has to ensure that taxpayers must constantly fully comply with tax laws. The IRB is continuously improving its mechanisms for increasing voluntary compliance. There are four main measures emphasised by the IRB: 1) street surveys, 2) tax audits[66], 3) Schedular Tax Deduction

[66] Under SAS, tax audits become main focus of IRB branches in order to prevent tax evasion.

(STD)[67] audits and 4) investigations. 'Street surveys' is a programme carried out through visits by officials to premises in various locations in order to collect additional information, educate and provide advisory services, report cases fit to be selected as desks audits and external audits, enhance the development of Unit "Q"/Data Warehouse[68] and, finally, in order to broaden the government agencies' access to information. The role of a street survey is to broaden the tax base by carrying out tax compliance checks in every business sector covering major business areas including night markets held on week days.. In 2006, IRB visited 83,207 premises compared to 74,829 in 2005 (2004 - 60,848) (IRB Annual Report, 2005; 2006: 49). This represents an increase of 11.20% in the number of taxpayers' premises reviewed.

b) Expansion of tax base

As the number of taxpayers increases, the amount of tax collected will almost certainly increase as well. Therefore, the IRB actively seeks to expand its tax base by identifying potential taxpayers via various means, including through street surveys, economic zoning, publicity, tax education, customer service programme and introduction of IRB's Unit 'Q'/Data Warehouse. Street surveys have increased the number of new registered business taxpayers significantly. In 2005, a total of 74,829 business premises were visited

[67] Under STD, employers are encourage to deduct and remit the tax portion during their monthly salary payment according to The Income Tax Rules (Salary Deduction) 1994 which means taxpayers receive net pay after tax. The STD is similar to PAYE in the UK.

[68] This unit gathers all taxpayers' information to ensure that information such as current address, demographic and history of income and tax payable is correct, and is specifically designed to manage taxpayer's information systems and become part of an important database (IRB Annual Report, 2005).

and evaluated compared to 60,648 in 2004. As a result, 10,178 new files were successfully registered in 2005 compared to 8,704 in the previous year (IRB Annual Report, 2005). The establishment of Unit Q can facilitate the detection (non compliance indicators) mechanisms by providing taxpayers with current information and at the same time cross-checking the information provided by taxpayers. For instance, if any abnormal income or tax payable is detected from the checking the system will be instantly notified and actions such as fraud detection and investigations will be implemented accordingly.

c) Customer service

In accordance with IRB's motto; "Helpful, friendly and satisfying", various initiatives were developed, particularly to assist and facilitate individual taxpayers in fulfilling their tax obligations. Since SAS is highly reliant on taxpayers' responsibilities and honesty, this kind of service is really important, helpful and could reduce the barriers between the taxpayer and the tax authority. Programmes such as SAS Education and Publicity[69], and Taxpayer Service Months (TSMs)[70] are continuously implemented in order to facilitate taxpayers, grow public awareness and also increase voluntary compliance. Since TSM began, encouraging responses have been received about its role in developing voluntary compliance – a total of 1,210,223 visitors were recorded in 2005 compared to 590,419 in 2004 (IRB Annual Report, 2005). In addition to having such a good programme as TSM, IRB also expanded its customer service programme by introducing Revenue Service

[69] Education and publicity was made through counters in shopping complexes, advertisements on television, newspapers and radio (refer 3.5.3 (f)).
[70] TSM is held from February to June every year.

Centres (RSCs) in Perak, Selangor, Johor, Sabah (two centres), Sarawak (two centres) and Terengganu. These centres were set up to expand its services into smaller districts. Among the services offered at these RSCs are assessment and payment of stamp duty; taxpayers can also check their income tax status and obtain tax advisory services.

d) Electronic services

To speed up tax assessments and related processes, IRB has enhanced its collection system by upgrading the electronic service. To provide further assistance to taxpayers, IRB collaborates with various financial institutions like CIMB Bank[71] (formerly known as Bumiputra-Commerce Bank Berhad) and Public Bank Berhad (PBB)[72] so that taxpayers can pay their income tax over the counter or via online banking. In addition to these collecting agents, IRB is actively promoting the use of E-filing - one of the most prominent and important mechanisms in increasing efficient and error-free filing. In 2006, a total of 113,543 taxpayers were using this system (IRB Annual Report, 2006). Currently, e-filing is only an alternative method of filing tax returns and no incentives are given to those taxpayers who use this service (other than greater convenience to the taxpayer as it is easy to use, accurate and secure). An integrated information system was developed in line with SAS. The system covers payment, processing assessments, amending assessments, auditing, investigating and detecting. These innovations (particularly as they are part of an electronic service) has positioned the IRB a step ahead when compared to neighbouring countries like Indonesia (IRB Annual Report, 2005) and

[71] www.cimbbank.com.my
[72] www.pbebank.com.my . CIMB and PBB are leading financial institutions in Malaysia.

has made it competitive with developed countries like the UK and the US in administering tax systems especially in relation to SAS.

The IRB has also developed a website that offers a range of information, particularly for direct taxes administration (www.hasil.gov.my). Taxpayers who have problems regarding their tax matters can browse the website to seek solutions or communicate with the tax officials through emails or telephone. On the front page of the website, taxpayers can browse four main features/applications regarding individuals' tax administration, namely e-filing, e-payment, e-register (for new taxpayers) and a calculator to determine Scheduler Tax Deduction. Starting from 16 March 2009, taxpayers can also update their tax status (e.g total tax credited) through mobile phones (via short message services/text) by paying as low as RM0.35 (£0.06) per text message received.

e) Enhancing taxation procedures and officers' skills

IRB realises that efficient tax procedures and competent staff are important in managing tax in a borderless environment (IRB Annual Report, 2005; 2006). Efficient tax procedures can increase productivity and the collection of direct taxes (Junainah, 2002). A continuous staff training and development programme can add to the value, quality and professionalism of the officials in dealing with various aspects of problems, cases and taxpayers' behaviour. Recently, human resources development has become a major focus of IRB although it involves a significant cost. For example, in order to produce officers who are competent, professional, knowledgeable, skilled and disciplined, the IRB has

planned and implemented special training programmes which are conducted by professional consultants for officers at every level to ensure that they understand and are equipped to carry out their duties according to current needs (IRB Annual Report, 2006). In addition, training and courses are not limited to intermediate and high level officials, but also involve clerical and supporting staff so that each level of personnel has the confidence and knowledge to deal with their job and responsibilities. IRB also constantly evaluates other countries' tax administration development to benchmark its capacity and ability.

In 2006, a total of 77 officers attended various conferences, seminars, workshops and international training courses held in Brazil, Cambodia, France, Mauritius, Nepal, New Zealand, Pakistan, Singapore, South Korea, Switzerland, the Netherlands, Taiwan, Philippines, the United Kingdom and the United States of America (IRB Annual Report 2006: 56). The aim of the training programmes was to increase self confidence, develop leadership qualities, increase mental and physical resilience and instil high discipline among IRB's staff. In 2001, the IRB also introduced Basic Training for Voluntary Forces Cadets in collaboration with the 515th Voluntary Forces Regiment of the Malaysian Armed Forces. The training includes marching, physical exercises, shooting and self-defence (IRB Annual Report, 2006: 58).

Current taxation issues such as transfer pricing, e-commerce and cross-border trading have also called for attention. In such areas, IRB has employed foreign agencies to train its staff in collaboration with various international professional organisations such as the Federal Law Enforcement Centre (FLEC), Japan International Corporation Agency (JICA), Organization for Economic Coorporation and Development (OECD) and also The Commonwealth Association of Tax Administrators (CATA) (IRB Annual Report, 2006).

f) Taxpayer education

Tax education or tax knowledge is important in SAS. The nature of SAS in Malaysia requires sufficient knowledge of current tax laws and regulations in order to compute actual income reporting, make true deductions and reliefs claims and finally, make accurate tax calculations and payments. Various programmes have been implemented by IRB to facilitate taxpayers so they can acquire and practise the knowledge. Unlike the US tax system which educates and exposes tax laws and regulations from a very early age through the implementation of school education programmes, (IRS, 2008), Malaysian tax authorities educate taxpayers informally via a 'Guidebook[73]' posted to taxpayers together with tax returns every year since SAS began. It is then up to the taxpayers' initiative to read the booklet and complete tax returns accurately. However, sending only a booklet to taxpayers has raised some issues: does the booklet provide enough information to

[73] It is a 79-page (in YA 2007) booklet containing various instructions and guides for individual taxpayers on how to complete tax returns, including tax rates tables, examples and how to calculate tax payable.

sufficiently ‘educate’ taxpayers? If taxpayers abandoned the booklet and incorrectly completed the tax return unintentionally, should they be penalised? If so, is it fair being penalised due to insufficient and improper education given by the tax authority?

Also, the tax education programme is implemented through briefings, workshops and talks held at all IRB branches and focused on how to complete the tax returns. Interview sessions on the topic of taxation were also aired on radio and television from time to time. Such sessions were used to disseminate the latest information to taxpayers as well as to other viewers and listeners. Publicity through television and radio is one of the most effective communication mediums for conveying tax information (IRB Annual Report, 2006). Apart from these measures, the IRB also organised essay competitions among school children and published articles in tax magazines and local newspapers (IRB Annual Report, 2006).

Taxation information was also posted on the official IRB website (www.hasil.org.my) (refer 3.5.3 (d)) to allow the public access to basic information on taxation and to find out about the schedule of various service programmes provided by the IRB. In 2006, the number of visitors to the website increased by 28.75% and number of e-mails received from taxpayers increased by 52.42% (IRB Annual Report, 2006).

In addition, the IRB also organised a road show from place to place to deal face to face with taxpayers. For instance, a counter is now open in shopping complexes and offices

within 'taxpayers' month[74]'. It seems that tax education, especially for individuals, is seasonal. This potentially poses the need for a discussion regarding the effectiveness of tax education programmes conducted by the IRB.

g) Enforcements

Apart from discussions in section 3.5.3 (a) to (f), the IRB also designed their audits and investigations programmes to increase compliance in the SAS (IRB Annual Report, 2006; 22). In 2006, 34,898 audits were performed compared to 25,600 audits in 2005. Total collections of RM1,206.09 million (2005: RM773.94, an increase of 55.84%) in additional taxes and penalties were recorded (IRB Annual Report 2006: 22). Investigation and prosecution programs were further implemented through law enforcement with the aim of preventing tax non-compliance. Based on the IRB Annual Report 2006, in 2006, investigations brought in an additional RM903.23 million in taxes and penalties, compared to RM763 million in 2005. Enforcement programmes and actions were also taken against taxpayers who failed to settle their taxes on time. In 2006, the IRB recorded an increase in civil suits with 8,722 new cases filed in court and tax arrears amounting to RM771.08 million. 6,934 cases were resolved in 2006, involving RM631.85 million in tax collections. In extreme cases, taxpayers were prevented from leaving Malaysia until the amounts owed to the IRB were settled. In 2006, a total of 12,414 taxpayers were charged under these provisions, compared to 10,933 in 2005,

[74] Every year in April, for about two or three days in each location, tax officials will open a counter to facilitate taxpayers who have questions and problems and will give advisory services to taxpayers.

which netted RM226.05 million in tax arrears compared to RM281.27 million the previous year.

The measures discussed in this section are important in order for the IRB to achieve the objectives of SAS. Various programmes have been designed to increase compliance and revenue collections including expanding the tax base, placing an emphasis on customer services, developing electronic services and a website, staff development and tax education programmes. Enforcements such as audits and investigations, penalties, restrictions from leaving Malaysia and civil suits are also implemented by the IRB in order to prevent tax non-compliance activities and instil taxpayers' awareness of their responsibilities.

3.7 CONCLUSION

After 33 years[75] of the Formal System, IRB has developed a good knowledge and experience of problems and solutions as well as developing tax laws, boosting tax collections and the most important and difficult part – building an understanding of Malaysian taxpayers' behaviour. These lessons, of course, have been used as the main input to plan and put SAS into operation. The implementation and successful operation of SAS in Malaysia is a big challenge, not only to the IRB but also to taxpayers. Unlike the previous system, SAS requires taxpayers to have sufficient tax updates so that they can

[75] From 1967 to 2000.

be good participants and complete their tax return accurately. Failure to do so results in fines and perhaps a prison sentence for at least three months (see Table 3.3).

Some taxpayers are not satisfied with SAS because they have to do more tasks than previously (e.g. completing tax returns and calculating tax liabilities) while the IRB only collect the money and administer the process. Taxpayers may perceive that SAS no longer preserves the equity and fairness principles and may feel that the tax compliance costs have been fully shifted to them as taxpayers. However, from the tax administrators' perspective, SAS is one of the best ways to manage the tax system in a country like Malaysia, which has a large number of individual taxpayers. Under the Formal System, tax officials spent a lot of time assessing tax returns while in SAS, the officials can focus on enhancing the tax audits and investigation procedures, as well as concentrating on tax reforms so that the tax collection will increase. If the redistribution income is efficient, high tax collection can be redistributed to taxpayers through certain projects (health, education, infrastructures etc) which can benefit the whole nation in return. Although there are different perspectives between tax administrators and taxpayers, in other countries such as the UK, the US, Japan, Australia and New Zealand SAS has been implemented successfully. In Malaysia, since SAS began in 2001, the direct tax collection has increased tremendously (see Table 3.6) and the numbers keep on increasing in each reported year of SAS operation to date. In addition, various actions have been taken by IRB in order to improve the success of SAS. It is up to taxpayers to respond to any mechanism introduced by IRB. The taxpayers' awareness, honesty and voluntary behaviour are the central success factors in SAS.

In the next chapter, I will discuss the previous literature in tax compliance, including how tax compliance is defined and the importance of tax knowledge in SAS, as well as the determinants of tax compliance.

CHAPTER 4

LITERATURE REVIEW – TAX COMPLIANCE DETERMINANTS

This chapter discusses previous literature in tax compliance and is divided into three main sections. The first section covers the concepts and the definitions of tax compliance and tax non-compliance focusing at issues of tax avoidance and tax evasion. The second section addresses the role of tax knowledge in affecting tax compliance and examines what previous research has had to say about this relationship. The third section reveals tax compliance determinants from various perspectives. The third section is divided into five main parts starting with an economic perspective which discusses how people comply with tax laws including impacts of tax rates, tax audits and the current economic situation. The second part focuses on institutional factors, namely the role of the tax authority, referent groups i.e family and friends and also the simplicity of the tax system. Social factors such as perceptions of equity and fairness, political factors/ruling party and changes to current government policies that affect tax compliance are elaborated upon in the third part of this section (three) while individual factors including the level of tax knowledge and awareness of offences and penalties are discussed in the fourth part. The final parts discuss other factors which prior literature suggests impacts upon tax

compliance including age, gender, level of income and education. Results from previous studies are also analysed, summarised and compared with this study's research questions.

4.1 THE CONCEPT AND DEFINITION OF TAX COMPLIANCE

This section begins with defining the concept of tax compliance followed by tax evasion and tax avoidance. Tax compliance is a major problem for many tax authorities and it is not an easy task to persuade taxpayers to comply with tax requirements even though 'tax laws are not always precise' (James and Alley 2004: 29).

The exact meaning of tax compliance has been defined in various ways. For example, Andreoni, Erard, and Feinstein (1998) claimed that tax compliance should be defined as taxpayers' willingness to obey tax laws in order to obtain the economy equilibrium of a country. Kirchler (2007) perceived a simpler definition in which tax compliance is defined as the most neutral term to describe taxpayers' willingness to pay their taxes. A wider definition of tax compliance, defined in 1978 by Song and Yarbrough suggested that due to the remarkable aspect of the operation of the tax system in the United States and that it is largely based on self assessment and voluntary compliance, tax compliance should be defined as taxpayers' ability and willingness to comply with tax laws which are determined by ethics, legal environment and other situational factors at a particular time and place. Similarly, tax compliance is also defined by several tax authorities as the ability and willingness of taxpayers to comply with tax laws, declare the correct income

in each year and pays the right amount of taxes on time (IRS, 2009; ATO, 2009; IRB, 2009).

Alm (1991) and Jackson and Milliron (1986) defined tax compliance as the reporting of all incomes and payment of all taxes by fulfilling the provisions of laws, regulations and court judgments. Another definition of tax compliance is a person's act of filing their tax returns, declaring all taxable income accurately, and disbursing all payable taxes within the stipulated period without having to wait for follow-up actions from the authority (Singh, 2003). Furthermore, tax compliance has also been segregated into two perspectives, namely compliance in terms of administration and compliance in terms of completing (accuracy) the tax returns (Chow, 2004; Harris, 1989).

Compliance in pure administrational terms therefore includes registering or informing tax authorities of status as a taxpayer, submitting a tax return every year (if required) and following the required payment time frames (Ming Ling, Normala and Meera, 2005). In contrast, the wider perspective of tax compliance requires a degree of honesty, adequate tax knowledge and capability to use this knowledge, timeliness, accuracy, and adequate records in order to complete the tax returns and associated tax documentation (Singh and Bhupalan, 2001). In line with Singh and Bhupalan, Somasundram (2003, 2005a and 2005b) claimed that the wider perspective of compliance becomes a major issue in a self assessment system since the total amount tax payable is highly dependent on the levels of tax compliance this perspective reveals, although it is inevitable that tax authorities will seek to 'influence' the areas taxpayers have influence over determining to reduce the

risks of non-compliant behaviour they face otherwise e.g through continuously conducting tax audits of different sorts and other means such as various compliance influencing activities including tax education[76].

Some authors have viewed tax compliance from a different perspective. For example, Allingham and Sandmo (1972) described tax compliance as an issue of 'reporting an actual income' and also claimed that tax compliance behaviour was influenced by a situation whereby taxpayers have to make a decision under uncertainty (see also Clotfelter, 1983) i.e either taxpayers would enjoy tax savings due to under-reporting income or have to pay tax on the undeclared amount at a penalty rate which is higher than they would have paid had the income been fully declared at the correct time.

In 2001, McBarnet suggested tax compliance should be perceived in three ways, namely; a) committed compliance - taxpayers' willingness to pay taxes without complaint; b) capitulative compliance - reluctantly giving in and paying taxes and c) creative compliance – engagement to reduce taxes by taking advantage of possibilities to redefine income and deduct expenditures within the bracket of tax laws.

Spicer and Lundstedt (1976) perceived degrees of tax compliance as 'a special form of gambling' (which, may involve likelihood of detection and penalties) (p. 295) which

[76] However, it is an argument in SAS that tax audits could not be exclusively applied because the nature of SAS is shifting tax administrator's burden to taxpayers. The tax authority presumes that taxpayers are honest, knowledgeable and compliant (Kirchler *et.al,*. 2008).

requires the tax authority to understand the factors underlying taxpayers' decision to comply with tax laws (p. 295).

Some literature like Allingham and Sandmo (1972), Spicer and Lundstedt (1976), Lewis (1982) and Andreoni, Erard, and Feinstein (1998) therefore characterise and explain tax compliance as the output of interrelation among variables including perception of equity[77], efficiency[78] and incidence (public finance views). Tax enforcement aspects like penalties and the probability of detection also relate to tax compliance while other labour market behaviour factors including an individual's wages and tax bracket also contribute to tax compliance (Kirchler, 2007).

Based on previous authors' definitions, there are some keywords which were widely and interchangeably used to define tax compliance. For example, the words 'obey', 'ability' and 'willingness' (McBarnet, (2001); Andreoni *et al.* (1998); Kirchler (2007); Song and Yarbrough (1978); IRS (2009); ATO (2009) and IRB (2009)). Other keywords were also relevant in defining tax compliance i.e 'reporting all income' (Alm, 1991; Jackson and Milliron,1986), 'act of filing tax returns' (Singh, 2003), 'declare the correct income' (IRS, (2009); ATO, (2009) and IRB (2009)). In addition, some authors also included 'timeliness', 'right amount of tax' (Song and Yarbrough (1978); IRS, (2009); ATO, (2009) and IRB (2009); Ming Ling, Normala and Meera 2005) as part of their definitions.

[77] The effective tax system will be less equitable when the wealthy evade a larger share of taxes than the poor (Andreoni *et.al,.*1998).

[78] Any effort of tax non-compliance affects tax efficiency and compliance costs. Unreported income distorts tax collection (Andreoni *et. al.,* 1998; Lewis (1982).

The wider perspective of tax compliance was also illustrated in the definition provided by Andreoni *et. al.* (1998) in which they included the desired outcome as a result of obedience to tax laws – 'to obtain an economic equilibrium'; Allingham and Sandmo (1972) and Spicer and Lundstedt (1976) – 'enjoy tax saving' or 'penalty'. Singh (2003) described tax compliance as voluntary action – 'without having to wait for follow up actions from tax authority'. Apart from these, Song and Yarbrough (1978) included some factors of compliance in their definition i.e. 'determined by ethics, legal environment and other situational factors'.

Since there have been many empirical studies attempts have been made to define tax compliance, for the purpose of this study, (based on IRS, (2009); ATO, (2009) and IRB (2009); Alm (1991); Jackson and Milliron (1986) and Kirchler (2007)), tax compliance is defined as ***taxpayers' willingness to comply with tax laws, declare the correct income, claim the correct deductions, relief and rebates and pay all taxes on time.***

In contrast with tax compliance, tax non-compliance is defined as taxpayer's failure to remit a proper amount of tax, perhaps on account of the complexity or even contradictions in the tax legislation or tax administration procedure (Jackson and Milliron, 1986: Kesselman, 1994: Kasipillai and Jabbar, 2003). Non-compliance is also perceived as the failure of a taxpayer to report (correctly) the actual income, claim deductions and rebates and remit the actual amount of tax payable to the tax authority on time (Kirchler, 2007). Some studies also segmented income tax non-compliance into unintentional and intentional behaviour (e.g Loo 2006; Mohani, 2001; Kesselman, 1994

and Allingham and Sandmo, 1972). Thus, in conclusion, based on Jackson and Milliron (1986): Kesselman (1994): Kasipillai and Jabbar (2003) non-compliance is defined for the purpose of this study as ***failure to comply with tax laws and/or report incorrect income, the act of claiming incorrect deductions, relief and rebates and/or paying the incorrect amount of tax beyond the stipulated time frame.***

As the literature cited has therefore shown, tax compliance is a wide concept and can be viewed from many perspectives, including public finance, economic, legal and also psychological. James and Alley (2004) suggested two contrasting approaches pertaining to tax compliance as a summary of the extremes of ways of defining this topic (as illustrated in Table 4.1).

Table 4.1: Approach to tax compliance

Tax Compliance	First Approach	Second approach
Concept of:	Tax gap 100% compliance less actual revenue	Voluntary Willingness to act in accordance with the spirit as well as the letter of tax law.
Definition	Narrower	Wider
Tax compliance	Economic rationality	Behavioural co-operation
Exemplified by:	Trade off: 1. Expected benefit of evading. 2. Risk of detection and application of penalties. 3. Maximise personal income and wealth	Individuals are not simply independent, selfish utility maximisers. They interact according to differing attitudes, beliefs, norms and roles. Success depend on co-operation
Issues of:	Efficiency in resource allocation	Equity, fairness and incidence.
Taxpayer seen as	Selfish calculator of pecuniary gains and losses	"good citizen"
Can be termed the:	Economic approach	Behavioural approach

Source: James and Alley (2004), p. 33.

In this study, the primary focus is to explore further the second approach where behavioural aspect are emphasized rather than the more economically rationality approach.

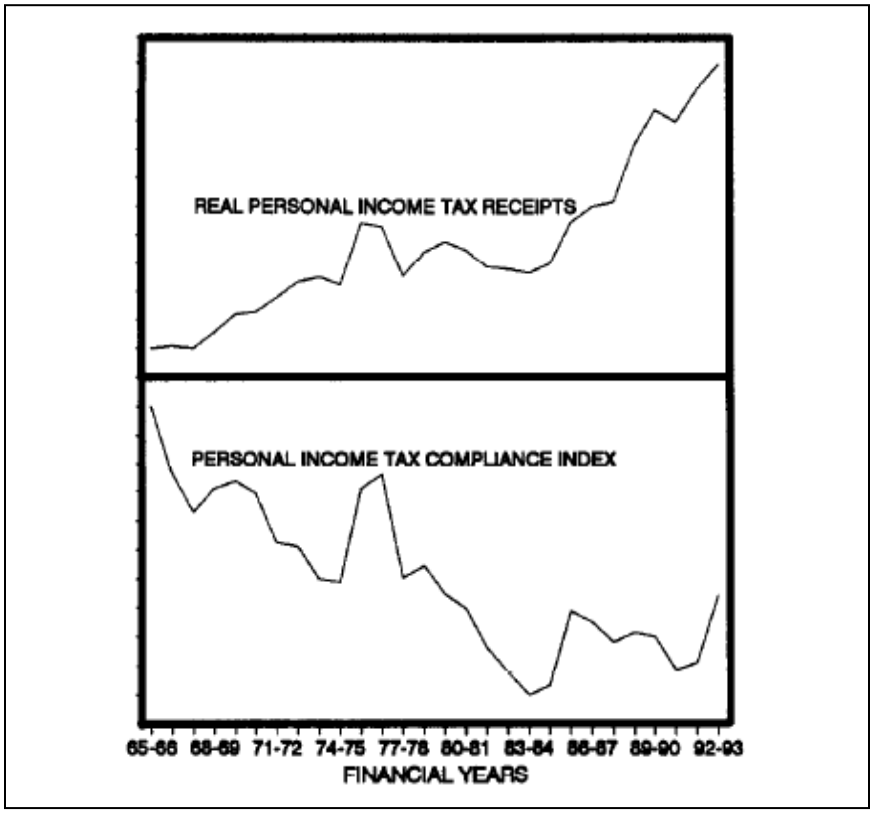
4.1.1 Measures of national tax compliance

This section discusses various proposed measures of tax compliance in individual country studies e.g India as well as tax compliance indexes of various countries. The indexes as suggested by some authors i.e Riahi-Belkaoui (2004), Torgler and Schneider (2005) and Torgler (2007) are useful in order to evaluate the degree of tax compliance problems throughout the world and provide a comparative measure of tax compliance behaviours.

A study by Das Gupta, Lahiri and Mookherjee (1995) attempted to provide a tax compliance index in India from 1965 to 1993. They constructed an aggregate index in which tax compliance was defined to be the ratio of actual income tax revenue receipts (ITR) to the amount of taxes that were actually due to the government.

According to Figure 4.1, the results indicate that the compliance index in India was declining from 1965 to 1974. The index slightly increased in 1975 until 1977 before sharply decreasing until 1984. The index then increased in 1985 before constantly decreasing until 1993.

Figure 4.1: Compliance Index in India 1965 -1993



Source: Das Gupta, Lahiri and Mookherjee (1995) p. 2,056.

This study has a number of limitations. The proxy used for scrutiny assessment activity may be unsatisfactory and the compliance measure is biased, perhaps seriously, due to problems with the measurement of the average effective tax rate and non agriculture gross domestic product (NAGDP). Others therefore have developed alternative measures of compliance using better estimates of income distribution.

Riahi-Belkaoui (2004) attempted to compare the level of compliance in thirty countries worldwide. In this study, tax compliance in each country is measured based on four

variables, namely situation of high economic freedom, importance of equity markets (the degree that each country depends on equity financing), effective competition laws (measured by the answer to survey questions) and high moral norms (violent crime rates is used as proxy), Economic freedom is measured by the 1999 summary economic freedom index from Gwartney, Lawson and Samida (2000). Economic freedom is viewed from seven areas including size of government; economic structure and use or markets; monetary policy and price stability; freedom to use alternative currencies and legal structure and security of private ownership. Riahi-Belkaoui used a regression equation to examine these tax compliance determinants.

Table 4.2 demonstrates the results. According to the table, it seems that the highest compliance rate is from developed countries like Singapore, New Zealand, Australia, the UK and Hong Kong[79]. Surprisingly, among the lowest compliance indexes are from European countries like Italy, Sweden, Turkey, Portugal and Poland. Although the results of Riahi-Belkaoui's study are important, impressive and interesting the reliability is questionable because he was using subjective measurements and indicators which have different impacts on each country. However, it is has become a benchmark and key indicator tool in the tax compliance discipline.

[79] The Hong Kong tax system is simple and relatively attractive (tax haven). SAS is not implemented in Hong Kong.

Table 4.2: Tax compliance index internationally

Name of country	Tax compliance[80]
Singapore	5.05
New Zealand	5.00
Australia	4.58
UK	4.67
Hong Kong	4.56
Switzerland	4.49
USA	4.47
Malaysia	4.34
Chile	4.20
Japan	4.41
Norway	3.96
France	3.86
Canada	3,77
Denmark	3.70
Austria	3.60
Finland	3.53
Germany	3.41
Thailand	3.41
Philippines	3.83
Netherlands	3.40
Spain	3.29
Taiwan	3.25
Cambodia	3.12
Indonesia	2.53
Mexico	2.46
Argentina	2.41
Poland	2.19
Portugal	2.18
Turkey	2.07
Sweden	1.91
Italy	1.77

Source: Riahi-Belkaoui (2004) p. 138.

Torgler and Schneider (2005) attempted to improve on the Riahi-Belkaoui study's contributions to this field of knowledge, although limited their work to a single country analysis (Austrian) taxpayers' attitudes toward paying taxes or 'tax morale'. The authors suggest that Austria is an interesting country to investigate as there is a high degree of tax

[80] Tax compliance is measured based on a scale from 0 to 6. A high score indicates higher compliance.

morale over time (p. 232). Their study was based on the World Values Survey (WVS) and the European Values Survey (EVS) data of 1990 and 1999. WVS (and EVS) is a worldwide investigation of socio-cultural and political change based on representative national samples. Tax morale was measured by the following question (p. 233): *"please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: …Cheating on tax if you have the chance"*, followed by a 10-scale index with two extreme points 'never justified' and 'always justified' (p. 233). Of 1,447 WVS and 1,497 EVS observations, the study suggested that Austrian taxpayers' tax morale decreased between 1990 and 1999 although they note that tax morale in Austria was still high compared to in other European countries. Torgler and Schneider (2005) found that tax morale in Austria was influenced by societal variables such as trust, national pride and religiosity. They also found that if taxpayers perceive that tax evasion is a common phenomenon, their intrinsic motivation to contribute to the society decreases.

In 2007, using the same method as Torgler and Schneider (2005), Torgler analysed the level of tax morale in transition countries and found that tax morale in East Germany was quite high, exceeding the tax morale in the Former Soviet Union (FSU) and Central and Eastern Europe (CEE) in both years. The details of the results are exhibited in Table 4.3.

Table 4.3: Tax compliance in transition countries

Countries	Mean
	1995-97
East Germany	1.919
Former Soviet Union	
Armenia	1.508
Azerbaijan	1.634
Belarus	1.518
Estonia	1.560
Georgia	1.760
Latvia	1.379
Lithuania	1.687
Moldova	1.426
Russia	1.663
Ukraine	1.558
Average	1.576
Central and Eastern Europe	
Bulgaria	2.240
Bosnia	2.172
Croatia	1.309
Hungary	
Macedonia	2.109
Montenegro	1.749
Poland	2.001
Romania	
Slovenia	1.913
Serbia	1.969
Average	1.718

Source: Based on Torgler (2007) p. 220.

Previous studies (i.e. Das Gupta *et. al.*, 1995; Riahi-Belkaoui, 2004; Torgler, 2007) have shown that tax compliance indexes vary among countries. Although these studies have different approaches, variables, different tax laws and measurements, the coefficient provided by those studies is relatively important for future research and benchmarks. The

following section discusses tax evasion and avoidance as part of non-compliance activities.

4.1.2 Tax evasion and avoidance: exploring tax non-compliance further

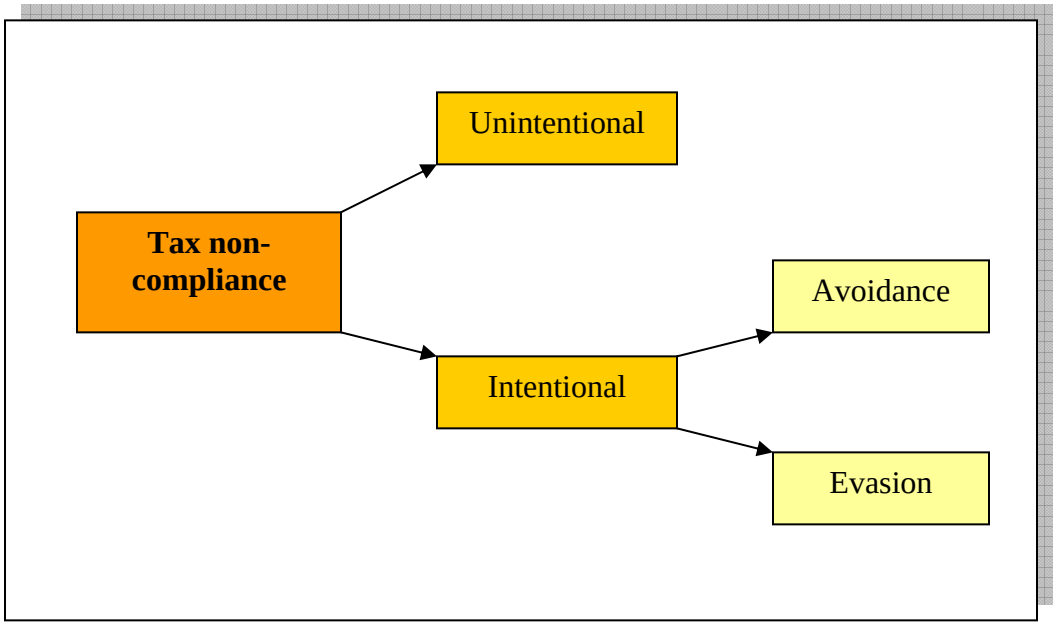
As discussed in section 4.1, tax non- compliance can be considered to be the opposite action or behaviour to tax compliance. This section discusses tax evasion and tax avoidance as examples of tax non-compliance activities which have negative effects on tax collections and tax compliance indexes as discussed in 4.1.1. James and Alley (2004) asserted that non-compliance is more than tax evasion and it is also includes some forms of tax avoidance. James and Alley define tax evasion as 'the attempt to reduce tax liability by illegal means' while tax avoidance is defined as 'reducing taxation by legal means' (p. 28). Lewis (1982: 123) perceived tax evasion as 'any legal method of reducing one's tax bill' and tax evasion is 'illegal tax dodging'. Similarly, Kasipillai, Aripin and Amran (2003) perceived tax evasion as actions which result in lower taxes than are actually owed (p. 135) while tax avoidance, denotes the taxpayers' creativity to arrange his tax affairs in a proper manner based on law and regulation (any provision not violated) so as to reduce his tax bill, and this is (or should be) acceptable in view of the tax administrator.

Kasipillai *et. al.* (2003), Lewis (1982), Webley (2004), Elffers, Weigel and Hessing (1987) and Andreoni *et. al.* (1998) express that non-compliance includes both intentional and unintentional actions. The latter of these are normally due to calculation errors and inadequate tax knowledge although there are other determinants.

Lewis (1982) outlined two major distinctions in intentional tax evasion: 1) evasion by commission and 2) evasion by omission. Evasion by commission requires an action by taxpayer, for example claiming deductions or rebates which mean that if a taxpayer is making a false claim, he will get a tax saving (a commission on top of his evading actions). Conversely, evasion by omission is intentional and should be classified as seriously as evasion by commission (Lewis, 1982). This kind of evasion requires taxpayers to do nothing in the tax return (i.e miss something out deliberately); for example, one would not report his casual income or any cash-basis income.

Based on the definitions and explanation of tax evasion and avoidance, Lewis (1982) asserts that the dividing line between evasion and avoidance still remains unclear. Figure 4.2 summarises tax non-compliance activities including tax evasion and avoidance.

Figure 4.2: Summary of tax non-compliance definition



Kim (2008) reports the degree of tax evasion for 59 countries and 47 countries according to two reports by World Economic Forum (WEF) and the International Management Development (IMD) respectively. The scale for WEF is from 1 to 7 and IMD is 0 to 10. The higher number signifies a lower level of tax evasion. Kim used eleven variables to measure tax evasion namely:

1. price controls,
2. public service,
3. litigation against government,
4. collected personal income tax,
5. collected corporate tax,
6. administrative regulation,

7. GDP per capita,
8. tax system,
9. composition of government spending,
10. effective personal income tax rate, and
11. average corporate tax rate.

Across the countries, a regression analysis of this data suggested that tax evasion is predominantly influenced by only six variables, namely price controls, public services, collected corporate tax, GDP per capita, tax system and the composition of government spending. Table 4.4 illustrates the countries and their level of tax evasion as suggested by Kim (2008).

Table 4.4: Countries and their level of tax evasion.

Countries	Tax evasion (WEF)	Tax evasion (IMD)
Argentina	2.35	2.02
Australia	3.93	4.76
Austria	4.49	5.47
Belgium	2.30	2.45
Bolivia	2.24	
Brazil	2.34	2.52
Bulgaria	2.64	
Canada	5.37	6.64
Chile	5.38	7.00
China	2.84	3.56
Colombia	2.40	1.85
Costa Rica	2.53	
Czech	2.79	2.54
Denmark	4.19	5.43
Ecuador	2.00	
Egypt	2.84	
El Salvador	3.37	
Finland	4.53	7.02
France	3.29	5.44
Germany	3.25	4.66
Greece	2.30	2.09
Hong Kong	5.19	768
Hungary	2.68	3.06
Iceland	3.59	4.19
India	2.39	2.50
Indonesia	2.85	2.70
Ireland	3.88	4.84
Israel	3.86	4.96
Italy	2.35	2.67
Japan	4.59	6.15
Jordan	3.98	
Korea	2.88	3.06
Luxembourg	478	6.57
Malaysia	4.34	5.94
Mauritius	3.84	
Mexico	2.41	2.50
Netherlands	4.89	5.67
New Zealand	5.27	7.18
Norway	4.02	5.67
Peru	2.96	
Philippines	1.95	2.39
Poland	3.24	3.23
Portugal	2.75	2.92
Russia	**1.74**	**0.66**

Singapore	**6.00**	**8.18**
Slovakia	2.62	2.94
South Africa	2.54	2.53
Spain	4.04	5.09
Sweden	3.23	4.40
Switzerland	5.02	6.66
Taiwan	3.62	4.56
Thailand	2.92	3.77
Turkey	2.41	2.44
Ukraine	1.99	
United Kingdom	5.52	6.03
United States	4.96	6.22
Venezuela	2.23	2.04
Vietnam	2.50	
Zimbabwe	3.00	

Source: Kim (2008) p. 407.

According to Table 4.4, it seems that tax evasion coefficients in Asian countries are similar to those in developed countries i.e Europe. For instance, Malaysia, Singapore, Japan, Hong Kong, the United Kingdom, Netherlands and Denmark have tax evasion indices of approximately 5.00 (WEF). The lowest (highest tax evasion) tax evasion index goes to Russia (WEF 1.74) while the highest (lowest tax evasion) tax evasion index belongs to Singapore (WEF 6.00).

Comparing Kim's results to Riahi-Belkaoui (2004), Kim's could be considered to be more reliable and meaningful because he used variables that summarise the economic situation in those countries (i.e. political factors, price controls and GDP per capita). In addition, Kim also concluded that tax evasion across the countries is highly correlated with politics and tax administration.

In summary, this section (4.1) has reviewed previous literature to produce a definition of tax compliance for this research, explored how tax compliance may be measured in a country and outlined several discussions in relation to tax evasion and tax avoidance measurement. The next section discusses the importance of the role of tax knowledge and its effect on compliance.

4.2. TAX KNOWLEDGE AND TAX COMPLIANCE

This section discusses the importance and the role of tax knowledge, particularly in determining taxpayers' attitudes towards taxation. A significant amount of literature from various countries, different approaches, a range of variables and findings are also discussed in this section.

The influence of knowledge on compliance behaviour has been proven in various research (Mohamad Ali *et. al.*, 2007). Harris (1989) divided tax knowledge into two aspects, namely, knowledge through common or formal education received as a matter of course and knowledge specifically directed at possible opportunities to evade tax. In the first case, the level of education received by taxpayers is an important factor that contributes to the general understanding about taxation especially regarding the laws and regulations of taxation (Eriksen and Fallan, 1996). Previous studies have evidenced that general tax knowledge has a very close relationship with taxpayers' ability to understand the laws and regulations of taxation, and their ability to comply with them (Singh, 2003).

Given evidence that tax knowledge affects understanding of taxpayers, an obvious next that has been raised by previous researchers (e.g. Singh, 2003; Eriksen and Fallan, 1996; Harris, 1989) is whether enhancement of tax knowledge will increase tax compliance. Thus, the remainder of this section describes the relationship between tax knowledge and tax compliance.

Eriksen and Fallan (1996: 387) claimed that 'knowledge about tax law is assumed to be important for preferences and attitudes towards taxation. There is little research that explicitly considers how attitude towards taxation is influenced by specific knowledge of tax regulations'. The research done by Eriksen and Fallan has illustrated the importance of tax knowledge in a tax system, especially in a SAS. They suggested that fiscal knowledge correlates with attitudes towards taxation and tax behaviour can be improved by a better understanding of tax laws[81].

Eriksen and Fallan's study is divided into three main parts. Firstly, the investigation is focused on taxpayers' knowledge. Secondly, the research tries to reveal the overall impact of tax knowledge on tax compliance behaviour among individual taxpayers and thirdly, the research involves tax agents in order to determine their influence in determining taxpayers' behaviour because in SAS, tax agents are assumed to be involved more in preparing, declaring and calculating tax liability on behalf of individual taxpayers than in the directly assessed system. Eriksen and Fallan (1996) attempt to determine the relationship between the level of tax knowledge and attitudes toward

[81] This finding is in line with earlier research on this topic by Lewis (1982)

taxation; whether specific tax knowledge influences attitudes in general (not only tax attitudes) and investigates people's behaviour toward traditional crime. The study was conducted through quasi-experiment with pre-testing and post-testing of two student groups in Norway. The control group comprised of students who were going to take marketing as an elective subject in the second year of their BA education whereas the other group (experimental group) consisted of students who had selected tax laws as an elective.

The pre-test included 149 students; 102 students from the experimental group took tax law as an elective and 47 students from the control group took marketing as an elective. The post-test included 123 students; 94 students from the experimental group took tax law as elective and 29 students from the control group took marketing as an elective. Tax knowledge was measured in the pre-test and post-test using a score calculated from 12 questions[82] concerning tax allowances and tax liabilities. In the post-test, the researchers extended the questions to 28 in order to get a better picture of tax knowledge between the two groups.

The researchers developed four constructs based on Schmolders (1970) and Lewis (1982) in order to operationalise the study; 1) attitudes to other people's tax evasion ('other'), 2) attitudes to one's own tax evasion without identifiable victims ('ethics'), 3) attitudes to other illegalities with identifiable victims ('crime') and 4) understanding of the fairness of the tax systems ('fairness').

[82] Erikson and Fallan used multiple choice questions in which in each question respondents had to choose either *'Yes'*, *'No'* or *'Do not Know'*. Tax knowledge was measured based on the answers.

The result of the study suggested that tax knowledge has a positive correlation with perceptions of fairness, tax ethics and attitudes to others' tax evasion. The result of the study supports the principle of attitudes being affected by better tax knowledge and demonstrates that it holds other attitude dimensions as well as the fairness of progressive tax which was studied by Robert *et. al.* (1994).

The predominant result of this experiment is the strong influence ($r = 0.30$, $p < 0.001$ two tailed t test) of increased tax knowledge on the respondents' perceptions of the fairness of the tax system. The students' perception of the fairness of the tax system increases as tax knowledge is improved.

This result is in line with previous studies by Lewis (1982) where low tax knowledge correlates with negatives attitude toward taxation. 'Tax attitudes can be improved through better tax knowledge' (Eriksen and Fallan, 1996: 398) and thus this will in turn increase compliance and reduce the inclination to evade taxes.

Collins, Milliron and Toy (1992) however, produced a counter result in their study in the United States from a random mail survey of 700 households from telephone directories. Out of 220 usable responses, Collins *et. al.* found that tax knowledge and the level of education were negatively correlated with compliance behaviour. In addition, knowledge about tax law is assumed (by Collin *et. al.*) to be of importance for preferences and attitudes towards taxation. Nevertheless, there is little research that explicitly considers how attitudes towards taxation are influenced by specific knowledge of tax regulations

and their economic effects. A number of prior studies (e.g. Vogel, 1974; Spicer and Lundstedt, 1976; Song and Yarbrough, 1978; Kinsey and Grasmick, 1993) have taken into account the general level of education of the taxpayers as an additional variable, but this indirect method is based on the assumption that knowledge about taxation increases with the length of education, independent of the educational content. Since there are many people with less formal education or even those do not have any qualification, who have better knowledge about taxation than those with higher education qualification. Such indirect measurements do not therefore give a completely satisfactory answer to the issue of whether there is a connection between specific tax knowledge and attitudes towards taxation.

Although there was a contradiction between the results of Collins *et. al.* (1992) and Eriksen and Fallan (1996), the result of Eriksen and Fallan's study indicated that a successful means of reducing tax evasion is to provide more tax knowledge to as many taxpayers as possible in order to improve their tax ethics and perceptions of fairness and equity. Their result also implied that there is a strong suggestion that tax law and tax knowledge should be included as a 'compulsory course in social science in the schools' (Eriksen and Fallan, 1996: 399).

Lewis (1982) attempted to determine whether there is a connection between specific tax knowledge and attitudes during completing the tax return. His aim was to study any changes in the attitudes towards taxation that result from increased knowledge about taxation which might have a significant impact on tax compliance. Lewis argued that that

there is insufficient knowledge about tax regulations and this situation leads to negative economic effects (an increase in the tax gap).

Furthermore, there also seemed to be considerable differences in the level of knowledge although the level of education remains the same. Moreover, there are no comparable experiments focusing on how better specific tax knowledge affects attitudes towards taxation as mentioned by Alm (1991), who presents a survey of experiments in tax compliance research.

As SAS requires the full capability and competency of taxpayers' knowledge; some aspects of attitudes towards taxation, such as tax ethics and their perceptions of the fairness of the tax system also have an influence on the inclination towards tax evasion (Jackson and Milliron, 1986). Consequently it is important to get more details about how these attitudes are influenced. For example, 'teachers of tax law and tax planning are used to measure specific tax knowledge in the sense of the ability to calculate tax liabilities on income and wealth for different taxpayers in different situations especially in SAS. Specific tax knowledge combines information about tax rules with financial knowledge to make it possible to calculate economic consequences for taxpayers. Tax knowledge is not a clear construct, but attitudes towards taxation are an even more problematic term' (Eriksen and Fallan, 1996: 389).

Hasseldine and Hite (2003b) extended the tax compliance literature by testing goal framing in a tax compliance setting. Although this study does not specifically relate to tax

knowledge determinants as a whole, the variables used in this study addressed information about tax laws and inclination of behaviour, thus it can be argued to contribute to the findings in the tax knowledge literature particularly in relation to how it affects tax attitudes. They attempted to answer the main research question whether information about tax in a certain year of assessment (that is negatively or positively framed), affects tax compliance behaviour. The study focused on research framing introduced by Levin, Schneider and Gaeth (1998) and Levin, Schneider, Lauriola and Gaeth,(2002).

Levin *et .al.* (1998) and Levin *et. al.* (2002) proposes that there are three types of framing effects in the literature: 1) risky choice, 2) attribute framing and 3) goal framing. In risky choice framing, the outcome of some decision choice by the taxpayer may involve options with different risk levels. Attribute framing means that when a single attribute is framed, either positively or negatively, it will affect the whole item evaluation, i.e. tax compliance decision. This kind of framing is normally used in marketing research where the consumers may have their own perception of certain things regardless of the framing manipulation. The third frame is goal framing which means that how people perform (their behaviour in response to persuasive communication stressed by other party, i.e. referent group). Attribute framing and goal framing are different from risky choice framing because there is no risk element involved.

The Hasseldine and Hite (2003b) hypothesised that; 1) taxpayers who read negatively framed persuasive communication will make different tax reporting decisions than

taxpayers who read an objectively positively framed advertisement, and 2) women will make different tax reporting decisions than men after reading persuasive communication regarding compliance behaviour. The method of the study was through mail survey as advocated by Dillman (1978). The dependant variable measured was whether the taxpayers would illegally omit the cash income as stated in the questionnaire and the control variable was the attitude of taxpayers to noncompliance.

Out of 435 usable respondents, the results show that there were no significant differences between men and women on two demographics (age and household income) and on three tax reporting characteristics (last tax return outcome, and being either audited or questioned by IRS). The results suggest that the non-compliance scale is strongly significant as a covariate, confirming that attitudes to tax non-compliance strongly predict compliance behaviour and thus rejecting the first hypothesis. One conclusion of this study was that males were more persuaded by the negatively framed messages while females were more persuaded by the positively framed messages.

Although the result of the study can be considered as convincing, nevertheless, this study does not compare the other two approaches of framing (risky choice framing and attribute framing). Levin *et. al.* (1998) mentioned that the research evidence for goal framing is less homogenous than other types of framing because of greater variations in operationalising goal framing.

A study in Malaysia conducted by Loo and Ho (2005) examined salaried individual competency in SAS but limited their sample to individuals who pay taxes in and prior to 2003 and who are likely to pay taxes in and after the year of 2004. Tax knowledge was measured in terms of chargeable income, exemptions, reliefs, rebates and tax credits. By using a survey of 250 questionnaires[83], the study concluded that although the respondents have tertiary education, their tax knowledge in relation to personal taxation was considered to be relatively low thus making them 'incompetent and not ready to exercise appropriate compliance under self assessment regime' (Loo and Ho, 2005: 53).

Furthermore, Eriksen and Fallan (1996) suggested that a taxpayer should be given better tax knowledge to improve perceptions of fairness, tax ethics and attitudes to others' tax evasion and thus suggesting that:

> *"…a successful means of preventing tax evasion is to provide more tax knowledge to larger segment of society in order to improve tax ethics and people's conception of the fairness of the tax system. "*
>
> *"…it would be a step in the right direction to make teaching in tax law and tax knowledge a compulsory part of social science teaching in the schools."*
>
> *Eriksen and Fallan (1996: 399)*

[83] A total of 106 usable questionnaires were used after excluding those who employed in banking, finance and insurance industries, professionals in accounting, tax, legal and corporate secretarial. The reason why these groups of respondents were excluded was to obtain a genuine finding as these respondents by virtue of the nature of their occupations require high levels of tax knowledge.

In conclusion, after taking into consideration findings from previous literature, it is clear that developing tax knowledge in taxpayers is an important element in operating a successful tax system – particularly one based on self assessment. Achieving an appropriate voluntary compliance level (which is one of the main objectives of a SAS as discussed in Chapter 3) could be achieved if taxpayers can complete the tax returns correctly and pay the right amount of taxes. Thus to realise the objectives of SAS, taxpayers need to be informed, well educated (particulalrly in tax matters), and their tax literacy level needs to be enhanced on a regular basis to keep their knowledge up to date and relevant.

After reviewing the importance of tax knowledge more generally in determining tax compliance, the next section describes the determinants of tax compliance behaviour.

4.3 TAX COMPLIANCE DETERMINANTS

This section discusses the factors that may affect tax compliance according to the literature. Factors discussed were divided into five main parts, namely 1) economic factors (tax rates, tax audits and perceptions of government spending); 2) institutional factors (the role of the tax authority, simplicity of the tax returns and administration and probability of detection); 3) social factors (ethics and attitude, perceptions of equity and fairness, political affiliation and changes on current government policy, referent groups); 4) individual factors (personal financial constraints, awareness of offences and penalties)

and 5) and other factors (age, income, level, culture, education, gender). The division into these categories is based on Kirchler (2007) and Loo (2006) in which they approached tax compliance from an interdisciplinary perspective which represents a wider perspective of tax compliance determinants compared to other researchers. For example, Kirchler (2007: 3) divided tax compliance determinants into five categories and the study was based on psychological and tax authority-taxpayers' view namely, political perspectives, social psychological perspectives, decision making perspectives, self employment and interaction between tax authorities and taxpayers.

4.3.1 Economic factors

Economic factors in relation to tax compliance refer to actions which are associated with the costs and benefits of performing the actions (Loo, 2006: 96). Hasseldine (1993), Song and Yarbrough (1978) and Torgler and Schneider (2005) assumed that taxpayers are rational economic evaders who likely would assess the costs and/or benefits (tax savings, see Allingham and Sandmo (1972) of evasion. They would attempt to minimise their tax liability, for example, by intentionally under reporting their income and would enjoy tax savings if they were not detected by the tax authorities. On the other hand, they would be willing to pay more, including a penalty, if they were caught (Song and Yarbrough, 1978; Somasundram, 2005b; Torgler, 2007). In the following subsections, the tax compliance determinants associated with economic factors i.e tax rates, tax audits and perceptions of government spending are explored in more detail.

4.3.1.1 Tax rates

This subsection discusses how tax rates influence taxpayers' decision to comply with tax laws. Clotfelter (1983) claimed that "reducing tax rates is not the only policy that has the potential to discourage tax evasion" (p. 363) but the tax rate is an important factor in determining tax compliance behaviour although the exact impact is still unclear and debatable (Kirchler, 2007:114). Clotfelter also suggests that there was a significant relationship between tax rates and evasion due to tax rates being used as an instrument that can be manipulated for policy goals in particular. Raising marginal tax rates will be likely to encourage taxpayers to evade tax more (Whitte and Woodbury, 1985; Ali, Cecil and Knoblett, 2001; Torgler, 2007) while lowering tax rates does not necessarily increase tax compliance (Trivedi, Shehata, and Mestelmen, 2004; Kirchler, 2007) This uncertainty and conflicting issue (for example reducing tax rate to increase compliance) has attracted the attention of tax researchers aiming to come up with more certain and concrete evidence of the impact of tax rates on evasion.

Allingham and Sandmo (1972) previously attempted to find a relationship between actual income, tax rates, penalty and investigation and tax evasion using statistical modeling. Allingham and Sandmo concluded that taxpayers may choose either to fully report income or report less, regardless of tax rates. Tax rates appeared to be insignificant in determining tax evasion. However, a study in 1980 by Tanzi used an econometric model to explain the relationship between marginal tax rates and evasion. By using aggregate

data in the United States, he illustrated that tax rates were positively correlated with tax evasion according to his data.

Other economic models of rational compliance decisions however, perceived that tax rates have a mixed impact[84] on tax compliance or predict that increasing tax rates will increase compliance behaviour (Kirchler, Hoelzl and Wahl, 2008). In contrast with Allingham and Sandmo, various studies found that increasing tax rates encouraged non-compliant behaviour or produced mixed findings (see Pommerehne and Wech-Hannemann, 1996; Park and Hyun, 2003). Porcano (1988) claimed that tax rates have no effect on tax compliance while most experimental studies found that increasing tax rates leads to tax evasion (Alm, Jackson and Mckee, 1992; Friedland *et .al.,* 1978; Park and Hyun, 2003).

Since the impact of tax rates was debatable (positive, negative or no impact on evasion), Kirchler *et. al.* (2008) and McKerchar and Evans (2009) suggested that the degree of trust between taxpayers and the government has a major role in ascertaining the impact of tax rates on compliance. When trust is low, a high tax rate could be perceived as an unfair treatment of taxpayers and when trust is high, the same level of tax rate could be interpreted as contribution to the community (Kirchler *et. al.,* 2008).

In summary, evidence suggests tax rates have mixed impact on tax compliance i.e decreasing tax rates does not necessarily always increase compliance (Kirchler *et. al.*,

[84] Increase in tax rates might have positive or negative impact on evasion.

2008) and increasing tax rates will not necessarily always decrease compliance behaviour (Allingham and Sandmo, 1972). The following subsection discusses how tax audits influence tax compliance.

4.3.1.2 Tax audits

Tax audits, audit rates and prior audit experience have been ambiguously discussed in relation to tax compliance. Some studies claimed that audits have a positive impact on tax evasion[85] (See Jackson and Jaouen, 1989; Shanmugam, 2003; Dubin, 2004). These findings suggest that in self assessment systems, tax audits can play an important role and their central role is to increase voluntary compliance. Audits rates[86] and the thoroughness of the audits could encourage taxpayers to be more prudent in completing their tax returns, report all income and claim the correct deductions to ascertain their tax liability. In contrast, taxpayers who have never been audited might be tempted to under report their actual income and claim false deductions.

Butler (1993) also found that tax audits can change compliance behaviour from negative to positive. These findings complement the Witte and Woodbury (1985) and the Beron, Tauchen and Witte (1988) studies. Witte and Woodbury in their study of small proprietors found that tax audits have a significant role in tax compliance. They did not empirically test individual taxpayers, thus left open room to conduct research in this area.

[85] Meaning that taxpayers who have been audited by a tax authority at same point will be more compliant following the audit.
[86] Audit rates are calculated based of number of tax returns audited divided by number of tax returns accepted by tax authority.

While Butler (1993) and Witte and Woodbury (1985) found significant results, Beron *et. al.* (1988) found a contradictory result. They reported that audits did not significantly correlate with evasion for all groups they studied. Audits were found to be more effective in inducing taxpayers to over claim deductions rather than encouraging them to correctly report actual income. (Beron *et. al.*, 1988)

Another study by Dubin, Graetz and Wilde (1987) estimated the determinants of income tax reporting as a function of audit rates using state-level, time-series and cross-section data from the Annual Report of the IRS for the years 1977-1985. They found that higher audit rates often have a positive impact on income tax reporting but one that varies by audit class and one that is not always statistically significant. The study also found that there is a spillover effect from tax audits; that is, taxpayers who are not themselves audited pay more in taxes when audit rates increase.

From another point of view, Evans, Carlon and Massey (2005) studied the tax compliance of small and medium size enterprises (SME) in Australia. Their objective was to examine the relationship between record keeping practices of SMEs and the potential exposure to tax compliance problems. The study hypothesised that low tax compliance among SMEs might better encourage the tax authority to increase audits and investigations. This study involved 129 small business owners, 130 tax practitioners and Australian Tax Office (ATO) auditors. Using mail surveys, this study found that audit history, including frequency, audit outcome and the type of audit of small business owners has a significant indirect impact on tax compliance (in terms of record keeping).

The result also evidenced that the primary objective of the small business owners doing their record keeping is tax compliance related rather than part of their management of their business. Thus, as the audits investigations increase, many SMEs will make more of an effort at proper record keeping.

In summary, previous studies have evidenced that tax audits play an important role in increasing voluntary compliance. Audits rates and the thoroughness of the audits could potentially encourage taxpayers to be more prudent in completing their tax returns. The next subsection describes the impact of perceptions of government spending on compliance.

4.3.1.3 Perceptions of government spending

Studies on the relationship between the specifics of actual government spending and tax compliance, particularly on tax evasion, are very limited. Logically, taxpayers, and especially those who pay high amounts of tax, will be sensitive to what the government spends their money on. Although there is limited empirical evidence, it is reasonable to assume that taxpayers will tend to evade tax if they perceive that the government spends tax money unwisely. However, in most developed countries like the United Kingdom which implement Pay as You Earned (PAYE), it is quite difficult to evade much of their tax libility as deductions are made at source for the majority of many taxpayers' liabilities. Unlike the United Kingdom, in other countries where PAYE is not as

extensively used, taxpayers have a larger opportunity to under report their income and therefore pay less tax.

Lewis (1982) suggests that attitudes should be examined for the degree to which they are a product of myth and misperception. He argued that when myths and misperceptions are replaced by knowledge, a change in attitudes towards taxation will occur even if the taxpayers' basic ideology and values remain unchanged and the tax law is unchanged. He also claimed that misperception probably plays a major role shaping fairness evaluations. Meanwhile, Roberts, Hite and Bradley (1994) also suggest that attitude to one's own tax evasion (tax ethics), and attitude to other people's tax evasion are important. If the government is wisely spending the national revenue, for example for basic facilities like education, health and safety and public transportation, it is likely that voluntary compliance will increase. In contrast, if taxpayers perceive that the government is spending too much on something considered unnecessary or unbeneficial to them then taxpayers will feel betrayed and attempt to evade.

In summary, the government should prudently spend taxpayers' money because the way in which the government spends the money produces different levels of compliance. Taxpayer's perceptions are potentially important in determining their compliance behaviour.

4.3.1.4 Summary

This subsection discusses tax compliance determinants from an economic perspective, discussing results of previous studies that have suggested that tax rates, tax audits and perceptions of government spending have influenced taxpayers' compliance behaviour. The next subsection demonstrates tax compliance determinants explored from an institutional perspective, including the simplicity of tax administration and probability of detection.

4.3.2 Institutional factors

While taxpayers are influenced by their pure economic concerns either to evade or not to evade taxes, evidence suggest that institutional factors also play an important role in their compliance decisions. Institutional factors discussed in this section include t taxpayers' perceptions of the efficiency of the tax authority/government, the simplicity of the tax returns as tax system more generally as well as the probability of being detected.

4.3.2.1 Role (efficiency) of the tax authority/government

A for many aspects of tax compliance, there is a debate in the literature as to how the effective operation of the tax system by the tax authorities influences taxpayers' compliance behaviour as researchers from different countries have been unable to achieve agreement about this issue which appear to differ from country to country.

Therefore different countries have proposed and develop different solution to the relationship between taxpayer compliance and their operation of the tax system. In the US for example, the IRS views tax non-compliance as a big challenge as the tax gap has increased tremendously in the last few decades. In 1976, an Internal Revenue Service report estimated under reported income was $75 to $100 billion - about 7% to 9% of reported income (IRS 1979a: 11)[87]. While Guttman (1977)[88] and Fiege (1979)[89] estimated that in reality it was probably higher than this. Guttman (1994)[90] revealed that in 1993 the tax gap in the US was more than $170 billion (around 70% to 126% increase compared to the IRS estimate in 1976).

In Belgium, the total amount of tax evaded was estimated at 20% of income tax (Hasseldine, 1993) while across the US, Australia, the Netherlands and Sweden, surveys revealed that one quarter of respondents admit that they deliberately under-report their income (Hasseldine, 1993).

The role of the tax authority in minimising the tax gap and increasing voluntary compliance is clearly very important. Hasseldine and Li (1999) illustrated this, placing the government and the tax authority as the main party that need to be continuously efficient in administering the tax system in order to minimise tax evasion. The government plays a central role through designing the tax systems itself, and the specific enforcement and collection mechanisms (Hasseldine and Li, 1999: 93). Furthermore,

[87] Cited in Clotfelter (1983).
[88] Cited in Clotfelter (1983).
[89] Cited in Clotfelter (1983).
[90] Cited in Hasseldine and Li (1999)

Roth *et. al.* (1989) suggested that in order to increase compliance, maximise tax revenue and be respected by taxpayers, a government must first have an economical tax system, which is practicable[91]; they must discourage tax evasion and not induce dishonesty; they must avoid the tendency to dry up the source of the tax and should avoid provoking conflict and raising political difficulties; they should also have a good relationship with the international tax regime.

A recent study conducted by Richardson (2008) also suggested that the role of a government has a significant positive impact on determining attitudes toward tax. His study attempted to investigate the determinants of tax evasion across 47 countries including the USA, the UK, Argentina, Thailand, Canada, Chile and Brazil. Richardson also suggested that the government should increase their reputation and credibility in order to obtain trust from the taxpayers.

In summary, although previous studies could not provide conclusive results on the measurable impact of the efficiency of the government on compliance, however, researchers from different countries have discussed this issue and some authors have describe how the role of government in inducing tax compliance is important and relevant in self assessment systems (see Richardson, 2008; Hasseldine and Li, 1999). The next section discusses the impact of the simplicity of tax returns and administration on compliance.

[91] The government have suitable powers (assessment and collection) to administer the tax system .

4.3.2.2. Simplicity of tax returns and administration

As tax systems have become increasingly complex over time in many developed countries, complexity has become an important determinant of tax compliance behaviour. The main feature of SAS is self-completed tax returns which require at least a reasonable level of simplicity because taxpayers come from various backgrounds, with differing levels of education, income and most importantly levels of tax knowledge. In helping taxpayers to complete the tax returns accurately, the tax authority should have come up with a simple, but sufficient, tax return. The information required in the return must be at minimum level and be readily available from taxpayers' business and personal records.

Denmark, Canada and New Zealand are the leading countries that have introduced simplified tax returns by reducing the number of pages to facilitate and increase voluntary compliance among taxpayers (Mohani, 2001: Mohani and Sheehan, 2003, 2004). In the UK for example, the HMRC has, in recent years tried to present more simplified tax returns that ordinary people can understand better. In 2007, the tax return was accompanied by a 35 page guide on how to complete the tax return and that did not even include the 8 extra pages of notes that also needed to be considered by some taxpayers (HMRC, 2009). The form and the accompanied guide has now been simplified to facilitate taxpayers, in particular by computerising this process so that only context-sensitive details are needed as the taxpayers complete their returns. This significantly

simplified the range of guidance the taxpayer is exposed to, keeping it to the necessary minimum.

Silvani and Baer (1997) discuss the importance of the tax authority having a simple tax return and system from the taxpayers' point of view. Although the word 'simple' carries multiple interpretations, at least the majority of taxpayers require that the tax return should be as simple as possible. The tax authority may assume its tax return is simple and easy to complete but it may not be from the taxpayers' point of view. Therefore, it is good practice, before the final version is delivered to taxpayers, to ensure that 'pilot' tests have taken place first so that the tax return is really as simple and easy as it can be.

In addition, Silvani and Baer (1997) added that simplifying the tax return will encourage taxpayers to complete the tax return on their own rather than employing a tax agent and thus reducing compliance costs. From another point of view, previous studies have evidenced that complexity of reporting requirements has a high association with errors detected by audits (Long 1988). This finding (by Long) of course is perhaps to be logically expected by tax authorities. If many errors are detected in tax returns and the same errors happen every year by different taxpayers, it means that the wordings or the sentences of the format in tax return may be at least partly to blame. Slemrod (1989) makes a similar point to Long (1988) in that he believes that a simple tax return and simpler tax regulations will increase tax compliance especially in a self assessment

system because taxpayers do not have to spend much time in ascertaining the accuracy of the returns and calculating their tax liabilities.

As the tax regulations and laws in most countries are amended almost every year as part of annual budget process, the current regulations might be no longer relevant in the future. For example, tax rates, personal allowances, deductions, rebates and taxable income are usually different each year. This situation will encourage taxpayers to make mistakes. Simplifying tax administration is important because it can facilitate efficient and enhanced administration and reduce costs (Mohani, 2001; Bird, 1998; Silvani and Baer, 1997). Thus, non compliance in terms of inaccurate tax returns is not only caused by taxpayers evasive behaviour (either intentional or unintentional), but may also be because of the tax authority's mistakes or weaknesses in developing and designing the systems.

Interestingly, Richardson (2008) in his study extending studies by Riahi-Belkaoui (2004) and Jackson and Milliron (1986), found that out of seventeen variables tested across 45 countries (including age, gender, education, fairness, culture and religion), complexity is found to be the most important determinant of tax evasion (p. 164). He therefore concluded that 'a more simple tax system and administration can reduce tax evasion' (p.165).

In summary, as the main feature of SAS is self-completed tax returns and taxpayers come from various levels of backgrounds, therefore, simplifying tax returns and administration

potentially could help taxpayers to complete their tax returns accurately and increase compliance. The next subsection describes the relationship between the probability of detection and compliance.

4.3.2.3. Probability of detection

Compliance in respect to the probability of detection[92] has received attention from many researchers. Allingham and Sandmo (1972) claimed that taxpayers will always declare their income correctly if the probability of detection is high. Probability of detection plays a significant role in reporting behaviour as taxpayers will declare everything if they perceive that they will be one of the auditees in that particular year (Riahi-Belkaoui, 2004; Richardson, 2008). Slemrod, Blumenthal and Christian (1998) investigated the relationship between the probability of being audited and the taxpayers' responses. The experiment[93] indicated that taxpayers' behaviour varied with respect to level of income and the probability of being audited played a significant role in determining taxpayers' evasion behaviour. However, the direction of the relationship (positive or negative) was not clearly stated by Slemrod *et. al.* (1988).

The Slemrod *et. al.* result was also supported by Andreoni *et. al.* (1998) who found that prior audit experience and continuous contact (relation) with the tax authority influenced

[92] The degree or probability rates is defined as the number of tax returns audited divided by total tax returns received by the tax authority.
[93] Using taxpayers' tax returns for two years to compare the differences in reported income, deductions and tax liabilities. Random sampling was used.

and increase compliance among taxpayers. Conversely, Young (1994) and Slemrod *et. al* (2001) found that probability of being audited again was negatively correlated with compliance behaviour.

Bergman (1998) investigated tax compliance behaviour in Argentina using two approaches; 1) the measures to enhance commercial taxpayers and 2) extensive campaigns and audits which will increase the probability of detection among individual taxpayers. The results suggested that as the number of audits and the probability of detection increased, taxpayers are encouraged to comply with tax laws and accurately report their income. This suggests that unintentional evasion may occur rather than intentional evasion (p. 63). He also claimed that the lack of audits and investigations implemented by tax authorities in the 1980s in Argentina had driven taxpayers to behave 'recklessly'. Moreover, as taxpayers were aware that they would not be detected due to lack of investigations, they incorporated more complex tax evasion strategies and less traceable documentations so that they could pay less tax. Findings by Bergman are consistent with the theoretical proposition that the fear of detection influences the level of compliance behaviour, suggesting that the evaders take precautionary measures when the perceived risk of detection is high. Findings from Bergman (1998) have also evidenced that probability of being detected plays a significant role in inducing compliance behaviour although Young (1994) and Slemrod *et. al.* (2001) contradicted this.

A recent study by Eisenhauer (2008), investigated tax compliance determinants particularly in terms of ethical preferences and risks aversion (high or low audit

probability) using three major data sources: survey, audits and experiments, across the United States. The study concluded that individuals who are self employed have greater opportunity to evade than other groups, especially in light of the low probability of audits they face coupled with less third-party withholding of their income tax liabilities. The study also suggested that due to increased evasion across the USA, tax audits have become more important as a way of minimising tax non-compliance However, the importance of the audit programmes was not solely determined by individuals who are self employed taxpayers (as suggested by this study); other groups of taxpayers (for example employees) might provide different results and interpretations.

In summary, different levels of probability of detection provide different degrees of compliance. For example, a high probability of detection potentially increases compliance (see Bergman, 1998; Eisenhauer, 2008), although some authors found contradictory results in some circumtances (i.e. Young, 1994: Slemrod *et. al.*, 2001).

4.3.2.4 Summary

This subsection discusses tax compliance determinants from an institutional perspective, where previous literature has evidenced that the role of tax authority, the simplicity of tax returns and administration as well as the probability of detection are likely influences on taxpayers' behaviour. The next subsection demonstrates tax compliance determinants from a social perspective including ethics, perceptions of equity and fairness and changes to government policy.

4.3.3 Social factors

Tax compliance determinants from a social perspective relates to taxpayers' willingness to comply with tax laws in response to other peoples behaviour and their social environment (i.e the government, friends and family members) (Torgler, 2007). On the other hand, Kirchler (2007) suggested that social factors should be viewed in a broader sense than Torgler's perspective; this includes the psychology of the taxpayers. The factors discussed in this section are therefore ethics and attitudes toward tax compliance, perceptions of equity and fairness, changes to current government policy and referent groups.

4.3.3.1 Ethics and attitudes toward tax compliance

In a tax system which is based largely on voluntary compliance (such as a SAS), the taxpayers' standard of ethics is 'extremely important' (Song and Yarbrough, 1978: 442). Song and Yarbrough (1978) conducted a survey study in the United States; the objective was to investigate the tax ethics of taxpayers by emphasising and answering the following questions: 1) How high or low was the level of the taxpayers' ethics? And 2) What are the factors impacting tax ethics?

The survey was conducted in a university town (in eastern North Carolina) with over 11,000 university students, more than 600 faculty members and other related university staff and family members. The city selected could not be used as representative of the

whole population of North Carolina, however, the city does have one major characteristic which tends to distinguish it from the conservative, rural, character typical in other areas in North Carolina: the university-environment population make it closer to the national patterns in terms of level of education and demographic factors like age, gender and income. Although this area of the sample (the university town) does not represent the whole population of the United States and thus no generalizations could be made about national populations even in the USA, the researchers believe that the findings generally could produce some 'indication of tax knowledge, attitudes and perceptions of taxpayers in general' (Song and Yarbrough, 1978: 443).

Song and Yarbrough also suggested that due to the remarkable aspect of the operation of the tax system in the United States (that it is largely based on self assessment and voluntary compliance), the willingness to comply with tax laws is determined by ethics, legal environment and other situational factors at a particular time and place. Song and Yarbrough (1978) also indicated that the average taxpayers' ethics scores 60.3 on a scale of 100 and 21 percent of taxpayers had a negative level of tax ethics regarding taxation. Song and Yarbrough labeled this measurement as "barely passing" (p. 451). They were afraid that with the level of tax ethics suggested it had become a disease 'seriously threatening the moral fiber of society and the viability of the democratic system' (p. 451). The study also brought attention to the fact that deterioration of tax ethics in the future may occur due to an increase in the tax burden if the tax law did not get simpler and fairer.

Ethics are a subjective continuum and the level of ethical behaviour is heavily reliant on how people perceive the behaviour being considered (Ajzen, 1988). Studies on tax psychology which predicts people's behaviour using the Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) was first introduced by Fishbein and Ajzen (1975) and Ajzen (1991).These theories attempt to predict people's behaviour based on their intentions. It is assumed that ethics encourage individuals to act according to them and a taxpayer with a negative attitude towards tax evasion tends to be less compliant (Kirchler *et. al.,* 2008).

Surveys conducted in Germany (Schmolders, 1960, 1964[94]) reported that tax evasion was committed by approximately half of the respondents. On the other hand, only one-third perceived tax evaders as criminals. Orviska and Hudson (2002) and Trivedi, Shehata and Mestelmen (2004) found a significant (but weak) relationship between tax evasion and ethics. Elffers, Weigel and Hessing (1987) earlier found that ethics, attitudes and moral beliefs impacted upon tax compliance behaviour according to their psychological model of tax compliance.

The evidence clearly shows various attitudes towards taxation, such as tax ethics and the fairness of the tax system and that these have an influence on the inclination towards tax evasion (Jackson and Milliron, 1986). It is consequently important to get more details about how these attitudes are influenced. Roth *et. al.* (1989) identified two primary

[94] Cited in Kirchler, Hoelzl and Wahl (2008)

factors in taxpayer compliance, namely financial self interest[95] and moral commitment. Individuals comply with tax laws because it is in their own financial interests to minimise their tax bill, but also because of their perceived moral obligation to obey tax laws. Roth *et. al.* (1989) validates that there was a consistently positive relationship between moral commitment and compliance behaviour. Roth *et. al.'s* (1989) finding seems to theorise that ethics have a positive effect on compliance behaviour, more so than financial self interest. Ajzen and Fishbein (1980) claimed that the best predictor of a person's behaviour is ethics, but argued that this link can be disrupted by the passage of time, unforeseen events or new information. In addition, low involvement behaviours are likely to be based on few, weakly-held or possibly unstable views.

In summary, as suggested by previous studies (see Kirchler *et. al.,* (2008); Trivedi *et. al.* (2004); Orviska and Hudson (2002); Jackson and Milliron (1986)), attitudes and ethics remain important in determining evasion behavior. Based on Ajzen (1991) the theory of reasoned action or the intention to evade will encourage a taxpayer to behave negatively toward taxation and thus attempt to under-report income. On the other hand, attitudes towards the tax authority are also important as tax attitudes and ethics generally depend on perceived use of the money collected by the government (Kirchler *et. al.,* 2008). The following subsection discusses the influence of perceptions of equity or fairness on compliance.

[95] Which assumes individuals maximise their expected utility by reporting an income that balances the benefits of successful evasion against the consequences of detection.

4.3.3.2 Perceptions of equity or fairness

As earlier mentioned by Smith (1776), one of the main principles of the taxation system design is equity or fairness, which can be perceived via two dimensional views – horizontal equity (people with the same income or wealth brackets should pay the same amount of taxes) and vertical equity (taxes paid increase with the amount of the tax base). The driving principle behind vertical equity is the notion that those who are more able to pay taxes should contribute more than those who are not.

Wenzel (2003) suggested three areas of fairness from the taxpayers' point of view (social psychology): 1) distributive justice (viewed as the exchange of resources i.e. benefit and cost); 2) procedural justice (viewed as the process of resource distribution) and 3) retributive justice (viewed as the appropriateness of sanctions when norm-breaking occurs).

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In distributive justice, an individual is concerned about the fairness of their actions, and wants to be treated in relation to his merits, efforts and needs (Kirchler *et. al.*, 2008). If he feels that his tax burden is higher than other people within the same income group, his tax compliance probably decreases more widely at group levels; taxpayers want a fair treatment of their group relative to other income groups. If a specific group perceives that their tax liability is higher than other groups, then tax evasion might occur among the group members (Spicer and Becker, 1980). At a society-wide level, tax compliance is less likely if the perception is held that the tax system is unfair; wide scale tax evasion is

likely to occur (Allingham and Sandmo, 1972; Barjoyai, 1987). In contrast, if the society perceives that the tax system is equitable and fair, voluntary compliance is expected to increase.

With regard to procedural justice, the main elements for perceived fairness are neutrality of procedures used, trustworthiness of the tax authorities, and the polite, dignified, and respectful treatment of taxpayers as individuals or groups. (Tyler and Lind, 1992). Taxpayers expect that tax authorities will provide sufficient information about the tax law and regulations so that they can complete their tax return as accurately as possible. It is argued therefore that increased information about tax law and regulations can increase fairness perception and compliance (Wartick, 1994). Retributive justice, unreasonable and intrusive audits and unfair penalties lead to stressful and dissatisfied taxpayers (Spicer and Lundsted, 1976). Unfavorable retributive justice perceptions could lead to non compliant behaviour and consequently increase tax evasion and inflate the tax gap.

Spicer and Becker (1980) examined the relationship between fiscal inequity and tax evasion. An experiment (simulation of completing a tax return) of 57 University of Colorado students, revealed that high income groups ("high-tax group"[96]) had the highest percentage of tax evasion cases compared to other groups ("low tax and medium tax group"). Variables like perceived relative tax rates, gender mean tax resistance score, age and income correlated significantly with tax evasion. Furthermore, they also suggested that tax evasion increases (decrease (this doesn't seem to make sense – why increase and

[96] "High tax group" refers to those participants who were told that their tax rates were higher than average.

then decrease?)) when taxpayers perceive fiscal inequity (equity) because they feel to be victimised by an imbalance of income redistributions.

In summary, the beneficiaries of income equity and what forms of inequity are likely to affect evasion behaviour are still unclear and debatable based on results of prior research. The perceived fairness of the tax system also has an influence on the inclination towards tax evasion (Jackson and Milliron, 1986; Richardson, 2008). In the next subsection, changes to current government policy with regard to tax compliance are discussed.

4.3.3.3 Changes to current government policies.

Political stability and the ruling government party in a country might play a significant role in determining tax evasion behaviour. For instance, if an individual favours the current ruling government party, he might choose to be compliant because he believes that the government is trusted, efficient and equitable. Conversely, a taxpayer from the opposition party might be more noncompliant because he perceives that the government is not on his side.

In addition to the political affiliation, changes of current government policies might also impact tax compliance behaviour. For example, unlike in the UK, in Malaysia, petrol prices and some basic needs like sugar, wheat flour, rice and cooking oils are controlled

by the government and the prices regularly increase according to global economic and government financial situations. Thus, increasing these resources has a negative impact on taxpayers' purchasing power and finally may encourage taxpayers to evade tax. Kim (2008) in his study on tax evasion in 50 countries each year[97] illustrated these points and concluded that tax evasion is influenced by price control (positive direction), public service (positive), collected corporate tax (positive), GDP per capita (positive), tax system (positive) and the composition of government spending (positive).

Hasseldine and Hite (2003) examined whether attitudes toward the federal income tax system and the tax rebate vary by political party affiliation in the United States. Using data from a randomised telephone survey they found that political party affiliation impacted upon taxpayers' behaviour. Consequently, any study of taxpayer attitudes would benefit from examining whether the attitudes are dependent on underlying political affiliations. Hasseldine and Hite's study examined two potential influences on taxpayer attitudes, namely political party affiliation and attribute framing. Since tax attitudes may be influenced by one's political preferences, taxpayer attitudes towards the current system are tested for differences by political affiliation (Democrat, Republican, and Independent in this case). McGowan (2000) suggested that taxpayers who support the Republican Party were more likely to prefer flat tax and sales tax systems than were Democrats and Independents.

[97] Observations made more than 50 countries each year 1998-2000. However the valid number of observation is limited to 129 with all variables included in the model.

Hasseldine and Hite (2003) also found that age, income and expected refund status were significantly associated with political party affiliation. Regression analyses were computed on the overall attitude toward the current income tax system, and on the attitude toward the tax rebate to support the earlier findings. Independent variables such as political party, framing effect, expected tax status (refund or balance due), age, and income level were again regressed with tax evasion behaviour and the study posits that there is a significant political party effect on tax rebate attitude. Hasseldine and Hite (2003) concluded that firstly, political party affiliation has a significant impact on taxpayers' behaviour; secondly, the more closely identified the tax provision is to a specific party, the more favorably it will be received by members of that party relative to taxpayers with other political party affiliations; thirdly, the policy changes (the 2001 tax rebate) in this particular case tended to be viewed positively by taxpayers (i.e. creating an increase in taxpayers trust and in voluntary compliance), and those who did perceive it positively also tended to perceive the current system as more fair.

In summary, previous studies have evidenced that the government decision and changes to policies in accordance with the economic and political situation have a significant impact on compliance. For example, a positive move made by the government such as an increase in tax rebate (see Hasseldine and Hite, 2003) is likely to increase taxpayers' compliance. The next subsection discusses some evidence of the influence of referent groups on compliance.

4.3.3.4 Referents groups (family and friends)

Research in ascertaining the importance of referent groups i.e family members and friends in tax compliance is limited although Ajzen (1988) and Ajzen and Fishbein (1980) (in their Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)) theorised that referent groups play a significant role in determining people's intentions and behaviour. However, researchers in tax compliance did not take this variable into consideration (for example Mohani, 2001; Loo, 2006; Loo and Ho, 2005: Andreoni *et. al.*,1998; Sandmo, 2005; Manaf, Hasseldine and Rodges, 2005).

In other disciplines of research, Guo *et. al.* (2007) found that TRA and TPB could predict smoking behaviour among youngsters in China. However, TRA can better predict smoking among students with lower than 'normal' perceived behavioural control. William and Keith (1983) investigated on insurance-buying behaviour and found that the insurance-buying behaviour seems to be a personal decision, and was influenced by only the immediate family or closed friends. Subjective norms play a major role in determining the intention to buy insurance but this was restricted to closed referents (parents and closed friends). Crosby and Muehling (1983) examined student attendance in art in a university in the USA. They also found a similar result to William and Keith (1983), where students' attendance decision was also influenced by close friends.

As for tax evasion discipline, decisions either to evade or not to evade tax sometimes are influenced by family members or friends (i.e. according to Allingham and Sandmo, 1972)

although the extent of the influence was not clearly stated in this research. Spicer and Lundstedt (1976) included the importance of referent groups in a wider continuum in which they used heads of families in Central Ohio as the respondents. Spicer and Lundstedt's belief was that the head of the household "…would most likely manage tax matters or play a major role in managing them." (p. 299). Judging from this statement although it is not explicitly stated, the head of household would have power to influence other members of the family in tax matters. Following Spicer and Lundstedt (1976) and Allingham and Sandmo (1972), Clotfelter (1983) also claimed that referent groups play a significant role in evasion although it was also not clearly discussed which was stronger (family members or friends) in this paper. Hasseldine, Kaplan and Fuller (1994) report that the numbers of evaders known to the respondent made the largest contribution to the model of under-reporting income which means that the more respondents know the evaders, the more under-reporting of income may happen.

In summary, other disciplines of research as well as tax compliance have evidenced that the influence of friends and family members in making decisions may be important. Therefore, the influence of referent groups is seemingly important in making a decision, particularly involving monetary aspects and the obedience to laws (tax compliance).

4.3.3.5 Summary

In conclusion, this section has discussed the impact of social factors on compliance including ethics, perceptions of equity or fairness, changes to current government policy

and referent groups. In the following section, tax compliance determinants with regard to individual factors are discussed.

4.3.4 Individual factors

Decisions either to evade or not to evade taxes are heavily reliant on taxpayers' personal judgment (Barrand, Harrison and Ross, 2004). Other influences, such as that of peers might also affect the decision, but the final decision is made by the individual. Personal circumstantial factors like personal financial constraints and awareness of penalties and offences are therefore likely to have a significant impact on taxpayer compliance behaviour.

4.3.4.1 Personal financial constraints

Personal financial constraints are believed to have an impact on tax evasion as financial distress faced by an individual may encourage him to prioritise what has to be paid first as basic survival needs (foods, clothing, housing etc.) or where immediate demand on limited income is enforced (i.e perceived threat of action from money lenders etc.) rather than tax liabilities. People who face personal financial problems are likely to be more prone to evade tax when compared to people in less financial distress (Mohani and Sheehan, 2004; Mohani, 2001).

Conversely, however Vogel (1974) and Warneryd and Walerud (1982) illustrate that people with no financial distress also exercise tax evasion and surprisingly, the level of evasion they exhibit can be more serious than people in financial distress. Vogel presumed that this situation is related to economic status rather than personal conditions. Similarly, Webley and Halstead (1986) indicated that perception of economic deterioration is only one way that strain may be conceptualised while Besley, Preston and Ridge (1997) report that economic downturn may have been a factor in poll tax non-compliance in England. An additional explanatory argument for these findings may be that those with greater financial capability are less concerned by the fixed penalty solutions typical in many SAS as they have the resources to pay these penalties if caught evading, which those with greater financial constraints do not. (i.e the threat of penalties being imposed is less of a concern to those with greater financial resources).

Hence, based on previous studies, personal financial distress appears to be a significant factor in tax evasion but the degree of the impact is uncertain. The implementation of SAS in a country in which requires the tax payment made together with submission of the tax return might affect the compliance decision among taxpayers, especially those who have financial problems. Table 4.5 summarises the findings in relation to tax compliance and financial distress.

Table 4.5: Relationship between financial constraint and compliance

Variable	Year	Authors	Key findings
Financial constraint	1974	Vogel	Improved economic status also evades taxes more than deteriorate ones.
	1982	Warneryd and Walerud	Financial strain is not a significant factor for tax evasion.
	1986	Webley and Halstead	Perception of economic deterioration is only one way that strain may be conceptualised.
	1997	Besley, Preston and Ridge	Economic hardship may have been a factor in poll tax non-compliance in England

Source: Mohani (2001) p. 54.

In summary, personal financial constraints appear to be an important determinant in tax compliance. Although some authors posited that taxpayers who are facing financial constraints during economic recessions tend to be less compliant, however, other authors found that financial constraints also appear to be significant in normal economic situations. The following section describes the relationship between tax compliance and taxpayers' awareness of offences and penalties.

4.3.4.2 Awareness of offences and penalties

A theoretical economic model introduced by Allingham and Sandmo (1972) has clearly indicated that penalties as well as audit probability have an impact on tax compliance.

The higher the penalty and the potential audit probability the greater the discouragement for potential tax evasion. However, the more complex models like principal agent theory and game theory suggest that penalties and audit probability are difficult to portray in compliance models as the results are determined endogenously with tax cheating (Andreoni *et. al.*, 1998). Andreoni *et. al.* suggested that to overcome the endogeneity it is necessary to control the enforcement environment artificially by using laboratory experiment methods. This has been evidenced by Beck, Davis and Jung (1991) and Becker, Buchner and Sleeking (1987) through their experiments in which they found that penalty rates affect tax compliance in accordance with the theory. However, an experimental approach does limit the environment to a narrow perspective compared to the real world. Bryman and Bell (2003) suggested that an experimental approach is only suitable for a study that can be addressed with a high degree of experimental arrangement and control. Nevertheless, an experimental approach for a tax compliance study might show a smaller effect or influence than for direct observation (Alm, Jackson and McKee, 1992). In addition, Marrelli (1984), Wang and Conant (1988), Gordon (1990), Marrelli and Martina (1988) found that penalty rates have a negative association with evasion. In contrast however, Virmani (1989) indicated results the other way around, in which penalty rates had a positive association with evasion, meaning that higher rates did indeed encourage people to cheat.

In summary, since previous studies indicate that penalty rates impact upon tax compliance behaviour, the awareness of offences was presumed to have a significant influence as well. If the taxpayers are aware of the offences they are committing when

evading tax and the consequences of being non compliant taxpayers, they might reduce their tendency to evade tax. On the other hand, if they are not aware of the implications of being dishonest in terms of the offence they are likely to be charged with if caught, they might be more inclined to cheat because they presume that they will not be detected and could save money. Thus, educating taxpayers and keeping them well informed with the sentences of being an evader may be important, as a prevention measure is better than cure (imposition of a penalty).

4.3.4.3 Summary

In conclusion, individual factors including personal financial constraints and awareness of offences and penalties appear to be important in determining taxpayers' behaviour. People with no financial constraint also tend to evade tax although they are capable of paying the tax liabilities (see Vogel, 1974 and Warneryd and Walerud, 1982). Taxpayers' awareness of penalties and offences is also a factor believed to encourage compliance in order to avoid penalties and sanctions. The following section discusses other factors such as age, gender, income levels and education that potentially influence tax compliance behaviour.

4.3.5 Other factors

This section describes other factors (predominantly demographic) that previous research has illustrated may affect tax compliance behaviour. These include age, gender, general level of education and income level. These are the most common variables used in tax compliance research (Devos, 2005).

4.3.5.1 Age

Demographic factors such as age have long been studied by researchers; however the findings from different studies remain inconclusive. For example Tittle (1980), Warneryd and Walerud (1982) and Wahlund (1982) posit a negative association -i.e older people are less compliant. In contrast, Clotfelter (1983), Dubin and Wilde (1986) and Beron *et. al.* (1992) argued that age was positively related with compliance. However, there have been a significant number of studies that have found no relationship (See Spicer and Lundstedt ,1976; Spicer and Becker, 1980 and Porcano, 1988). Table 4.6 summarises some key findings on the relationship between age and compliance.

Table 4.6: Some previous studies on the relationship between age and compliance

Variable	Year	Authors	Country of study	Data collection and sample size	Key findings
Age	1976	Spicer and Lundstedt	USA	Survey 130 middle and upper income households	Indeterminate relationship
	1980	Spicer and Becker	USA	Experiment, 57 students	No significant relationship-age did not affect compliance
	1982	Warneryd and Walerud	Sweden	Survey, 426 adults	Negative association-older people less compliant
	1983	Clotfelter	USA	Survey, 47,000 tax returns from IRS TCMP	Age has positive correlation with evasion. Middle age group less likely to comply
	1984	Wallschutzky	Australia	Survey	Evaders come from an older group
	1992	Wahlund	Sweden	Survey	Negative association-older people less compliant
	1997	Wearing and Headey	Australia	Survey	Negative link between age and non-compliance
	2000	Chan, Troutman and O'Bryan	USA and Hong Kong	Survey	Age has a direct, positive effect on income and a direct, positive (negative) effect on education in US (Hong Kong)
	2001	Mohani	Malaysia	Tax returns audits, 507 samples throughout Malaysia	Older people above 50 years less compliant.
	2006	Loo	Malaysia	Survey, 322 samples pre SAS, 478 post SAS	Middle aged (30-50) less compliant

2007	Torgler	Switzerland	Experiment	Age has a positive association with compliance

** TCMP – Taxpayer Compliance Measurement Programme*

Source: Based on Mohani (2001) p. 39.

Chan *et. al.* (2000) also concentrated on age and compliance behaviour and further suggested that age has a direct, positive effect on income and a direct, positive (negative) effect on education in the US (Hong Kong). These inconsistent findings are explained by Torgler (2007) as first, age does not impact compliance in all taxpayers; secondly, inconsistent non-compliance definitions used in the research; third, the effect on taxpayers compliance is diluted when age is associated with a number of other variables and fourth, the assessing interaction of age with other variables is problematic.

In summary, previous studies have evidenced that age could have various effects on compliance, for example age has a negative effect on compliance (i.e. Tittle (1980); Warneryd and Walerud (1982) and Wahlund (1982), positive effect (Clotfelter (1983), Dubin and Wilde (1986) and Beron *et. al.* (1992)) and some studies have found no relationship at all between age and compliance (Spicer and Lundstedt (1976); Spicer and Becker (1980) and Porcano (1988). The next subsection discusses the relationship between income level and tax compliance.

4.3.5.2 Income level

Jackson and Milliron (1986) found that income level has a mixed and unclear impact on compliance, a theory also supported by Christian and Gupta, (1993) and Hite (1997). Although Jackson and Milliron did not clearly elaborate on the reasons for this finding, it is presumed that the endogenous tax regulations among countries might contribute to the inconsistent findings. For example, progressive tax rates might encourage high income groups to evade rather than lower income groups because their (high income groups) tax rates and taxable income are high, thus making the tax liabilities much higher than those in the lower income group. For example Wallschutzky (1984) in his study in Australia and Loo (2006) in her study in Malaysia found that high income earners were less compliant. These studies have evidenced that income level has a significant impact on compliance. In contrast, high income earners are likely to be more compliant rather than lower income earners, as suggested by Wearing and Heady (1997) and Torgler (2007). In a country where the income redistribution is not satisfying[98], higher income groups tend to evade more (Mohani, 2001) because a high income earner might feel the tax system is not treating him fairly.

According to the Fischer Model (see next section for further information on this model and Chan *et. al.* 2000), non compliance opportunities based on income level can be affected directly and indirectly through attitudes and perceptions. Results of Chan *et. al.* (2000) suggest that income level is unrelated to compliance among US and Hong Kong

[98] i.e. Tax revenue is being spent unwisely.

taxpayers. Previous literature therefore suggests the direct relationship between income level and tax compliance remains unclear (Jackson and Miliron, 1986; Roth *et. al.*, 1989). Table 4.7 summarises some previous findings on the relationship between income level and compliance.

Table 4.7 : Some previous studies on the relationship between income level and compliance

Variable	Year	Authors	Key findings
Income level	1977	Frank and Dekeyser-Meulders	High income earners professional-extensive tax evasion in Belgium.
	1981	Mason and Lowry	Middle income earners were more compliant than low income earners.
	1984	Wallschutzky	Higher income earners in Australia are more prone to evade taxes.
	1985	Witte and Woodbury	Middle income earners were more compliant than high and low income earners.
	1993	Christian and Gupta	Income level is negatively correlated with evasion.
	1997	Wearing and Heady	Lower occupational status, earn less and without family responsibilities tend to evade taxes more.
	1998	Andreoni *et. al.*	The impact of income on compliance in the USA is inconclusive (analysis through IRS data, surveys and experiments)
	2000	Chan *et. al.*	Income level is found to be unrelated to compliance among US and Hong Kong taxpayers.
	2001	Mohani	Middle and high income earners in Malaysia less compliant (RM12,000 – 50,000)
	2003	Park and Hyun	Income levels have no effect on compliance in South Korea
	2006	Loo	High income earners in Malaysia prone to evade tax.
	2007	Torgler	Lower income earners in Western Germany less compliant.

Source: Based on Mohani (2001) p. 45.

Despite the mixed negative and positive associations of income levels with tax compliance, there are studies that found insignificant results that should be perhaps also noted: for example, Park and Hyun (2003) in their experiment in South Korea found that income levels had no significant effect on tax compliance. Chan *et. al.* (2001) also found the same results as Park and Hyun. Andreoni *et. al.* (1998) in their triangulation study using a combination of IRS data, surveys and experiments suggested that the impact of income on compliance in the USA is inconclusive.

Therefore while some research, income levels are the most important determinant of compliance (e.g. Kirchler, 2008: 116), other previous studies, however, have shown that the impact of income on compliance is still unclear and the relationship between the two variables needs to be investigated further and it is perhaps not linear, as many studies implicitly assume (Kirchler, 2007: 199). Tax evaders should have an incentive to report at the top of a tax bracket rather than at the beginning or in the middle range, whereas honest taxpayers should report their income, independent of where it falls within a tax bracket (Kirchler 2007). A higher level of education, perhaps, would lead to a better income level and would improve one's tax knowledge; consequently this might eventually change one's attitude towards compliance (Loo, 2006: 107).

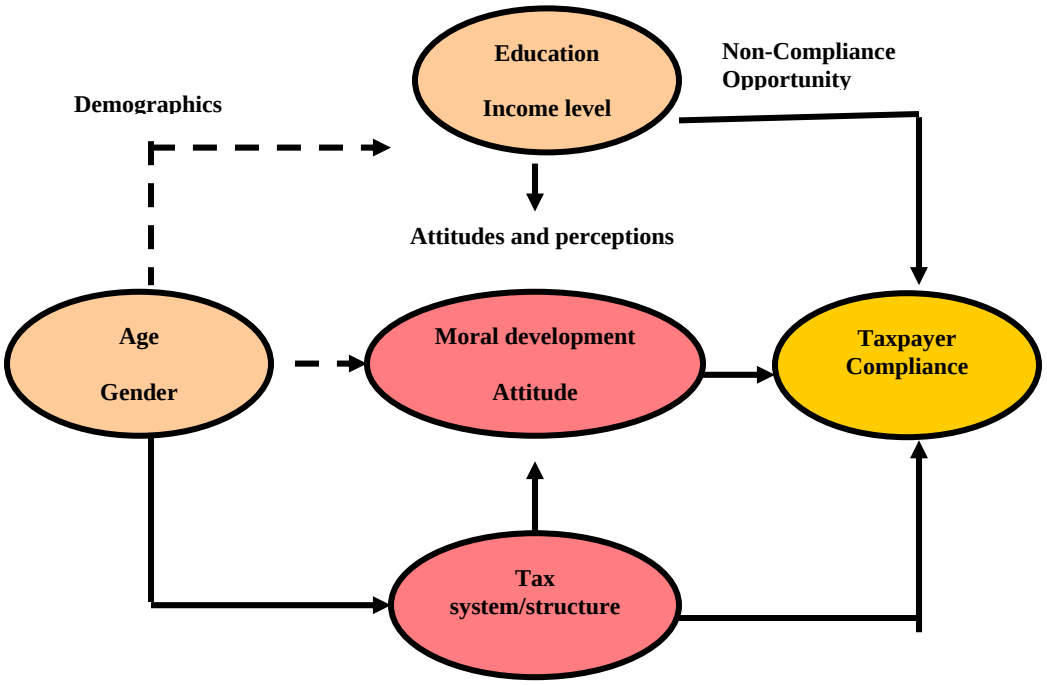
4.3.5.3 Culture

Chan *et. al.* (2000) also explored whether taxpayers' compliance is influenced by cultures as part of their study, they explored similarities and differences in taxpayer compliance behaviour between the USA and HK. Their study validated the empirical link established in prior research between moral beliefs and taxpayer compliance (Hanno and Violette, 1996; Hite, 1996); simultaneously, they modeled and tested all the major constructs articulated in the Fischer *et. al.* (1992) model (Fischer Model) namely demographic, noncompliance opportunity, attitudes towards and perception of the tax system and, of particular interest to this section, explored the potential effects of an additional construct: cultural difference on taxpayer compliance in an international setting as suggested by Andreoni *et. al.* (1998). The reason why the study made a comparison between the USA and HK was due to a number of structural differences between US and HK tax systems. HK uses a proportional tax rate structure, no periodic withholding, a mandatory provisional tax, no capital gains tax and no self assessment mechanism whereas the USA uses a progressive tax rate structure, periodic withholding, no provisional tax, a capital gains tax and a self assessment mechanism. Both countries also have significant problems with taxpayer non-compliance.

Chan *et. al.'s* (2000) results suggest that the Fischer Model is a viable conceptual framework for the study of tax compliance. However, this illustrated that the Fisher model could be more meaningful, realistic and reliable if a cultural construct was included in the model (Chan *et. al.*, 2000 and Figure 4.4). Chan *et. al.*'s surveys of 158 in

the USA and 86 in Hong Kong[99], revealed that cultural differences in both countries had significantly changed taxpayers' attitudes towards taxation which meant that culture plays a significant role in determining tax compliance behaviour.

Figure 4.4: Fischer, Wartick, and Mark's (1992) model of Taxpayer Compliance



Source: Chan et. al. (2000) p. 95.

Richardson (2008) studied the relationship between culture and tax evasion across 47 countries including the USA, the UK, Argentina, Japan and Malaysia. Cultural dimensions are represented by power distance (PD), individualism (IDV), uncertainty

[99] Of this number, 101 US and 56 Hong Kong respondents were included in the analysis.

avoidance (UA) and masculinity (MAS) (Based on Hofstede, 1980. See Richardson 2008, p. 69 and 72). The purpose of the study was to examine the relationship between Hofstede's (1980) cultural dimensions and tax evasion across countries, using several measures of tax evasion. Richardson found that uncertainty avoidance (UA) and individualism (IDV) had a significant impact on evasion across countries which meant that the higher the level of uncertainty avoidance and the lower level of individualism, the higher the level of tax evasion across countries. The study also showed that culture remained an important variable in determining tax evasion decisions across countries (especially in developing countries) thus suggesting that the policymakers should consider cultural variables alongside legal, political, and religious variables.

In summary, culture has a significant impact on compliance, and different cultures in various countries provide different levels of tax compliance. In addition, different definitions and variables used in the studies also become important factors in determining the association between culture and compliance (see Richardson, 2008). The following subsection describes the relationship between education levels and compliance.

4.3.4.4. Education

According to the Fischer Model, non compliance opportunities can affect tax compliance both directly and indirectly through attitudes and perceptions. Chan *et. al.* (2000) investigates the direct and indirect effects of two noncompliance opportunities, namely educational and income level. Previous literature supports the direct, negative

relationship between educational level and taxpayer compliance but a direct relationship between income level and tax compliance is unclear (see previous section 4.3.5.2 and Jackson and Miliron, 1986; Roth *et. al.,* 1989). Chan *et. al.* (2000) also postulate that greater education is directly linked to a likelihood of compliance. They argue that educated taxpayers may be aware of non compliance opportunities, but their potentially better understanding of the tax system and their higher level of moral development promotes a more favorable taxpayer attitude and therefore greater compliance. Chan *et. al.* also suggested that those with a higher education level are more likely to have a higher level of moral development and higher level attitudes toward compliance and thus will tend to comply more.

Hite and Hasseldine (2001) investigate the current developments in the USA, highlighting that tax academics need to emphasise teaching and development. In other countries, tax education, as well as tax development is not as good as in the USA. Their study was expected to be able to help academics in other countries to adapt what has been done in the USA, especially in teaching methodology (in tax courses) so that other countries can learn how to educate taxpayers more effectively and efficiently.

Traditionally, the US taxation courses are taught within accounting departments only. The first paper introduces students to personal taxation; by the end of the course, the students will be able to prepare the tax return. The weaknesses of this method had been commented upon by Jones and Duncan (1995). They noted that this narrow approach in the long run does not fulfill the education needs for the students because most students

are not aiming to become accountants or tax professionals. Jones and Duncan added that a first taxation course should be broader in nature so that the students will be able to relate taxation aspects to other related fields such as accounting, financial economics and perhaps law. This scenario happened in other countries as well, when the education systems itself indirectly narrowed the students' mindset to be focused only on a taxation field without then relating this to other fields (Craner and Lymer, 1999). A formal tax education is only taught to accounting students in higher learning institutions. Other than this, they could not easily find any tax related courses but in other countries such as the USA, there are a lot of accounting (tax) education programmes offered to the public. While the education levels become more important in increasing tax compliance across countries, Mohani (2001) suggested that one of the measures to increase voluntary compliance is by assuring that taxpayers have a certain level of qualifications, ability and confidence to exercise their tax responsibility. In contrast, the most recent study, by Richardson (2008) also revealed that there is a negative association between education and compliance.

In summary, greater education potentially increases compliance, as educated taxpayers may be more aware of their responsibility as well as the sanctions to be imposed if they were not compliant with tax laws, although other authors found a negative association between education and compliance. The following subsection discusses the gender effect on compliance.

4.3.5.5 Gender

The association between gender and tax compliance has received some attention in prior literature however, findings vary across studies. Some studies found that males are more compliant but others found the other way around (see Table 4.8). Although the agreement among the findings is still in discussion, the need explore this more fully is still relevant especially in a SAS, in order to help tax administrators to plan and determine the framework of their tax audits and help target tax education programmes effectively.

Table 4.8: Relationship between gender and compliance

Variable	Year	Authors	Key findings
Gender	1974 1978	Vogel Mason and Calvin	Males less compliant
	1978	Friedland, Maital and Rutenberg	Females less compliant
	1980	Tittle	Males less compliant
	1986	Jackson and Milliron	Compliance gap between females and males is shrinking over time.
	1984	Grasmick, Finley and Glaser	A new generation of independent non-traditional women may be closing the compliance gap between men and women with regard to tax evasion.
	1993	Kinsey and Grasmick	Males less compliant
	1997	Hite	Females without college degrees tended to be compliant and males without college degree were non-compliant. In contrast, females with college degrees tended not to comply and males with college degrees tended to comply.

2003	Hasseldine and Hite	Female taxpayers were more compliant than males. On the other hand, the study reports that males were more compliant compared to females when a negatively framed message was used, and females were more compliant than males when a positively framed message was used.
2007	Mohamad Ali *et. al.*	Females were more complaint
2008	Richardson	Gender has no significant impact on compliance across 45 countries.

Source: Based on Mohani (2001) p. 42.

Hasseldine and Hite (2003) found that males were more persuaded by negatively framed messages while females were more persuaded by positively framed messages. Although the result of the study can be considered as convincing, nevertheless, this study does not compare with the other two approaches of framing, which are risky choice framing and attribute framing. Levin *et. al.* (1998) mentioned that the research evidence for goal framing is less homogenous than other types of framing because of greater variations in operationalising goal framing.

In summary, the impact of gender on tax compliance is inconsistent, and a recent study by Richardson (2008) contimue to find no association between gender and compliance. A greater longitudinal emphasis could be undertaken to examine the impact of gender as well other important variables on changes in tax evasion levels.

4.4 SUMMARY

Tax compliance (evasion) has been an important subject of research in a large number of developed and a number of developing countries. Since each country has its own approach to managing tax compliance levels and each has different tax laws and regulations, the factors impacting tax compliance behaviour appear to vary among countries. Factors affecting tax compliance can be viewed from various continuums; for example, economists and policy analysts have given increasing attention to tax compliance theoretically and empirically (Clotfelter, 1983).

Cultural difference was a factor that impacted tax compliance in the US and Hong Kong (see Chan *et. al.,* 2000; Richardson, 2008). Tax knowledge appears to be an important element in tax compliance in a SAS but the degree of required level of knowledge varies among countries (see Lewis, 1982; Eriksen and Fallan, 1996; Loo, 2006; Kim, 2008). Economic factors such as tax rates, tax audits and perceptions of government spending as well as institutional factors (the role of the tax authority, simplicity of the tax return and administration, and probability of detection) have both positive and negative associations with tax compliance.

Social factors and individual factors also appear to play an important role in influencing tax compliance. These factors however, are more difficult to control by the tax authority (for example financial constraints faced by taxpayers, ethics, political affiliation and

referent groups) because these factors involve taxpayers' own decisions. Other demographic factors like age, gender, income level and education level also appear to potentially have their own influence on tax compliance.

Generally, policy makers are interested in tax evasion for two main reasons: its revenue implications and equity concerns. With tax rates fixed, tax evasion decreases the government's revenue. Reduction in tax revenue attracts policy makers' attention and makes them take steps to alleviate the problem. This is particularly noticeable when the government faces poor fiscal conditions such as serious fiscal deficits and global economy recessions. A further reason that policy makers worry about tax evasion is on equity grounds. Previous research suggests that tax evasion levels vary across age, gender, income and education etc. These variations inevitably result in an equity problem among various groups of citizens: citizens who cannot or do not evade taxes raise an equity issue against those evading them.

In conclusion, although various studies have been undertaken to determine as accurately as possible the factors that impact upon tax compliance behaviour, undoubtedly, the government should consider seriously the characteristics of non compliant taxpayers, review current regulations and possibly as a result, increase audit rates and penalty rates (enforcement) as well as attempting to build good relationships with taxpayers in seeking to improve general tax compliance levels.

In the remainder of this thesis I will explore how the various determinants prior literature has indicated may have an impact on tax compliance apply in a developing country migrating from an official/direct assessment system to a SAS with the aim of providing further evidence on how these determinants apply in this situation to add to the general literature in the field of tax compliance studies, specifically this research will add to our understanding of tax compliance in developing countries where literature on the extent to which determinant of compliance in developed countries apply to different countries Is very limited at present . In Chapter 5, I will discuss the research design and methodology employed in this study including the questionnaire, sampling design, hypotheses development and data analysis techniques.

CHAPTER 5

RESEARCH DESIGN AND METHODOLOGY

5.1 INTRODUCTION

This chapter describes the research design and methodology involved in the study. The early part describes the survey method used, including the data collection method (survey procedures, sampling frame and development of the questionnaire). Details of the research framework, hypotheses and data analysis techniques are also discussed in the latter part of the chapter.

5.2 DATA COLLECTION METHOD

This section describes the data collection process including the sampling frame and survey procedures, the respondents involved and measures taken to increase the response rates.

5.2.1 Sampling frame and survey procedure

The survey was carried out between June and August 2007. After conducting a pilot survey on a group of 23 lecturers and professionals in various sectors and the public

(non-tax specialists) to improve validity and reliability, as well as to further refine the questions, a total number of 5,500 mail surveys were distributed to individual taxpayers throughout Malaysia who were selected at random from telephone directories. Preparing a survey pack containing a self addressed enveloped and a questionnaire as well as printing recipient addresses and sticking stamps was time consuming. Hence, two batches of dissemination were undertaken; 3,000 and 2,500 surveys were disseminated in each batch respectively. The time gap between both batches was approximately two weeks.

Kasipillai and Baldry (1998) asserted that the selection of samples from local telephone directories may exclude low income earners who are less likely to have a telephone. However, in the Malaysian context two factors help to overcome this potentially results-biasing position. Firstly, many since low income earners are unlikely to lodge tax returns in the Malaysian SAS, their possible exclusion from this survey is not considered to be of major concern given focus is on taxpayers who have had direct experience of the SAS. An individual who earns less than RM25,501 (£4,636.54) per annum does not have to lodge a tax return (IRB, 2010). Secondly (and perhaps more importantly), in Malaysia, phone ownership is very high (refer Table 5.1) and no 'ex-directory' service is available whereby numbers could be unlisted (as typical in the UK for example). Therefore, together, this sampling method in this context, leads to good randomisation with few limitations compared to other sampling approaches for this scale of survey[101].

[101] Alternatively, a list of taxpayers could be obtained from the tax authority. However, it is very difficult to obtain the list as the tax authority is not allowed by the Income Tax Act 1967 to reveal any taxpayers information to the public.

Using a sample from a telephone directory approach is, however, limited in one key output that may alter our results, namely the possibility of the impact of the growth in mobile phone ownership which is becoming significant in Malaysia. In early 2006, mobile penetration passed the 80% mark, with subscriber numbers at the same time passing 20 million[102].

This was up from only 2 million subscribers in 1998. Malaysia has the second highest mobile penetration in South East Asia after Singapore (South East Asian Mobile Communications & Mobile Data Markets Report, 2006). Although the growth of mobile telephones is significantly higher than that of landlines, the ownership of landlines is both classical and traditional –to own a landline is still considered necessary even in households which possess more than one mobile. This can bee seen in Table 5.1 in which the landlines penetration rates remain constant at between 43% to 44% (particularly in 2009 and 2010) despite the significant increase in mobile penetration which occurred throughout the concurrent period. Table 5.1 illustrates the comparison between landline and mobile growth in Malaysia.

[102] Total population in 2000 was 23.27 million compared to 18.38 in 1990 (27.15% increase) (The Population and Housing Census 2000). This figure increased to 27.46 million in 2008 (Malaysia Department of Statistics, 2008).

Table 5.1: Mobiles and landlines penetration rates in Malaysia 2006-2010

Year	Quarter	Landlines Per 100 households	Mobiles Per 100 inhabitants
2006	1	49.2	77.7
	2	49.0	80.8
	3	48.8	81.6
	4	48.4	72.3
2007	1	48.9	77.0
	2	48.6	78.2
	3	48.3	80.8
	4	47.8	85.1
2008	1	46.6	87.9
	2	45.8	90.5
	3	45.4	93.9
	4	44.9	98.9
2009	1	44.7	100.1**
	2	44.5	100.8
	3	44.2	104.1
	4	44.0	106.2
2010*		43.6	108.1

* - *Forecast*
** - *Penetration rate over 100% could occur because of multiple subscriptions.*

Source: Malaysian Communication and Multimedia Commission Report, 2010 (http://www.skmm.gov.my/facts_figures/stats/index.asp)

According to the IRB Annual Report for 2006, the number of registered individual taxpayers is 2,198,914[103] (IRB Annual Report, 2006: 37). This figure includes both taxpayers with employment income only as well as those with employment and business

[103] This figure is based on total number of tax returns distributed to registered individual taxpayers.

income. However, the total of individual taxpayers will probably be higher than this figure because there are a lot of unregistered taxpayers who do not file their tax returns voluntarily. It is impossible to include all the taxpayers as respondents to this survey due to impracticality, cost, time consumption and lack of resources. This study therefore uses probability sampling which is described by Bryman and Bell (2003: 90-93) as the most equal (probability of a sample to be chosen as a sample is equal) sampling method. It is generally assumed that a representative sample is more likely to be the outcome when this method of selection from the population is employed. By using this sampling method, the sampling error can be minimised. Whenever a sample is drawn from a population, only the part of the population included in the sample is measured, and this is used to represent the entire population. Hence, there will always be some error in the data, resulting from those members of the population who were not measured. Error will however be reduced as the sample size is increased (Sekaran, 2000: 286-290).

As this study used telephone directories as the database, non-probability sampling was not applied because if non-probability sampling is employed, each unit in the population did not have equal chance to be selected as a sample. Moreover, non-probability sampling implies that some units in the population are more likely to be selected than others.

This study used cluster (or area) sampling by dividing the population into ten areas based on states (refer Table 5.2). The basis of cluster division was based on the ten area telephone directories produced by TM Bhd. (A public listed cum government owned

company who are granted a sole license to operate landlines in Malaysia, www.tm.com.my) hence some states are combined into the same cluster. The advantages of using cluster sampling are: convenience to obtain the data and the fact that the cost of sampling from the entire population is reduced because the scope of study is reduced to clusters. The cost per respondent is usually lower than stratified sampling because of lower respondents' listings or locating costs. The time and cost of contacting respondents of the population can also be reduced, for follow up calls. In addition, cluster sampling will also reduce the distance between the sampled elements of population (Black, 2001: 219-220). Table 5.2 illustrates the clusters involved in this study:

Table 5.2: Clusters and states involved

Cluster no.	States
1	Selangor/Kuala Lumpur
2	Perlis/Kedah
3	Pulau Pinang/Perak
4	Melaka/Negeri Sembilan
5	Johor
6	Kelantan
7	Terengganu
8	Pahang
9	Sabah/ Labuan
10	Sarawak

In this study, a national survey covering ten regions throughout Malaysia has been undertaken. 5,500 mail questionnaires were disseminated to the respondents, using telephone directories as the database. 1,073 (19.51%) usable responses were received and analysed (refer to 5.2, and Table 6.1). The response rates were considerably higher than other studies in Malaysia undertaken on tax compliance to date (refer to Table 5.3), perhaps due to the strategic timing of dissemination (July – August, a few months after

taxpayers had gone through filing process), the appearance of the questionnaire and the use of follow up calls (refer to 5.2.3). The numbers of responses also compare very favourably with other studies on tax compliance in other countries. The questionnaire was developed based on Kogan and Wallach (1964), Troutman (1993), Chan *et. al.* (2000), Harris (1989), Eriksen and Fallan (1996), Loo (2006) and Income Tax Act 1967 (refer to 5.3.1.1, 5.3.1.2 and Appendix 5). These previous studies contributed to this study particularly in developing the wording and approach used in the questionnaire because asking unethical questions (i.e tax compliance) would be embarrassing and would cause sensitivity.

Evans *et. al.* (2005) asserted that a mail survey is the most effective way to reach large number of respondents residing in a large geographical area and could provide the opportunity for respondents to complete the questionnaires at their own leisure as well as reducing the risk of the researcher influencing responses. The questionnaire design developed by Evans *et. al.* (2005) was adopted to meet some objectives of this study such as 1) user friendliness (the questions were short and simple to encourage legibility and high response rate); 2) administrative simplicity (A3 paper was folded to make an A4 questionnaire booklet so that the researcher can minimise the time in stapling and collating the booklet); 3) comprehensiveness (the total number of questions was 48 for SMEs and 37 for tax practitioners). Also, following Evans *et. al.*'s study, the survey questionnaire used in this study was made available in both Malay and English languages to help reduce the impact of language being a barrier to completion; in addition, the A4 paper being folded to make a booklet made for easier completion by respondents.

Some previous studies in Malaysia which also used mailing surveys have shown that the average response rates were between 16% and 34%. Table 5.3 exhibits some recent evidence on mail surveys as well as other research designs in Malaysia in relation to tax studies:

Table 5.3: Previous data collection methods in Malaysia (tax studies)

Year	Authors	Methodologies	Total questionnaires distributed	Total usable questionnaires returned	Response rates
2008	Pope and Abdul Jabbar	Postal surveys to SMEs	1,300	175	13.5%
2007	Mohamad Ali, Hajah Mustafa and Mohd Asri	Experimental design involving postgraduate students (individual taxpayers) in local universities.	NA	NA	NA (42 subjects from experimental group and 46 subjects from control group)
2006	Loo	Postal survey involving random sampling via telephone book directories	6,000	939	16%
2006	Manaf, Hasseldine and Hodges	Postal survey involving random sampling. The addresses were obtained from every state government.	750	179	24%
2005	Loo and Ho	Survey cum meetings with respondents to salaried white collars middle and senior	250	106	42.4%

		employees in the state of Malacca only.			
2004	Ming Ling, Obid and Meera	Postal survey using systematic sampling.	572	192	34%
2003	Kasipillai and Abdul Jabbar	Postal survey involving random sampling from telephone directory.	150 selected	41 agreed to interview	27.3%
2002	Junainah	Survey on salaried individuals from selected companies in the state of Sabah. Simple random sampling was used.	300	195	65%

Based on Table 5.3, the highest response rate, 34% was represented by a study conducted by Ming Ling, Obid and Meera (2004) whose subjects were tax practitioners, while other studies involved personal taxpayers as the subjects. Since the target for usable questionnaires returned for this study was 1,000 (to achieve the highest sample and statistically relevant sample, refer Table 5.3), therefore, a total of 5,500 survey disseminated was considered valid and reasonable.

Bryman and Bell (2007:143) asserted that there are a number of weaknesses of using questionnaires rather than interviews which include tendency to closed questions, as open

questions are more difficult and time consuming, to complete so respondents might be unwilling to answer them. In addition, in agreement with Bryman and Bell (2003:144), Sekaran (2000:250) and Das Gupta (2008) suggest that mail questionnaires will always get a low response rate; for instance, around 30% is acceptable. In addition, as the researcher is unable to clarify the questions since most of the questions are close-ended, follow up procedures for non-responses are necessary.

In contrast, according to Spicer and Lundstedt (1976), the strength in using questionnaires is it evokes honest responses and also produces a valid indirect measure of behaviour. They also argue that responses obtained are directly related to the individual's own propensity to commit tax evasion by ensuring the respondents of complete confidentiality. Elffers *et. al.* (1992) added that self reporting (where taxpayers are asked to self disclose their compliance behaviour) is the most popular method in tax evasion studies and still a dominant strategy in research in this field.

In summary, notwithstanding the weaknesses, and in agreement with Spicer and Lundstedt (1976), Bryman and Bell (2003:142) and Sekaran (2000:252-253) conversely suggest that there are particular advantages that overwhelm the disadvantages, including cheaper and quicker administration, absence of interviewer effects, high anonymity, access to wide geographic reasons, the potential for the inclusion of token gifts if requires and the fact that it is convenient for respondents to respond to questions and easy to disseminate electronically.

5.2.2 The respondents

Like Spicer and Lundstedt (1976), Song and Yarbrough (1978) and Kasipillai and Baldry (1998) this study targets heads of households as a unit of analysis. While this will not provide a complete picture of tax compliance in the country, it is acknowledged (particularly in light of the issue of women now being required to file independently, perhaps for the first time for some), that heads of household are typically the most experienced members of a family unit and, as such, provide the best view of the leading edge of SAS-related tax knowledge currently (Song and Yarbrough, 1978). As exploring the relationship between tax knowledge and tax compliance is one of the main purposes of the study, this limitation is considered to be acceptable, as other household members are unlikely to routinely hold greater tax knowledge than the survey respondents and therefore our results are unlikely to be upper bounded in application even if there are some limitations to be considered in the analysis at the lower bound.

5.2.3 Measures to increase response rates

It has been frequently demonstrated that research using postal surveys will face lower response rates than other more direct methods of distributing surveys. Table 5.3 evidenced that responses from mailing surveys in Malaysia were slightly lower compared to other countries such as the United States, United Kingdom and Australia (refer to Chapter 4). The following measures had been taken into consideration in an attempt to increase the response rates since a survey for tax discipline usually receives less attention from respondents:

5.2.3.1 Survey dissemination timing

To ascertain the quality of results and responses from respondents, this study follows the survey dissemination period suggested by Song and Yarbrough (1978) who timed dissemination of their survey questions in the United States in the months of July and August - a few months after taxpayers there had gone through the annual process of filing the federal and state incomes tax returns. This period was selected because it was argued that the data would be least likely to be biased by any exaggerated and critical feelings about the tax system likely to be highlighted by the filing period. In Malaysia, the equivalent ideal time in the annual tax cycle to disseminate the survey is between May and September and hence our survey was conducted within this window. The due date for individual taxpayers to submit tax returns is on the 30th April (but sometimes extended to 31st May) every year.

5.2.3.2 The questionnaires booklet appearance

The front page of the survey was printed in colour (refer *Appendix 5* – the cover letter). The questionnaires were also printed in high quality style to ensure a clear layout so that respondents would understand that a professional study was being undertaken. In attempting to obtain honest and valid responses from respondents, the logos of the University of Birmingham, the University Kebangsaan Malaysia and the Tax Research Institute, University of Nottingham (the three sponsoring participants) were printed on the cover letter. The cover letter also provided an explanation of the project and its

independence particularly from any tax authority involvement, in an attempt to further reduce bias in responses to the extent this can be done in practice. Bryman and Bell (2003:144) and Hong (2005:51) indicated that mentioning sponsorship of a study is a good way to increase the response rate because respondents will believe that the research is considered valid and has gone through a thorough process of revision and evaluation. Acknowledging these bodies also increases confidence in confidentiality as no link with the tax authority is apparent.

5.2.3.3 Other measures

Apart from timing and booklet appearance, the following steps were also taken into account to attempt to boost the response rates:

- Stamped, addressed, return envelopes were supplied to ensure no cost (other than respondents' time) was associated with completing the survey that may have lead to bias in the respondents.
- After two weeks, follow up calls were made to remind the respondents.
- The content of the questionnaires was as precise as possible to allow respondents to complete them in approximately 20 minutes at most.

5.3 QUESTIONNAIRE DESIGN, VARIABLES DEVELOPMENT AND MEASUREMENT

This section describes the development of the questionnaire and development of variables and measurements used.

5.3.1 The nature of questionnaire

The questionnaire was prepared in both Malay and English versions (in the same booklet) to facilitate respondents and was divided into four sections:

5.3.1.1 Section A – Tax compliance hypothetical questions

This section consisted of eight hypothetical questions related to tax compliance behaviour. This section was developed based on Troutman (1993) and Chan *et. al.* (2000). The development of hypothetical questions was also based on the 'Choice of Dilemma Questionnaire' (CDQ) developed by Kogan & Wallach (1964). Kogan and Wallach introduced a series of CDQ questions to examine human resource risk-based decision making as follows: the central person (based on Kogan and Wallach) in each situation is faced with a choice between two alternative courses of action. Alternative X is more desirable and attractive than alternative Y, but the probability of achieving X is less than that of achieving Y. For each situation, respondents are asked to indicate the minimum probability of success they would require before recommending that alternative

X be chosen. Respondents are asked to indicate their choice on a ten-point scale that ranges from 1 (risk averse) to 10 (risk seeker). Response from this instrument will be summed to derive a relative measure of risk aversion personality. The CDQ test has been used in various studies such as decision making (risk taking) by Cartwright (1971), and human resource management (Nutt, 1986).

Cartwright (1971:1) in his study to examine the effect of group discussion on decisions involving risk claimed that the CDQ is the most suitable method of asking, easy to administer, permits a comparison of findings from different studies, and most importantly, produces replicable results, particularly when examining the propensity of a person of risk taking. A risky shift in CDQ scores has been found by numerous researchers in several different countries and in the variety of subjects (see Nutt, 1986). Cartwright also asserted that the popularity of research employing the CDQ is interesting; different measures of risk, did not find significant differences between individuals and groups. Researchers have continued to use other methods to measure risk, but their results have not led to simple general conclusions when compared to CDQ (Cartwright, 1971).

Nutt (1986) investigated how managers responded with external and internal challenges in order to position their organisation in the market. Managers were given a set of CDQ questions in relation with certain circumstances. He found that, compared to other research methods such as interviews, using CDQ was more accurate and capable of predicting managers' behaviour toward the organisation's achievement.

Therefore, based on Cartwright (1971) and Nutt (1986), since the CDQ has been demonstrated to produce more conclusive findings, particularly in decisions risk taking, it has had greater appeal than other possible approaches. The choice-dilemma paradigm that CDQ is based upon is also suitable to be used in this study. However, some modifications of the hypothetical questions have been undertaken so that variables used in this study were in line with research questions. The degree of adaptation of Kogan and Wallach's CDQ was limited to the style of questionnaire development not focusing on moral reasoning or risk aversion. For example, respondents were required to indicate their actions in relation to tax compliance behaviour (i.e does the probability of being audited encourage taxpayers to be more compliant?) (refer *Appendix 6*).

In this study, the predictors (which affect tax compliance) tested were based on previous literature (refer Chapter 4) namely: i) the probability of being audited (Braithwaite and Braithwaite, 2000; Kirchler *et. al.* 2008); ii) perceptions of government spending; iii) perceptions of equity and fairness of the tax system (Harris, 1989; Troutman, 1993; Richardson 2006; Kirchler *et. al.*, 2008); iv) penalties (Gupta, Lahiri and Mookherjee 1995; Devos, 2005; Kirchler *et. al.*, 2008); v) financial constraints; vi) changes of current government policy such as fuel price increases; vii) referral group; and viii) the role of the tax authority (Kirchler *et. al.*, 2008).

This section required the respondent both to answer Yes/No (*YN*) and to 'tick' a probability that, as a taxpayer they would undertake the same action if they faced the same situation (*PROB*) using a series of hypothetical questions (from 'very low

probability' to 'very high probability', using a Likert scale of 1 to 5, refer *Appendix 6* – the questionnaire). Each question represents an independent variable, hence, eight questions were included in this section – one for each predictor from the prior literature.

To derive a score for each question, the *YN* was initially weighted as 40% ('Yes' = 1 mark, 'No' = 2 marks) while *PROB* was weighted as 60% (1 = 5 marks and 5 = 1 mark). For example, if the respondent answered 'Yes' and ticked 'very high probability', it indicated that he/she was highly non-compliant. The given score for him/her would be 1 ((1*0.4) + (1*0.6)). On the other hand if the answer was 'No' and 'very low probability', it indicated that he/she was highly compliant and would be given a score of 3.8 ((2*0.4) + (5*0.6)).

Instead of using 50:50 weighting ratio (or other ratio), the ratio of 40:60 was used because the nature, length and rigorousness of the questions were different. The 'YN' part of the questions did not require respondents to think a lot - simply to tick either 'Yes' or 'No' while the 'PROB" questions lead respondents to determine which scale (out of five scales) they were on. To increase results' validity, a sensitivity analysis was also undertaken by considering other weighted combinations for *YN:PROB* i.e. 30:70, 50:50 and 60:40. However, multicollinearity tests suggested that there was high correlation among the different ratios tested (.998), hence only the 40:60 ratio was used for the subsequent analysis.

5.3.1.2 Section B – Tax knowledge questions

Section B of the questionnaire consisted of 37 questions related to the respondent's level of tax knowledge and was primarily based on Section 4 (a) to (f) of Income Tax Act 1967[104] as well as studies conducted by Harris (1989); Eriksen and Falllan (1996); Loo (2006); Loo and Ho (2005). (See also Mohamad Ali *et. al.* (2007) and Devos (2008) who also used a similar approach). Harris (1989) conducted an experiment (association between tax knowledge and perception of fairness of the tax system) using video, divided into two phases. Each subject was given 10 scenarios using a 10 point Likert scale ranging from 0 ('allowing this deduction is extremely unfair') to 10 ('allowing this deduction is extremely fair'). Eriksen and Fallan (1996) in their quasi-experiment measured tax knowledge in pre-test and post-test using a score calculated from 12 questions (post test 28 questions) related to tax allowances and tax liabilities. Instead of a 5 point Likert scale, Eriksen and Fallan used 'Yes', 'No' and 'Do not Know' scales in measuring the level of tax knowledge. Those who answered 'Do not know' would receive a score of 2.

[104] Section 4. Classes of income on which tax is chargeable.

"Subject to this Act, the income upon which tax is chargeable under this Act is income in respect of:
(a) gains or profits from a business, for whatever period of time carried on;
(b) gains or profits from an employment;
(c) dividends; interest or discounts;
(d) rents, royalties or premium;
(e) pensions, annuities or other periodical payments not falling under any of the foregoing paragraphs;
(f) gains or profits not falling under any of the foregoing paragraphs".

Loo (2006) used a mixed method approach (triangulation) combining a survey, experiment and case study. The survey instrument consisted of open-ended and closed questions. Unlike this study, Loo's tax knowledge variables were limited to four categories only, namely type of income taxable, relief available, rebates allowable to individual taxpayers and a simple calculation of tax liabilities (p. 132). Similar to the present study however, Loo also used a 5 point Likert scale (1= Definitely yes; 2= Probably yes; 3=Not sure; 4=Probably not and 5=Definitely not). Loo and Ho (2005) attempted to examine the level of tax knowledge in terms of joint and separate assessment, chargeability of income, exemptions, relief, rebates and tax credit using the scale (similar to Eriksen and Fallan, 1996): 1 = Yes; 2= No; 3=Not sure).

Unlike other studies (i.e Eriksen and Fallan (1996); Loo (2006); Loo and Ho (2005); Devos (2005, 2008)), in response to Erikson and Fallan (1996: 399, refer 1.5) this study has divided the level of tax knowledge into seven categories, namely i) knowledge about taxpayers' general responsibilities and rights (three questions); ii) employment income (eight questions); iii) dividend and interest income (six questions); iv) personal reliefs (eight questions); v) child reliefs (six questions); vi) rebates (four questions); and vii) awareness of offences and penalties (three questions). This section required respondents to answer (by ticking) options ranging from the scale of 1 ('if you think the statement given is definitely wrong') to the scale of 5 ('if you think the statement is definitely correct').

Unlike Eriksen and Fallan (1996), the level of knowledge was measured based on the total score of each respondent. In Eriksen and Falllan (1996), respondents with correct

answers received a score of 3 (well informed), respondents with 'do not know' answer received a score of 2 (un-informed) and respondents with a wrong answer received a score of 1 (mis-informed) (p. 399). In this study, for example, for question number 4 in Section B (part B-2)[105], (refer *Appendix 5*), the correct answer was '5' on the Likert scale. If a respondent ticked scale 5, then he would get 5 marks and if he ticked scale 1, he would get 1 mark. (the same procedure applied to scale 4, 3 and respectively). In contrast, if the correct answer was the scale of 1, he would get 5 marks if 1 on the scale was ticked, whereas if he ticked 5 on the scale, he would get 1 mark only[106]. This kind of scoring method enhanced the method used by Eriksen and Fallan (1996) by attempting a greater degree of differentiation of knowledgeable and less knowledgeable taxpayers as Eriksen and Fallan only used three scales (Yes, No and Do not know) in differentiating the level of tax knowledge (p. 400).

5.3.1.3 Section C – Tax compliance direct questions

Section C consisted of 26 direct questions related to tax compliance behaviour. The variables (i.e. predictors being explored) remained the same as in Section A (hypothetical questions). This section was developed to examine the taxpayers' responses via direct questions to complement the hypothetical questions in Section A as well as to enhance validity and reliability of the data obtained from Section A questions. This 'direct

[105] The questions was 'Basic salary must be included in taxable income'. The respondent should have answered either 'Wrong (Likert scale no. 1)' or ' Correct (Likert scale no. 5)'

[106] For example, questions no. 8 in Section B (part B-2). The questions was 'Living accommodation provided by an employer must be excluded in taxable income.' The respondent should have answered either 'Wrong (Likert scale no. 1)' or 'Correct (Likert scale no. 5)'.

questions' approach was based on Troutman (1993) and Chan *et. al*. (2000). Comparisons of results for both Section A and C will be made in the following chapter. This section required the respondents to answer using the Likert scale ranging from 1 ('strongly disagree') to 5 ('strongly agree')[107]. Details of the questions can be referred in *Appendix 5*.

5.3.1.4 Section D – Respondent background

The final section (Section D) consisted of demographic variables including age, gender, income, education background, and some background information on the respondent's tax history. These variables became independent variables in further analysis so that an association between these demographic variables and tax knowledge and tax compliance could be analysed.

5.4 RESEARCH FRAMEWORK, LINKAGE WITH RESEARCH QUESTIONS AND RESEARCH STAGES

To facilitate and structure the data analysis process, this study was divided into five stages: Stage 1 examined the basic sample descriptive statistics in relation to tax knowledge; Stage 2 examined the relationship between tax knowledge and tax

[107] Compliant taxpayers were measured if they answered 'Agree' (5 in Likert scale) or 'Strongly disagree' (1 in Likert scale) depending on the questions.

compliance behaviour; Stage 4 sought to identify the determinants of tax compliance. Various control variables were included in Stages 3 and 5 in order to investigate any effect of those additional variables in the regressions models used in Stages 2 and 4 to expand on the analysis at each of these stages.

5.4.1 Stage 1- The level of tax knowledge – Sample descriptive statistics

This section describes the objective and variable measurement, hypotheses development and data analysis techniques in Stage 1.

5.4.1.1 The objective and variable measurement

This section explain how this research seeks to answer sub-research objective no.1 as stated in Chapter 1 (section 1.4) which is seeking to obtain an overview of the tax knowledge of individual Malaysian taxpayers. Various tests were conducted to examine which variables (from prior literature i.e. gender, race, religion, education level, monthly income, location, attended tax courses and experience being audited by the tax authority) have significant impact on tax knowledge. Tax knowledge was also divided into seven elements of knowledge, namely taxpayers' responsibilities and rights, knowledge about employment income, dividend and interest, personal relief, child relief, rebates and awareness on offences, penalties and fines.

In Loo (2006: 156), the level of tax knowledge was measured by the respondents themselves (self reported). Respondents were required to rate their knowledge either

'extremely good', 'good', 'satisfactory', 'poor', 'extremely poor' and 'no response'. Loo's study found that more than half (51.7%) of the respondents rated themselves as 'satisfactory' while a very small portion of respondents (2.9% and 0.4% respectively) rated either 'extremely good' or 'extremely poor'. Loo's study also did not take into account constructs such as location of taxpayers, attending tax courses and experience of being audited by the tax authority. Table 5.4 describes the variables in Stage 1.

Table 5.4: A description of the variables in Stage 1

Variables	Symbol	Description
Age	*AGE*	Divided into eight groups: 20-25, 26-30,31-35,36-40, 41-45,46-50,51-55 and above 56.
Religion	*RELIG*	Classified into four main religions: Muslim, Christian, Bhuddist and Hindu.
Race/ethnic	*ETH*	Classified into four: Malay, Chinese, Indian and other (other immigrants from other countries).
Education	*EDUC*	Highest education level obtained and divided into six levels (SPM/STPM; Certificate/Diploma; Degree/Professional; Master; PhD. and others).
Income	*INCOME*	Gross monthly income in Ringgit Malaysia (RM).
Attended tax courses	*COURSE*	Attendance at any tax courses organised by approved bodies including subjects in any level of education (i.e Certificate/Diploma; Degree/Professional; Master; PhD.).
Audited by the tax authority	*AUDITED*	Respondents who have been audited by the tax authority in the past five years.
Location	*LOC*	States where respondents reside.
Total tax knowledge	*TOTALTN (B1)*	Total tax knowledge score (B2 – B8): minimum score is 37 (least compliant) and maximum score is 185 (most compliant).
Tax knowledge about responsibilities	*TNRES (B2)*	Respondents need to know their responsibilities as a taxpayer in terms of informing and declaring actual income received from all sources to the IRB,

and rights		keeping records/documents pertaining to income and expenditure for a period of seven years after submission of the tax return and payment of taxes due within 30 days from the date of issue of the Notice of Assessment or within the stipulated period. Measured based on the number of correct answers, minimum mark is 3, maximum mark is 15.
Tax knowledge about employment income	*TNEMPLOY (B3)*	Respondents need to know which income should be included or excluded in determining the taxable income (basic salary, allowances, living accommodation provided by employer). Measured based on the number of correct answers, minimum mark is 7, maximum mark is 35.
Tax knowledge about dividend and interest	*TNDIVINT (B4)*	Respondents need to know which dividend and interest should be included or excluded in determining the taxable income (gross dividend or net? Various sources of interest and dividend). Measured based on the number of correct answers, minimum mark is 6, maximum mark is 30.
Tax knowledge about personal reliefs	*TNPERSREL (B5)*	What reliefs and amounts can be claimed? (i.e. spouse's relief, medical expenses for parents, purchase of books, journals and magazines including newspapers. Measured based on the number of correct answers, minimum mark is 8, maximum mark is 40.
Tax knowledge about child relief	*TNCHILDREL (B6)*	What child relief and amount can be claimed? (i.e. category of child, married, unmarried, study locally or abroad, disabled child). Measured based on the number of correct answers, minimum mark is 6, maximum mark is 30.
Tax knowledge about rebates	*TNREB (B7)*	What rebate amount can be claimed? (i.e rebates for taxable income less than RM35,000, dividend, purchase of computer). Measured based on the number of correct answers, minimum mark is 4, maximum mark is 20.
Tax knowledge about awareness on offences, penalties and fine	*TNAWARE (B8)*	Failure to notify chargeability, late submission of tax return or fail to declare his/her source of income after making a declaration in the tax return, fraud, omissions and understatement. Measured based on the number of correct answers, minimum mark is 3, maximum mark is 15.

5.4.1.2 Data analysis technique

T-tests, one-way analysis of variance (ANOVA) and post hoc tests (Scheffe) were used in this stage. T-tests were used to examine the significant difference between two means while ANOVA was used to examine the significant difference among two or more means. The Scheffe (at 5% level of confidence) test was undertaken to make pairwise comparisons between means when the groups have different sample size (Agresti and Finlay, 2009; Hong, 2005:77-80). Non-parametric tests such as Mann-Whitney U and Wilcoxon W. (for 2 independent samples) as well as Kruskall Wallis (for more than 2 independent samples test) were used to test the difference in medians. The results of Stage 1 analysis are illustrated in details in Chapter 6 (section 6.5).

5.4.2 Stage 2 – Relationship between tax knowledge and tax compliance behaviour

This section describes the objective and variable measurement, hypotheses development and data analysis techniques for Stage 2 of our analysis which sought to explore the relationship between tax knowledge and tax compliance behaviour.

5.4.2.1 The objective and variable measurement

Eriksen and Fallan, (1996) claimed that "no study has been done to investigate which parts of tax knowledge have the greatest effect on attitude toward taxation."(Eriksen and Fallan, 1996:399). Thus, this stage attempts to contribute to the filling of this gap as

suggested by Eriksen and Fallan and to answer the research questions (refer 1.4) - 'Does tax knowledge affect tax compliance? Which tax knowledge variables (elements) significantly correlate with tax compliance behaviour?'

The independent variable, tax knowledge - separated into seven elements of knowledge, (as discussed in 4.2 and 5.3.1.2) namely; taxpayers responsibilities' and rights, knowledge about employment income, dividend and interest, personal reliefs, child reliefs, rebates and awareness of offences, penalties and fines (Table 5.4). Table 5.5 describes variables used in Stage 2 in addition to Table 5.4.

Table 5.5: A description of the variables in Stage 2

Variables	Symbol	Description
Tax compliance Hypothetical questions (Dependent variable)	$TCHYP_{40:60}$	Total score derived through a set of eight hypothetical questions. Minimum total score for each respondent is 8 (1 mark times 8 questions – non-compliant) and maximum total score is 30.4 (3.8 times 8 questions – very compliant). (Further details of these computations can be found in 5.3.1.1)
Tax compliance Direct questions (Dependent variable)	*TCDIR*	Total score derived through a set of 26 direct questions. Minimum total score for each respondent is 26 (1 mark times 26 questions – non-compliant) and maximum total score is 130 (5 times 26 questions – very compliant). (Further details of these computations can be found in 5.3.1.3).

* *Table 5.4, Section 5.3.1.2 and Appendix 6 should be read together with this table.*

5.4.2.2 Hypotheses development for Stage 2

The influence of tax knowledge on compliance behaviour has been described in various research (e.g. Mohamad Ali *et. al.*, 2007). The level of education received by taxpayers is an important factor that contributes to the understanding about taxation especially regarding the laws and regulations of taxation (Eriksen and Fallan, 1996). Previous studies have evidenced that tax knowledge has a very close relationship with taxpayers' ability to understand the laws and regulations of taxation, and their ability to comply (Singh and Bhupalan, 2001). A question that has been raised by previous researchers (for example Singh, 2003; Eriksen and Fallan, 1996; Harris, 1989) is whether enhancement in tax knowledge will increase tax compliance. Eriksen and Fallan (1996) and Lewis (1982) suggested that lack of fiscal knowledge correlates with negative attitudes towards taxation and therefore tax behaviour can be improved by better understanding in tax laws. This result is in line with previous study by Lewis (1982) that low tax knowledge correlates with negatives attitude toward taxation: 'Tax attitudes can be improved through better tax knowledge' (Eriksen and Fallan 1986: 398) and thus this will in turn increase compliance and reduce inclination to evade taxes.

Therefore, following Eriksen and Fallan (1996) and Lewis (1982), the following hypothesis was developed in relation to Stage 2 (the results can be referred in 6.6.1.1, 6.6.1.2 and 6.6.2):

H_{S2} –Tax knowledge is positively associated with attitude towards tax compliance behaviour (Equation 5.1 and 5.2).

5.4.2.3 Data analysis technique

To test hypothesis H_{S2}, the data collected was analysed using multiple regressions (Ordinary Least Squares (OLS)). Stepwise multiple regressions were used in Stage 2. Hair, Black, Babin, Anderson and Tatham (2006: 209) claimed that stepwise multiple regression is the best method used to predict multivariate association as it eliminates automatically any independent variables that are not statistically significant with the dependent variables. The application of this technique at this stage is further appropriate as noted by Hair *et. al.* (2006: 176) because; 1) the data is metric and appropriately transformed, and 2) classification of dependent and independent variables are clearly made prior to testing.

Two measurements of tax compliance behaviour were tested (direct and hypothetical questions). Unlike other studies, for example Loo (2006), Mohamad Ali *et. al.* (2007) and Eriksen and Fallan (1996), this study tested tax compliance behaviour using both approaches in particular making additional use of the hypothetical questions which, as indirect questions, it is argued that can increase reliability of results and minimises respondents' dishonesty when answering the questionnaire (Troutman, 1993, refer 5.3.1.1 for details).

The association between tax knowledge and tax compliance behaviour to hypothetical questions (*TCHYP*) was analysed using one ratio only: 40:60, as other ratios tested (30:70, 50;50 and 60:40) having multicollinearity problems[108].

Equation 5.1 and 5.2 describes the relationship between tax knowledge and tax compliance to direct and hypothetical questions respectively.

$$TCDIR_i = \alpha + \beta_1 TNRES_i + \beta_2 TNEMPLOY_i + \beta_3 TNDIVINT_i + \beta_4 TNPERSREL_i + \beta_5 TNCHILDREL_i + \beta_6 TNREB_i + \beta_7 TNAWARE_i + \beta_8 TNTOTAL_i + \beta_9 GENDER_i + \beta_{10} INCOME_i + \beta_{11} AGE_i + \beta_{12} EDUC_i + \beta_{13} COURSE_i + \beta_{14} AUDITED_i + \varepsilon_i$$

(Equation 5.1)

Where:

TCDIR$_i$ - *Tax compliance score (direct questions)*

TNRES$_i$ - *Tax knowledge about responsibilities and rights*

TNEMPLOY$_i$ - *Tax knowledge about employment income*

TNDIVINT$_i$ - *Tax knowledge about dividend and interest*

TNPERSREL$_i$ - *Tax knowledge about personal relief*

TNCHILDREL$_i$ - *Tax knowledge about child relief*

TNREB$_i$ - *Tax knowledge about rebates*

TNAWARE$_i$ - *Tax knowledge about awareness offences, penalties and fines*

[108] An analysis using other ratios produced a high correlation (.998) among the dependent variables, in this case TCHYP.

$TNTOTAL_i$ - *Total tax knowledge score*

$GENDER_i$ - *Gender*

$INCOME_i$ - *Income level of taxpayer*

AGE_i - *Age*

$EDUC_i$ - *Education level*

$COURSE_i$ - *Experience of attending tax courses*

$AUDITED_i$ - *Experience of being audited by the tax authority*

$$TCHYP_{40:60} = \alpha + \beta_1 TNRES_i + \beta_2 TNEMPLOY_i + \beta_3 TNDIVINT_i + \beta_4 TNPERSREL_i + \beta_5 TNCHILDREL_i + \beta_6 TNREB_i + \beta_7 TNAWARE_i + \beta_8 TNTOTAL_i + \beta_9 GENDER_i + \beta_{10} INCOME_i + \beta_{11} AGE_i + \beta_{12} EDUC_i + \beta_{13} COURSE_i + \beta_{14} AUDITED_i + \varepsilon_i$$

(Equation 5.2)

Where:

$TCHYP_{40:60}$ - *Tax compliance score (hypothetical questions)*

$TCDIR_i$ - *Tax compliance score (direct questions)*

$TNRES_i$ - *Tax knowledge about responsibilities and rights*

$TNEMPLOY_i$ - *Tax knowledge about employment income*

$TNDIVINT_i$ - *Tax knowledge about dividend and interest*

$TNPERSREL_i$ - *Tax knowledge about personal relief*

$TNCHILDREL_i$ - *Tax knowledge about child relief*

$TNREB_i$ - *Tax knowledge about rebates*

$TNAWARE_i$ - *Tax knowledge about awareness offences, penalties and fines*

$TNTOTAL_i$ - *Total tax knowledge score*

$GENDER_i$ - *Gender*

$INCOME_i$ - *Income level of taxpayer*

AGE_i - *Age*

$EDUC_i$ - *Education level*

$COURSE_i$ - *Experience of attending tax courses*

$AUDITED_i$ - *Experience of being audited by the tax authority*

Results of the analysis of these equations are illustrated in Chapter 6 (6.6.1.1 Table 6.14 and 6.6.1.2 Table 6.15)

5.4.3 Stage 3- Relationship between tax knowledge and tax compliance behaviour (with addition of control variables)

This section describes the objective and variable measurement, hypotheses development and data analysis techniques for Stage 3.

5.4.3.1 The objective and variables measurement

Stage 3 is an extension of Stage 2 in which control variables were included in the analysis. Using the same independent and dependent variables from Stage 2, Stage 3 attempts to include control variables namely gender, income level, age, education level,

attended tax courses and experience of being audited by the tax authority. The control variables were included in this stage to examine whether control variables affect (moderate) the tax compliance behaviour.

The control variables were divided into two categories in order to differentiate the impact of each group (i.e tax background) on tax compliance:

1. Demographic control variables (DCV) - gender (D1), income (D2), age (D3), and educational level (D4); and
2. Tax background control variables (TBCV) - attended tax course (E1) and experience of being audited by the tax authority (E2).

Description of the control variables can be referred in Table 5.4 and 5.5.

5.4.3.2 Hypotheses development

The development of hypotheses at Stage 3 was classified into two categories, namely demographic and tax background.

A. Demographics control variables (DCV)

Gender - Some studies found that males are more compliant but other studies revealed contradictory results or no significant difference at all (see Table 4.8). As agreements on the findings are still maintain, the need to explore current results is relevant. Hasseldine and Hite (2003) found that female taxpayers were more compliant than males. However, the study reported that males were more compliant compared to females when a negatively framed message was used, and females were more compliant than males when a positively framed message was used. Mohamad Ali *et. al.* (2007) also reported that females were more compliant in their study. In contrast, Richardson (2006) suggested that gender has no significant impact on compliance across a study of 45 countries (refer 4.3.5.5 for further details).

Income - Jackson and Milliron (1986) found that income level has a mixed and unclear impact on compliance, and some later research agrees with that statement (see Christian and Gupta, 1993: Hite, 1996). Although Jackson and Milliron did not clearly mention the reason, it is presumed that endogenous tax regulations among countries might contribute to inconsistent findings. For example, progressive tax rates might encourage the higher income group to evade rather than the lower income group because their (higher income group) tax rates and taxable income are high, thus, making the tax liabilities much higher than lower income group. In a country where income redistribution is not satisfying[109],

[109] For instance, most of tax revenue would have been expensed unwisely.

the higher income group tends to evade more (Mohani, 2001) because the high income earner might feel betrayed and unfairly treated. Loo (2006) found that high income earners in Malaysia are prone to evading tax while Torgler (2007) reported that lower income earners in Western Germany were less compliant (refer 4.3.5.2 for further details).

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Age - Demographic factors like age have long been researched by many researchers and findings are different along the way. For example Tittle (1980), Warneryd and Walerud (1982) and Wahlund (1992) posits negative association-older people are less compliant. In contrast, Clotfelter (1983), Dubin, Graetz and Wilde (1987), Chung and Trivedi (2003) and Beron, Tuachen and Witte (1992) argued that age was positively related with compliance. However, there have been a significant number of studies which found no relationship between age and compliance (See Spicer and Lundstedt 1976; Spicer and Becker 1980 and Porcano, 1988). Mohani 2001 also found that older people are more compliant (refer 4.3.5.1 for further details).

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Education - Previous literature supports the direct, positive relationship between educational level and taxpayer compliance (Jackson and Miliron 1986; Roth, *et. al.* 1989). Chan *et. al.* (2000) also postulate that education level is directly linked to a likelihood of compliance. Educated taxpayers may be aware of non compliance opportunities, but their potentially better understanding of the tax system and higher level of moral development promote a more favorable taxpayer attitude and greater compliance (refer 4.3.5.4 for further details).

B. Tax background control variables (TBCV)

Attended tax course **–** Taxpayers who have attended a tax course would be expected to have better tax knowledge in comparison with taxpayers who have never attended a tax course. However, in a new SAS in which tax laws and regulations keep on changing, a course attended in the previous one or two years might not be as useful anymore as new regulations are brought into place i.e. tax course knowledge is likely to be rendered of only limited use within fairly short periods. This may however not be true for all types of tax course e.g those courses aimed at general tax system knowledge.. Mohamad Ali *et. al.* (2007) has proven that attending tax courses significantly increases tax knowledge but central to this study is the need to determine if this association increases tax compliance behaviour.

Audited by the tax authority - Some studies have claimed that being audited has a positive impact on tax compliance (taxpayers who have ever been audited by a tax authority will be more compliant (e.g. see Jackson and Jaouen, 1989; Shanmugam, 2003; Dubin, 2004). These findings evidenced that in self assessment system, tax audits play an important role and to increase voluntary compliance. Audits rates[110] and the thoroughness of audits could encourage taxpayers to be more prudent in completing their tax returns. Similarly, taxpayers will also report all income and claim the actual deductions to ascertain their tax liability. In contrast, taxpayers who have never been audited might attempt to leave unreported their actual income and make false deductions.

[110] Audit rates are calculated based of number of tax returns audited divided by number of tax returns accepted by tax authority.

Butler (1993) found that tax audits can change compliance behaviour from negative to positive. This finding complements the Witte and Woodbury (1985) and the Beron *et.al.* (1988) studies. Witte and Woodbury reported that tax audits have a significant role in tax compliance but this is limited to small proprietors. They did not empirically test individual taxpayers, thus left the need for further research this area. While Butler (1993) and Witte and Woodbury (1985) found significant results, Beron *et. al.* (1988) revealed a contradictory result. They reported that audits did not significantly correlate with evasion for all groups. Audits were more effective in inducing taxpayers to overclaim deductions rather than encouraging them to correctly report actual income.

Therefore, based on previous literature, assuming that the tax knowledge is constant, the following hypotheses were developed in relation with Stage 3:

H_{3A} – *Female taxpayers are significantly more compliant.*

H_{3B} – *Higher income earners are significantly more compliant.*

H_{3C} – *Older people are significantly more compliant.*

H_{3D} – *Taxpayers with high level of education are significantly more compliant.*

H_{3E} – *Taxpayers who have attended tax courses are significantly more compliant.*

H_{3F} – *Taxpayers who have experienced being audited are significantly more compliant.*

Results of the testing of these hypotheses are presented in section 6.7

5.4.3.3 Data analysis techniques

In Stage 3, Ordinary Least Squares (OLS) regressions were used to test the Equation 5.1 and 5.2 as presented in Table 6.17 and Table 6.18. Results of this regression (in Panel A) become the base regression in the model before the supplementary regression model (Panel B) was employed by including the control variables as discussed in 5.4.3.2. Results in Panel A and B were compared in order to determine whether the inclusion of each control variable affects (improves) the base regression model in Panel A.

5.4.4 Stage 4 – Exploring the determinants of tax compliance

This section describes the objective and variable measurement, hypotheses development and data analysis techniques of Stage 4 of this analysis.

5.4.4.1 The objective and variable measurement

Stage 4 investigated factors that affect tax compliance behaviour. Based on previous literature (refer section 4.3), a total of nine predictors (independent variables) were examined namely probability of being audited (E1), perception of government spending (E2), perception of equity and fairness (E3), penalty (E4), financial constraint (E5), changes to current government policies (E6), referral group (E7), the role of the tax authority (E8) and tax knowledge (E9).

Table 5.6: A description of the variables in Stage 4

Variables	Symbol	Description
Tax compliance Hypothetical questions (Dependent variable)	$TCHYP_{40:60}$	Total score derived through a set of eight hypothetical questions. Minimum total score for each respondent is 8 (1 mark times 8 questions – non-compliant) and maximum total score is 30.4 (3.8 times 8 questions – very compliant). (The details are in 5.3.1.1)
Tax compliance Direct questions (Dependent variable)	*TCDIR*	Total score was derived through a set of 26 direct questions. Minimum total score for each respondent is 26 (1 mark times 26 questions – non-compliant) and maximum total score is 130 (5 times 26 questions – very compliant). (The details are in 5.3.1.3).
Probability of being audited (E1)	*PROBAUDIT*	Probability of a taxpayer being audited or investigated by the tax authority. Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
Perception of government spending (E2)	*GOVSPEND*	Taxpayers' perception of how the government spends taxpayers' money or redistributes the tax collection. Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
Perception on equity and fairness (E3)	*EQUITY*	Taxpayers' perception on the equity and fairness of the tax system. Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
Penalty (E4)	*PENALTY*	Penalty rates and the enforcement undertaken by the tax authority. Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
Financial constraint (E5)	*FINCONS*	Personal financial constraint including inadequacy of taxpayers' income to pay their tax and personal expenditures. Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
Changes on current government policies (E6)	*CHANGES*	Changes on any government policies for example increase of tax rates, increase of fuel prices etc. Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
Referral group (E7)	*GROUP*	The role of referral group, for example, family members and closed friends in determining

		taxpayers' decision either to comply or not to comply. Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
The role of Inland Revenue Board (E8)	*ROLE*	The role of the tax authority in administering the tax system (efficiency, refunds, response with complaints, customer services etc). Minimum score is 1 (non-complaint), and maximum is 15 (very complaint).
Tax knowledge (E9)	*TNTOTAL*	Total tax knowledge score. minimum score is 37 (non-compliant) and maximum score is 185 (ver compliant).

* *Section 5.3.1.1, 5.3.1.3 and Appendix 6 should be read together with this table.*

5.4.4.2 Hypotheses development

As discussed in section 4.2 and 4.3, compliance with respect to probability of being audited has received attention from many researchers. Allingham and Sandmo (1972) claimed that taxpayers will always declare their income correctly if probability of detection is high. Probability of detection plays a significant role in reporting behaviour as taxpayers will declare everything if they perceive that they will be one of the auditees in that particular year (Riahi-Belkaoui,2004; Richardson, 2006). Slemrod, Blumenthal and Christian (2001) investigated the relationship between the probability of being audited and taxpayers' response. The experiment[111] indicated that taxpayers' behaviour varied in terms of level of income and the probability of being audited which played a significant role in determining taxpayers' evasion behaviour. However, the direction of the relationship (positive or negative) was not clearly stated by Slemrod *et. al.* (1998).

[111] Using taxpayers' tax returns for two years to compare the differences in reported income, deductions and tax liabilities. Random sampling was used.

This result was also supported by Andreoni, Erard and Feinstein (1998) who also found that prior audit experience influenced and increased compliance among taxpayers. Conversely, Young (1994) and Slemrod, Blumenthal and Christian (2001) found that probability of being audited negatively correlated with compliance behaviour. Therefore, following the above discussions, it is hypothesised that:

H_{4A}– Probability of being audited is positively correlated with tax compliance.

Studies on the relation between government spending and tax compliance, particularly on tax evasion are very limited. Taxpayers, especially those who pay high amounts of tax, could be expected to be sensitive to how the government spends their money. Although there is limited empirical evidence on this topic, it is suspected that taxpayers will tend to evade tax if they perceive that the government spends tax money unwisely. Lewis (1982) claimed that misperception probably plays a major role shaping fairness evaluations. Meanwhile, Roberts, Hite and Bradley (1994) also suggest that attitude to one's own tax evasion (tax ethics), and attitude to other people's tax evasion are considered important. If the government is spending the national revenue wisely, such as for basic facilities like education, health and safety and public transportation, it is assumed that voluntary compliance will increase. In contrast, if taxpayers perceive that the government is spending too much on unnecessary things, taxpayers might feel betrayed and attempt to evade. Therefore, following the above discussions, it is hypothesised that:

H_{4B}– Positive perception of government spending is positively correlated with tax compliance.

Jackson and Milliron (1986) claimed that it is generally accepted that perceptions of equity and fairness and tax compliance are related. Spicer (1976) and Song and Yarbrough (1978) found a significant negative association between fairness and tax evasion. Spicer and Becker (1980) also suggested that tax evasion increases (decreases) when taxpayers perceive fiscal inequity (equity) because they feel victimized by imbalanced income redistributions. However, the beneficiaries of income equity and what forms of inequity are likely to affect evasion behaviour were still unclear and debatable. Perceived fairness of tax system also has an influence on the inclination towards tax evasion (Jackson and Milliron, 1986; Richardson, 2006). Moreover, Hite and Roberts (1992) also suggested that perception of equity and fairness occurred in an improved and efficient tax system. Therefore, following the above discussions, it is hypothesized that:

H_{4C} – Positive perception of equity and in the tax system is positively correlated with tax compliance.

A theoretical economic model introduced by Allingham and Sandmo (1972) has clearly indicated that penalties have an impact on tax compliance- higher penalties discourage tax evasion. However, more complex models like principal agent theory and game theory suggest that penalties and audit probability are difficult to portray in compliance models as results are determined endogenously with tax cheating (Andreoni *et. al.* 1998). Beck, Davis and Jung (1991) and Becker, Buchner and Sleeking (1987) found that penalty rates

affect tax compliance. However, an experimental approach does limit the environment into a narrow perspective compared to the real world or a national survey. Marrelli (1984), Wang & Conant (1988), Gordon (1990), Marrelli and Martina (1988) found that penalty rates have a negative association with evasion. In contrast, Virmani (1989) indicated that penalty rates have a positive association with evasion, meaning that higher rates will encourage people to cheat. Since previous studies have indicated that penalty rates affect tax compliance behaviour, awareness of offences and penalties are presumed to have a significant influence as well. If the taxpayers are aware of the offence and the consequences of being non compliant taxpayers, they might not cheat. On the other hand, if they are unaware of the implication of being dishonest, they might cheat because they presume that they will not be detected and could save money. Therefore, following the above discussions, it is hypothesised that:

H_{4D}–Penalty rate is positively correlated with tax compliance.

Personal financial constraints are believed to have an impact on tax evasion as financial distress faced by an individual will encourage him to prioritise which bill or liability has to be paid first, rather, perhaps than tax liabilities. People who face personal financial problems are more prone to evade tax when compared with someone with less financial distress (Mohani, 2001). Conversely, Vogel (1974) and Warneryd and Walerud (1982) found that people with no financial distress also exercise tax evasion and, surprisingly, the level of evasion is more serious than that of people with financial distress. Vogel presumed that this situation is related to economic status rather than personal condition.

Besley, Preston and Ridge (1997) report that an economic downturn may have been a factor in poll tax non-compliance in England. Therefore, following the above discussions, it is hypothesised that:

> H_{4E} – *Personal financial constraint is negatively correlated with tax compliance.*

Political stability and the ruling government party in a country might play a significant role in determining tax evasion behaviour. For instance, if an individual favours the current ruling government party, he might choose to be compliant because he believes that the government is trusted, efficient and equitable. Conversely, taxpayers from the opposition parties might be noncompliant because they perceive that the government is not on their side. In addition to the political affiliation, changes to current government policies might also affect tax compliance behaviour. For example, unlike in the UK, in Malaysia, petrol prices and some basic needs like sugar, wheat flour, rice and cooking oils are control by the government and the prices are regularly increased depending on current global economic and government financial situation. Thus, increasing the price of these resources has a negative impact on taxpayers' purchasing power and ultimately will encourage taxpayers to evade tax.

Kim (2008) in his study on tax evasion in 50 countries over a three-year period between 1995 - 2000 concluded that tax evasion is influenced by price control (positive direction), public service (positive), collected corporate tax (positive), GDP per capita (positive), tax

system (positive) and the composition of government spending (positive). Hasseldine and Hite (2003) also concluded that policy changes (the 2001 tax rebate) in the US tended to be viewed positively by taxpayers (increasing taxpayers trust and voluntary compliance), and those who perceived it positively also tended to perceive the current system as more fair. Therefore, following the above discussions, it is hypothesised that:

H_{4F}– Changes to current government policies are negatively correlated with tax compliance.

Research to ascertain the importance of referent group i.e family members and friends in tax compliance is limited, although Ajzen (1988) and Ajzen and Fishbein (1980) (in their Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)) theorised that referent groups play a significant role in determining people's intentions and behaviour. Decisions either to evade or not to evade are sometimes influenced by members of family or friends (Allingham and Sandmo 1972) although the extent of influence was not clearly determined. Spicer and Lundstedt (1976) perceived the importance of a referent group in a wider continuum in which they used heads of families in Central Ohio as the respondents. Spicer and Lundstedt believed that heads of households "…would most likely manage tax matters or play a major role in managing them." (p. 299). Judging from this statement however, heads of households would have power to influence other members of family in tax matters.

In agreement with Spicer and Lundstedt (1976) and Allingham and Sandmo (1972), Clotfelter (1983) also claimed that referent group plays a significant role in evasion although it was not clearly mentioned which had stronger influence (family members or friends). Hasseldine, Kaplan and Fuller (1994) reported that the number of evaders known to respondents made the largest contribution to the model of under reporting income which means that the more respondents know the evaders, the more under reporting of income may happen, therefore it is hypothesised that:

H_{4G} – The influence of referent group is positively correlated with tax compliance.

No conclusive evidence exists for how tax authorities can influence taxpayers' compliance behaviour, as researchers from different countries were unable to reach an agreement on this issue, as each country has their own approach in ascertaining taxpayers' compliance behaviour. In the US for example, the IRS view tax noncompliance as a big challenge and has had to deal with this carefully as the tax gap has increased tremendously in the last decade. The role of tax authority in minimising the tax gap and increasing voluntary compliance is very important as Hasseldine and Li (1999) placed the government and tax authority as the main party that needed to be continuously efficient in administering the tax system in order to minimise tax evasion. The government plays the central role in designing the tax systems, enforcement and collection (Hasseldine and Li, 1999: 93).

Furthermore, Roth *et. al.* (1989) suggested that in order to increase compliance, maximise tax revenue and be respected by taxpayers, a government must first have an economical tax system which is practicable[112]; they must discourage tax evasion and induce honesty, avoiding the tendency to dry up the source of the tax; in addition, they must not provoke conflict and raise political difficulties and should have a good relationship with international tax regime. A recent study conducted by Richardson (2006) also suggested that the role of a government has a significant impact on determining attitudes towards tax. A simpler tax system introduced by a government can reduce tax evasion. Therefore, following the above discussions, it is hypothesised that:

H_{4H}– The role (efficiency) of the tax authority is positively correlated with tax compliance.

A question that has been raised by previous researchers (Singh, 2003; Eriksen and Fallan, 1996; Harris, 1989) is whether enhancement in knowledge will increase tax compliance. Eriksen and Fallan (1996: 387) claimed that 'knowledge about tax law is assumed to be important for preferences and attitudes towards taxation. There is little research that explicitly considers how attitude towards taxation is influenced by specific knowledge of tax regulations'. They suggested that lack of fiscal knowledge correlates with negative attitudes towards taxation and tax behaviour can be improved by better understanding in tax laws[113]. This result is in line with previous study by Lewis (1982) that low tax knowledge correlates with negatives attitudes towards taxation. 'Tax attitudes can be

[112] The government have suitable powers (assessment and collection) to administer the tax system .
[113] This finding is in line with Lewis (1982)

improved through better tax knowledge' (Eriksen and Fallan 1986: 398) and thus this will in turn increase compliance and reduce inclination to evade taxes. Therefore, following the above discussions, it is hypothesised that:

H_{4J}– Tax knowledge is positively correlated with tax compliance.

5.4.4.3 Data analysis technique

To test the hypotheses, the data was analysed using multiple regressions (Ordinary Least Squares (OLS)). Two measurements of tax compliance behaviour were tested (direct and hypothetical questions). Equation 5.3 and 5.4 were used as the base regression models to test the hypotheses and establish the tax compliance determinants.

$$TCDIR_i = \alpha + \beta_1 PROBAUDIT_i + \beta_2 GOVSPEND_i + \beta_3 EQUITY_i + \beta_4 PENALTY_i + \beta_5 FINCONS_i + \beta_6 CHANGES_i + \beta_7 GROUP_i + \beta_8 ROLE_i + \beta_9 TNTOTAL_i + \beta_{10} GENDER_i + \beta_{11} INCOME_i + \beta_{12} AGE_i + \beta_{13} EDUC_i + \beta_{14} COURSE_i + \beta_{15} AUDITED_i + \varepsilon_i$$

(Equation 5.3)

Where:

$TCDIR_i$ - *Tax compliance score (direct questions)*

$PROBAUDIT_i$ - *Probability of being audited*

$GOVSPEND_i$ -*Perception on government spending*

$EQUITY_i$ - *Perception on equity and fairness*

$PENALTY_i$ - *Penalty rates and enforcement*

$FINCONS_i$ - *Personal financial constraint*

$CHANGES_i$ - *Changes on current government policy*

$GROUP_i$ - *Referent group*

$ROLE_i$ - *The role of the tax authority*

$TNTOTAL_i$ - *Total tax knowledge score*

$GENDER_i$ - *Gender*

$INCOME_i$ - *Income level of taxpayer*

AGE_i - *Age*

$EDUC_i$ - *Education level*

$COURSE_i$ - *Experience of attending tax courses*

$AUDITED_i$ - *Experience of being audited by the tax authority*

$$TCHYP_{40:60\ i} = \alpha + \beta_1 PROBAUDIT_i + \beta_2 GOVSPEND_i + \beta_3 EQUITY_i + \beta_4 PENALTY_i + \beta_5 FINCONS_i + \beta_6 CHANGES_i + \beta_7 GROUP_i + \beta_8 ROLE_i + \beta_9 TNTOTAL_i + \beta_{10} GENDER_i + \beta_{11} INCOME_i + \beta_{12} AGE_i + \beta_{13} EDUC_i + \beta_{14} COURSE_i + \beta_{15} AUDITED_i \varepsilon_i$$

(Equation 5.4)

Where:

$TCHYP_i$ - *Tax compliance score (hypothetical questions)*

$PROBAUDIT_i$ - *Probability of being audited*

$GOVSPEND_i$ -*Perception on government spending*

$EQUITY_i$	*- Perception on equity and fairness*
$PENALTY_i$	*- Penalty rates and enforcement*
$FINCONS_i$	*- Personal financial constraint*
$CHANGES_i$	*- Changes on current government policy*
$GROUP_i$	*- Referent group*
$ROLE_i$	*- The role of the tax authority*
$TNTOTAL_i$	*- Total tax knowledge score*
$GENDER_i$	*- Gender*
$INCOME_i$	*- Income level of taxpayer*
AGE_i	*- Age*
$EDUC_i$	*- Education level*
$COURSE_i$	*- Experience of attending tax courses*
$AUDITED_i$	*- Experience of being audited by the tax authority*

Results for these equations are illustrated in Chapter 6 (6.8.2 and 6.8.3).

5.4.5 Stage 5 – Exploring tax compliance determinants with control variables

This section describes the objective and variable measurement, hypotheses development and data analysis techniques in Stage 5.

5.4.5.1 The objective and variable measurement

Stage 5 is an extension of Stage 4 in which control variables were included in the analysis. Using the same independent and dependent variables from Stage 4, Stage 5 attempts to include control variables, namely gender, income level, age, education level, attended tax courses and experience of being audited by the tax authority. Control variables in Stage 5 were included to examine whether control variables affects (moderates) tax compliance behaviour. The control variables used in this stage were the same as Stage 3; details of each control variable can be referred to in 5.4.3.1, 5.4.3.2 and Table 5.4.

5.4.5.2 Hypotheses development

Following the control variables used in Stage 3 and based on the discussions on 5.4.3.1 and 5.4.3.2, the objective of including control variables in the base regression model was to examine whether each control variable significantly affects the regressions model. Unlike the hypotheses at Stage 4 which specifically tested the direction of association (positive or negative), the development of hypotheses for Stage 5 is to examine whether demographic and tax background variables would increase tax compliance behaviour. Therefore, the following hypotheses were developed in relation to Stage 5:

H_{5A} – With regard to other tax compliance determinants, female taxpayers are significantly more compliant.

H_{5B} – With regard to other tax compliance determinants, higher income earners are significantly more compliant.

H_{5C} – With regard to other tax compliance determinants, older taxpayers are significantly more compliant.

H_{5D} – With regard to other tax compliance determinants, taxpayers with higher levels of education are significantly more compliant.

H_{5E} – With regard to other tax compliance determinants, taxpayers who have attended tax courses are significantly more compliant.

H_{5F} – With regard to other tax compliance determinants, taxpayers who have been audited are significantly more compliant.

5.4.5.3 Data analysis techniques

In line with Stage 3, the Ordinary Least Squares (OLS) regressions were also used to test the base regression model as illustrated in the Equation 5.3 and 5.4, (results are illustrated in Table 6.26 and Table 6.28). Results of these regressions (Panel A) become the base regression in the model before supplementary regression models (Panel B) were employed to include the control variables discussed in 5.4.3.2. Results in Panel A and B

were compared in order to determine whether the inclusion of each control variable affects (improves) the base regression model in Panel A.

5.5 Methodology limitations

The approach applied in this study has a number of limitations. Firstly, the use of landline telephone directories might cause some groups of taxpayers to be eliminated from the sample frame, thus creating a potential threat to external validity and increasing sampling error. However, this issue has been balanced by a high number of usable responses (1,073) which is relatively high compared to other similar tax studies (refer Table 5.3).

Secondly, the use of a mail survey may create some problems such as non response bias, misunderstanding of questions and variables measured by self reporting. Any survey has to be concerned with "non-response bias". This refers to a situation in which people who do not return a questionnaire have opinions that are systematically different from the opinions of those who do return their surveys. The standard way to overcome this problem is to compare the responses of those who return the first mailing of the questionnaires with those who return the second mailing (Donzé, 2002; Sydow, 2006). Details of analysis undertaken to test for this potential problem in this study are explained in Chapter 6.

Thirdly, tax knowledge was only measured based on a limited coverage of the Income Tax Act 1967. The results might be different if a wider scope of tax knowledge were

used. A wider coverage of tax knowledge would not be able to be conducted in this study as doing so would make the questionnaire lengthy and cumbersome and it thus might be potentially disregarded by the respondents and therefore the response rate might decrease.

Fourthly, the compliance measure is a judgment based measure using hypothetical situations. As tax evasion is a sensitive issue, respondents may not feel comfortable answering the questions without any control or direct contact. Actual behaviour of the subjects may vary from the responses given. Acknowledging this constraint, however, it is believed that this is the most suitable way to predict taxpayers' compliance behaviour, as direct questions might lead respondents to answer the questions dishonestly and could be potentially embarrassing for respondents.

Fifthly, since this study used a printed message and communicated on one occasion, it is possible that different results might be obtained if a different medium of communication was used, such as interviews. However, as the objective of this study is to obtain a national response, therefore, this kind of communication (a printed message) is believed to be the most viable method (in terms of time and money) in order to reach wider coverage compared with interviews and experiments.

Finally, results of this study might be different if other data analysis techniques like structured equation modeling (SEM) were used rather than multiple regressions. This study was unable to be tested using SEM because the questionnaire is designed to test

only one way interaction between independent and dependent variables. Therefore, multiple regressions were considered sufficient to answer the research objectives.

5.6 Conclusions

This chapter describes the research design and methodology of this study, including the data collection process, sampling frame and sampling procedures as well as the development of the questionnaires. Five stages of data analysis were employed in order to answer the research objectives outlined in section 1.4. In each stage, an explanation regarding variables of definitions and measurement, hypotheses development and data analysis techniques were discussed in detail. Despite the advantages of using OLS as a data analysis method, some limitations in the methodology were also highlighted as limitations of this study. In the next chapter, the results of this study are discussed.

CHAPTER 6

ANALYSIS AND RESULTS

6.1 INTRODUCTION

This chapter describes the results of the study starting with summary of the survey, response rates and respondents' background. The remainder of this chapter will then be divided into the following sections: 1) Stage 1 – to examine the level of taxpayers' knowledge and the profile of respondents; 2) Stage 2 – to examine the association between tax knowledge in various aspects (independent variables) and tax compliance based on hypothetical and direct questions; 3) Stage 3 – to examine the association between tax knowledge and tax compliance with control variables; 4) Stage 4 – to identify factors impacting tax compliance behaviour by using both hypothetical and direct questions; and 5) Stage 5 – to identify determinants of tax compliance with control variables.

6.2 SURVEY DISTRIBUTION AND RESPONSE RATES

The following table summarises the survey and response rates. According to Table 6.1, the initial surveys were distributed evenly among the locations and the response rates of

each location were considered balanced in the range of 94 to 120 usable questionnaires. Out of 5,500 surveys distributed, 71 were returned due to incomplete addresses, respondents having moved or deceased. Sabah/Labuan and Sarawak were the leading states with 15 and 12 returned mails respectively while Melaka/Negeri Sembilan had the least number of returned questionnaires. Out of 1,106 surveys returned, 1,073 representing 19.51% of the total sample were usable and could be further analysed. Section 6.4 describes the validity of these sample groups.

Table 6.1: Summary of survey distribution and response rates

Cluster	States	Survey distributed	Survey returned due to incomplete address, moving and died	Survey returned but incomplete (not used)	Total usable response	Total usable response %
1	Selangor/ Kuala Lumpur	550	8	3	120	21.82
2	Perlis/Kedah	550	5	5	101	18.36
3	Pulau Pinang/ Perak	550	6	-	115	20.91
4	Melaka/Negeri Sembilan	550	2	4	104	18.91
5	Johor	550	3	5	107	19.45
6	Kelantan	550	9	6	112	20.36
7	Terengganu	550	5	4	104	18.91
8	Pahang	550	6	3	119	21.64
9	Sabah/ Labuan	550	15	-	97	17.64
10	Sarawak	550	12	3	94	17.09
Total		5,500	71	33	1,073	19.51

Malaysia consists of fourteen states. However, telephone directories in Malaysia were classified based on region, for example Perlis and Kedah telephone directories were classified in ‘northern region’ directories. This is the reason why clusters were used in this study. In terms of the number of surveys distributed, 5,500 were far away from the

total population of Malaysia, particularly individuals taxpayers of 2,198,914[114] in year 2006 (IRB Annual Report, 2006). However, a past study (Loo, 2006) has shown that using such a number of questionnaires in distribution is large enough to represent individual taxpayers in Malaysia. In addition, Sekaran (2000:295) suggests that the optimum sample size for a total population of one million is 384 or 0.0384% (p.295).

Knofczynski and Mundfrom (2008) provide some guidelines as to the minimum sample size needed for accurate predictions in multiple regressions. They suggested that in order to obtain a valid and good prediction in multiple regressions, the number of the sample is determined by the number of predictors in the multiple regressions. As this study attempt to analysis nine predictors, Knofczynski and Mundfrom (2008) suggested that the number of the sample should be 900 (see Knofczynski and Mundfrom (2008), Table 1, p. 438).

As determining the sample size is controversial, Hinkle and Oliver (1983), Cochran (1953) and Krejcie and Morgan (1970) suggested a commonly used approach to determine the number of sample by a formula provided that the population error variance (σ^2) and the degree of accuracy (effect size) are exist.. Since both variables were not available for this study and the total individual taxpayers (population) were 2,198,914, therefore based on Sekaran (2000:295-296) and Knofczynski and Mundfrom (2008), the sample size should be at least 845 or 900. Thus, the response of 1,073 was considered representative enough to obtain reliable and valid results.

[114] This figure is based on total number of tax returns distributed to registered individual taxpayers.

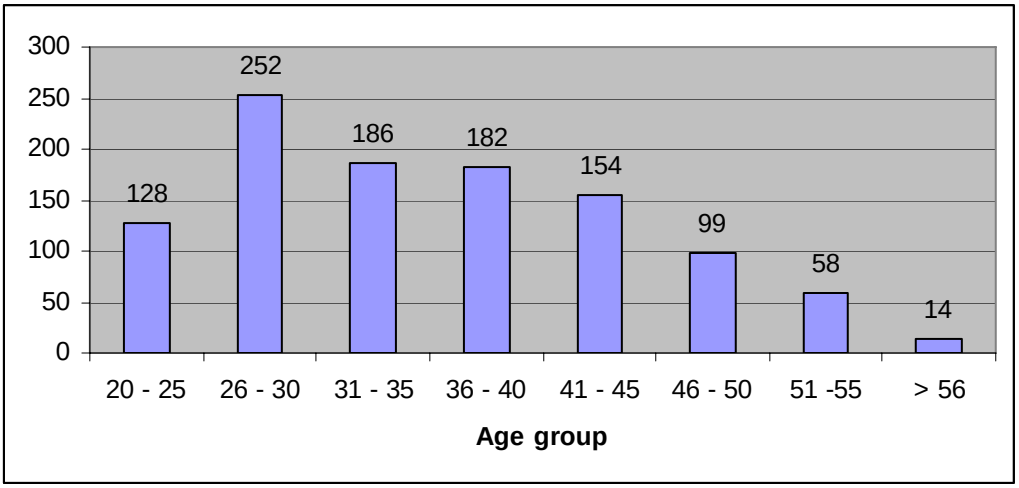
6.3 BACKGROUNDS OF RESPONDENTS

This section describes respondents' demographic and tax background including age, gender, educational levels, income levels, attendance at tax courses and experience of being audited by the tax authority. Some descriptive statistics are also illustrated in this section.

The respondents comprised of 588(55%) females, 483 (45%) males while 2 respondents did not mention their gender. The majority of the respondents were Malays with 910 (85%), followed by Chinese, Indian and other ethnicity with 84(8%), 44(4%) and 32 (3%) respectively.

Figure 6.1 represents the age statistics. Since this study emphasised individual taxpayers, a minimum age of 20 years old was considered reasonable. There were eight age groups involved in this study with a 5-year range in each group except for 'above 56 years old' category. The largest group of the respondents, (252 or 24%) were aged between 26 and 30 years old and respondents in the group of above 56 years old was the lowest number with 14 responses (1%). Cumulatively, respondents aged between 20 and 40 years old made up the largest portion with 749 responses (70%). A total of 768 (72%) respondents were married, 280 (26%) were single and 20 (2%) were widows/widowers.

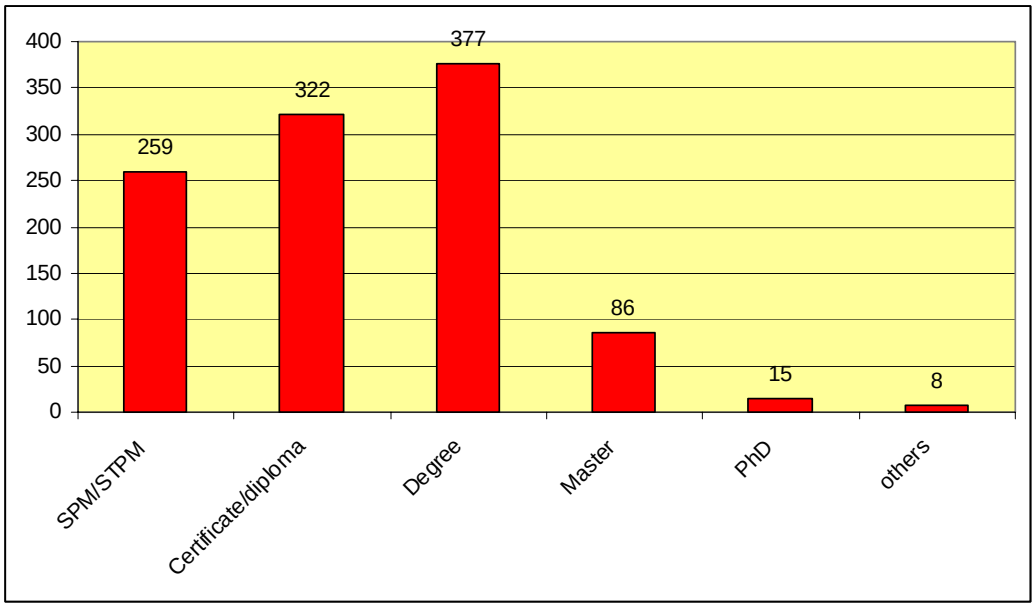
Figure 6.1: Age group



As presented in Figure 6.2, most of the respondents had good academic qualifications: a total of 377 respondents or 35% had a degree while 101 (9%) respondents had higher than degree level qualifications. Only 259 respondents had a lower level of education including secondary level, SPM/STPM[115].

[115] *Sijil Pelajaran Malaysia* (SPM) is the equivalent of GCSE-Level while *Sijil Tinggi Pelajaran Malaysia* (STM) is the equivalent of A-level in the UK education system.

Figure 6.2: Level of Education



As shown in Figure 6.3, the majority (944, 88%) of the respondents earned less than RM6,000 while 64 (6%) respondents had a monthly income of more than RM6,000. Only 19 (2%) earned more than RM10,000 per month[116].

[116] The average income for all regions is approximately between RM2,001 – RM4,000.

Figure 6.3: Monthly Income

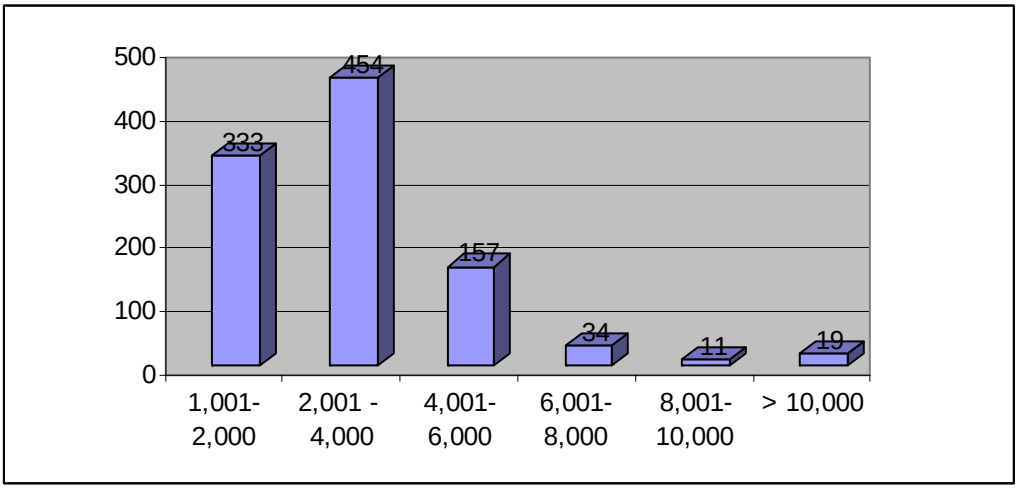


Figure 6.4 illustrates the fraction of respondents who had attended any informal or formal tax courses organised by authorised bodies. A total of 192 (18%) of the respondents had attended taxation courses while a large number of them, 876 (82%) not attended any tax courses before. A total of only 36 (3%) of the respondents had been audited while a large number of them, 1,028 (97%) had never been audited. Figure 6.5 represents the respondents who had experienced being audited by the IRB.

Figure 6.4 Attended tax courses

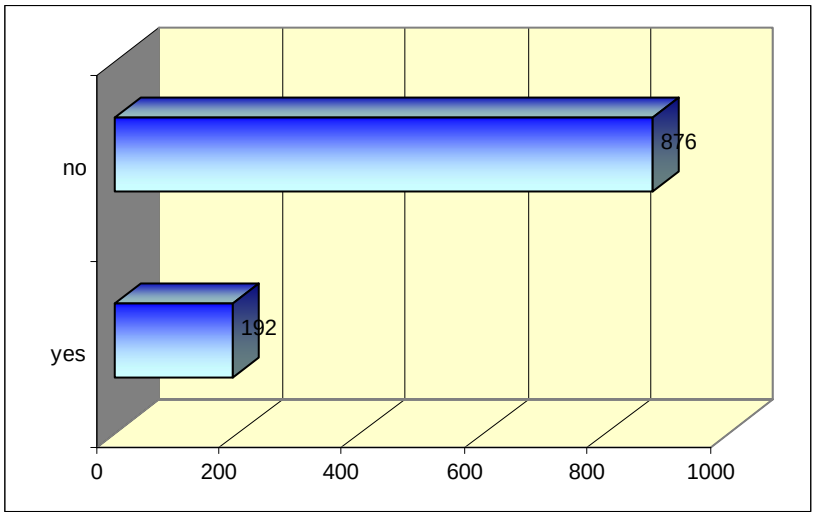
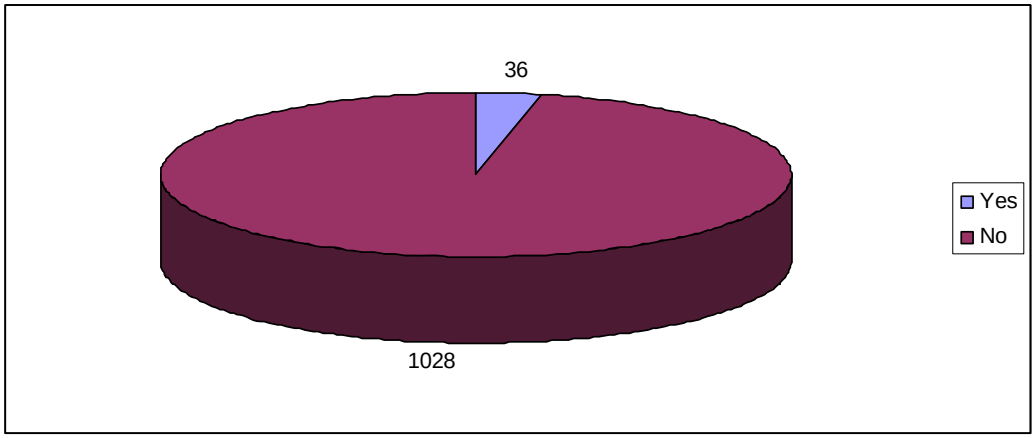


Figure 6.5 Audited by IRB



6.4 INTERNAL VALIDITY (RELIABILITY TEST)

Internal validity refers to cause-effect relationship among independent and dependent variables. It attempts to answer "to what extent does the research design permit the researcher to conclude that the independent variable A causes a change in the dependent variable B" (Sekaran 2000:151). Research with high internal validity enables a researcher

to better argue that a relationship is causal whereas low internal validity produces less valid results. (Sekaran 2000:151). Reliability tests measure the internal consistency and stability of the multi-item scales and the extent to which the measurement across the items in the questionnaires are biased (Hong, 2005).

Hair *et. al.* (2006:102,137) benchmarked data, stating that alphas of more than .70 are good enough to be analysed in order to produce reliable and valid data, although this may decrease to .60 in exploratory research. Results (see Table 6.2) indicate that the value of Cronbach's alpha[117] for 8 out of 16 constructs were more than 0.700, 4 constructs were more than 0.600, while the others were less than 0.600 but more than 0.5000 which suggests that the instruments used were valid and of a high degree of reliability. In Eriksen and Fallan (1996: 392), their Cronbach alpha were 0.52 (pre test) and 0.60 (post test). Although some of the variables had slightly low Cronbach's Alpha, based on Eriksen and Fallan (1996) the coefficients were acceptable for further analysis and the ability to produce valid, reliable and verifiable results was convincing (Hair *et. al.* 2006: 137; Sekaran, 2000: 310-313). The following table summarises the results of reliability tests (Cronbach's Alpha) for factors involved.

[117] Since each factor is measured by three questions in the survey, this reliability test measures consistency responses in relation with the factor.

Table 6.2: Reliability test - Cronbach's Alpha for variables

Main variables	Sub variables	Cronbach Alpha
Tax knowledge	General responsibilities and rights	.693
	Employment income	.521
	Dividend and interest income	.676
	Personal relief	.731
	Child relief	.665
	Rebates	.567
	Awareness of offences penalties and fines	.816
Tax compliance (Direct)	Probability of being audited	.707
	Perception of government spending	.793
	Perception of equity and fairness	.512
	Penalties	.752
	Financial constraint	.665
	Changes on current government policy	.890
	Referral group	.869
	Role of IRB	.562
	Ethics	.830

6.5 STAGE 1 – LEVEL OF TAXPAYERS' KNOWLEDGE – SAMPLE DESCRIPTIVE STATISTICS

This section explains the characteristics of taxpayers' knowledge. Some demographic variables including gender, age, income level and education level, religion, race/ethnicity and attended tax courses were tested using T-tests, ANOVA, Mann-Whitney U., Wilcoxon W. and Kruskall-Wallis.

6.5.1 T-tests, Mann-Whitney U. and Wilcoxon W.

This section presents results of the tested variables including gender, attended tax courses and experience being audited by the IRB.

6.5.1.1 A1 - Gender

A t-test is used to assess whether the means of two groups (i.e male and female) are statistically different from each other (Bryman and Bell 2003:352; Sekaran 2000: 317; Hair *et. al.*2006: 388-390; Hong 2005: 45). Table 6.3 illustrates the results of t-test between males and females.

Table 6.3: Mean different between variables (t-test)

IV:DV#	Mean	SD	t
A1:B1			
Male	132.13	17.92	1.799***
Female	130.25	16.15	
A1:B2			
Male	6.77	2.83	3.506*
Female	6.19	2.57	
A1:B3			
Male	26.48	5.27	-.187
Female	26.54	5.06	
A1:B4			
Male	17.74	5.92	-.436
Female	17.86	5.27	
A1:B5			
Male	32.29	6.28	.930
Female	31.92	6.22	
A1:B6			
Male	18.58	5.64	.597
Female	18.38	5.19	
A1:B7			
Male	14.34	3.77	2.044**
Female	13.89	3.56	
A1:B8			
Male	9.78	3.38	.546
Female	9.67	3.05	

** significant at p < 0.01*
*** significant at p < 0.05*
**** significant at p < 0.10*
 # Refer to Table 5.4 for variable definitions

In general Table 6.3, illustrates that there was a significant difference (t = 1.799, p<0.10) between males' and females' tax knowledge. It shows that males' tax knowledge (mean = 132.13, SD = 17.92) was significantly better than females' (mean = 130.25, SD = 16.15). Moreover, males were also found to be more significantly knowledgeable in terms of

familiarity with employment income (mean = 6.77, SD = 2.83, t = 3.506, $p < 0.01$) and rebates (mean = 14.34, SD = 3.77, t = 2.044, $p < 0.05$).

These results were also supported by Mann-Whitney and Wilcoxon (MWW)[118] tests which showed that there were significant differences between males and females in terms of knowledge on rebates ($p<0.01$, $z = -2.593$) and total score of the tax knowledge ($p<0.05$, $z = -2.08$). However, the MWW test indicated that significant tax knowledge differences occurred in knowledge about responsibility and rights ($p<0.01$, $z = -3.286$) instead of employment income as suggested by the t-test.

6.5.1.2 A7 – Attended tax courses

Table 6.4 illustrates t-test results between taxpayers who had attended tax courses (A7) and tax knowledge variables (B1 to B8). This analysis attempts to investigate whether attending tax courses could increase knowledge of tax. It is theorised that the more tax courses that the taxpayers attend, the better their tax knowledge would be (refer section 4.2). In general the t-test suggests that there was significant difference between the tax knowledge of taxpayers who had attended tax courses and those who had not with $t = 4.585$, $p < 0.01$.

[118] To test the difference in medians, details can be found in 5.4.1.2.

Table 6.4: Mean difference between variables (t-test) – A7 (Attended tax courses)

	B1			B2			B3			B4		
	Mean	**SD**	**t**	**Mean**	**SD**	**t**	**Mean**	**SD**	**t**	**Mean**	**SD**	**t**
A7			*4.585**			*9.40**			*8.338**			*6.491**
Yes	*133.52*	*16.84*		*5.91*	*2.68*		*27.49*	*5.15*		*18.76*	*5.45*	
No	*130.61*	*16.99*		*6.56*	*2.70*		*26.30*	*5.14*		*17.63*	*5.58*	

	B5			B6			B7			B8		
	Mean	**SD**	**t**	**Mean**	**SD**	**t**	**Mean**	**SD**	**t**	**Mean**	**SD**	**t**
A7			*.743*			*.987*			*.903*			*20.921**
Yes	*32.46*	*5.91*		*18.13*	*5.63*		*13.86*	*3.85*		*10.68*	*2.89*	
No	*32.01*	*6.32*		*18.56*	*5.34*		*14.14*	*3.62*		*9.52*	*3.23*	

** Significant at p < 0.01*

Taxpayers who had attended tax courses had a mean of 133.52 (SD = 16.84) compared to 130.61 (SD = 16.99). The two groups had significant mean difference with respect to their tax knowledge on B3, B4 and B8 with t = 8.338, 6.491 and 20.92 respectively ($p < 0.01$).

In addition, MWW tests also showed that there was a significant association between tax knowledge and tax course attendance. Tax knowledge on employment income ($p< 0.01$, $z = -3.016$), dividend and interest ($p<0.01$, $z = -2.615$), awareness of offences and penalties ($p<0.001$, $z = -4.614$) and general score of tax knowledge ($p< 0.05$, $z = -2.133$) appear to be significant.

6.5.1.3 A8 – Experience of being audited by IRB

Table 6.5 and Table 6.6 describe the relationship between tax knowledge and experience of being audited by the Inland Revenue Board (IRB). According to Table 6.5, there was

no significant mean difference between experience of being audited and tax knowledge level in general (A8:B1). However, as for A8:B5 and A8:B8, there were significant mean differences between experienced and non-experienced taxpayers in relation to knowledge about personal relief (B5) and awareness of offences, penalties and fines (B8) with t = 6.168 ($p < 0.01$) and 2.159 ($p<0.10$) respectively.

Table 6.5: Mean different between variables (t-test) – A8 – Audited by IRB

	B1			***B2***			***B3***			***B4***		
	Mean	***SD***	***t***	***Mean***	***SD***	***t***	***Mean***	***SD***	***t***	***Mean***	***SD***	***t***
A8												
Yes	*134.58*	*17.63*	*1.579*	*6.97*	*2.47*	*1.417*	*25.45*	*6.73*	*1.569*	*17.72*	*4.97*	*.011*
No	*130.97*	*16.89*		*6.42*	*2.71*		*26.56*	*5.08*		*17.82*	*5.59*	

	B5			***B6***			***B7***			***B8***		
	Mean	***SD***	***t***	***Mean***	***SD***	***t***	***Mean***	***SD***	***t***	***Mean***	***SD***	***t***
A8												
Yes	*34.65*	*5.34*	*6.168**	*18.94*	*5.81*	*.325*	*14.22*	*3.67*	*.056*	*10.50*	*3.35*	*2.159****
No	*32.65*	*6.23*		*18.42*	*5.36*		*14.07*	*3.65*		*9.70*	*3.20*	

** Significant at p <0.01*
**** Significant at p < 0.10*

The t-test revealed that experience of being audited by IRB did not significantly increase tax knowledge. In addition ANOVA and post hoc test analysis as illustrated in Table 6.6 also supported the theory that the frequency of being audited did not significantly affect the level of tax knowledge. Taxpayers who had been audited once had significantly better tax knowledge than those audited three times with $F = 4.375$, $p < 0.01$ in terms of knowledge about employment income (B3). On the other hand, the frequency of being audited had significant mean difference with $F = 2.429$, $p< 0.10$ for awareness of

offences, penalties and fines (B8). However, the Scheffe post hoc test did not indicate any significant different for A8a:B8.

Table 6.6: Mean differentcebetween variables (t-test) – A8a – Audited by IRB (frequency)

	B1			***B2***			***B3***			***B4***		
	Mean	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***
A8a			*1.246*			*.083*			*4.375**			*.407*
1 time	*138.47*	*15.23*		*6.91*	*2.35*		*27.00#*	*5.64*		*17.39*	*4.86*	
2 times	*124.80*	*27.30*		*7.40*	*2.70*		*21.80*	*8.87*		*16.60*	*7.16*	
3 times	*136.83*	*15.78*		*7.00*	*2.82*		*15.00#*	*5.65*		*20.50*	*3.53*	

	B5			***B6***			***B7***			***B8***		
	Mean	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***
A8a			*.895*			*.178*			*.195*			*2.429****
1 time	*35.82*	*4.923*		*19.26*	*5.94*		*14.29*	*3.92*		*10.69*	*3.56*	
2 times	*32.40*	*6.69*		*19.40*	*8.23*		*15.20*	*3.03*		*7.20*	*3.89*	
3 times	*36.00*	*5.65*		*22.00*	*.00*		*15.50*	*4.94*		*12.50*	*.70*	

** Significant at p <0.01*
**** Significant at p < 0.10*
 # Scheffe post hoc test, p< 0.05

The MWW test has shown that knowledge about personal relief ($p<0.05$, $z = -2.505$) is the only variable that appears to be significant, implying that experience of being audited by the IRB did not increase taxpayers' knowledge in any area except knowledge about personal relief.

6.5.2 One-way ANOVA, post hoc test (Scheffe[119]) and Kruskall Wallis (KW)

Variables involved in this section are race/ethnicity, religion, education level, monthly income, location and age (refer section 5.4.1.2 for details of these methods of analysis).

6.5.2.1 A2 – Race/Ethnicity

Table 6.7 demonstrates ANOVA and post hoc tests (Scheffe) between race (A2) and tax knowledge variables (B1). Results suggest that there was a significant difference in terms of tax knowledge among Malays, Chinese, Indian and other ethnic groups with $F = 2.351$ ($p < 0.01$). Post hoc tests ($p < 0.05$) showed that Malay respondents had significantly higher tax knowledge than others with mean = 131.45, SD = 16.72. In addition results also indicated that there were significant mean differences with regard to certain sub-level tax knowledge variables, namely taxpayers' responsibilities and rights (B2) ($F = 2.139$, $p < 0.05$), employment income (B3) ($F = 2.202$, $p < 0.05$), dividend and interest ($F = 6.620$, $p < 0.01$), rebates (B7) ($F = 5.164$, $p < 0.01$) and awareness of offences, penalties and fines (B8) ($F = 2.301$, $p < 0.01$). As for B4, Indian's tax knowledge was significantly the highest followed by Chinese, Malays and other ethnics while for B7, again Malay was the highest group compared to other ethnics (mean = 14.25, SD = 3.67, $p < 0.01$).

[119] Post hoc test (Scheffe) is used to examine the significant difference among independent variables in relation to dependent variable. Scheffe tests could describe which of the dependent variables has most significant effect (Norusis 2008;Hong 2005:77)

Table 6.7: ANOVA and Post Hoc test (Scheffe) – A2 (Race)

	B1			B2			B3			B4		
	Mean	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***
IV												
A2			*2.351**			*2.139***			*2.202***			*6.62**
Malay	*131.45#*	*16.72*		*6.51*	*2.67*		*26.56*	*4.90*		*17.72 #*	*5.56*	
Chinese	*130.97*	*18.78*		*5.79*	*2.68*		*27.18*	*5.44*		*18.74#*	*5.58*	
Indian	*129.96*	*16.48*		*6.34*	*3.12*		*25.07*	*6.76*		*20.39#*	*5.20*	
Others	*123.48#*	*19.42*		*6.94*	*2.89*		*25.34*	*7.88*		*15.06#*	*4.27*	

	B5			B6			B7			B8		
	Mean	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***
A2			*.430*			*1.157*			*5.164**			*2.301**
Malay	*32.11*	*6.18*		*18.55*	*5.38*		*14.25#*	*3.67*		*9.77*	*3.14*	
Chinese	*32.16*	*6.96*		*17.64*	*6.00*		*13.02#*	*3.43*		*10.02*	*3.46*	
Indian	*31.88*	*6.32*		*17.91*	*4.78*		*13.75*	*3.43*		*9.05*	*3.05*	
Others	*30.90*	*6.25*		*19.34*	*4.86*		*12.50#*	*3.63*		*8.59*	*3.97*	

** Significant at p <0.01*
*** Significant at p <0.05*
**** Significant at p < 0.10*
 # Scheffe post hoc test, p< 0.05

Non-parametric test, KW and median tests also suggested that the other ethnic groups had significant differences, particularly in knowledge about responsibility ($p<0.05$, $\chi^2 = 8.731$, med = 6), dividend and interest ($p<0.001$, $\chi^2= 20.450$, med = 18), rebates ($p<0.01$, $\chi^2= 17.195$, med = 14) and total tax knowledge scores ($p<0.10$, $\chi^2= 6.687$, med = 131).

6.5.2.2 A3 – Religion

Table 6.8 illustrates ANOVA and the post hoc test between religion (A3) and tax knowledge variables (B1 to B8). In general ANOVA suggested that there was no significant difference between tax knowledge and religion except for sub tax knowledge variables, namely dividend and interest income (B4) and personal relief (B5). There was significant mean difference for knowledge about personal relief with $F = 2.264$, $p < 0.01$. The post hoc test suggested that Buddhist taxpayers were significantly more knowledgeable than Christian with mean = 34.23, SD = 5.48, $p < 0.05$.

Table 6.8: ANOVA and Post Hoc test (Scheffe) – A3 (Religion)

	B1			B2			B3			B4		
	Mean	*SD*	*F*	*Mean*	*SD*	*F*	*Mean*	*SD*	*F*	*Mean*	*SD*	*F*
IV												
A3			*1.262*			*1.437*			*1.437*			
Muslim	*131.34*	*16.96*		*6.48*	*2.64*		*6.48*	*2.64*		*17.74*	*5.58*	*3.385**
Christian	*127.57*	*15.36*		*6.26*	*2.80*		*6.27*	*2.80*		*18.22*	*4.34*	
Buddha	*136.03*	*19.09*		*5.67*	*2.86*		*5.67*	*2.86*		*19.38*	*5.60*	
Hindu	*130.83*	*17.90*		*5.83*	*2.89*		*5.83*	*2.90*		*20.72*	*5.57*	
Others	*130.67*	*19.97*		*7.67*	*6.35*		*7.67*	*6.30*		*13.00*	*4.58*	

	B5			B6			B7			B8		
	Mean	*SD*	*F*	*Mean*	*SD*	*F*	*Mean*	*SD*	*F*	*Mean*	*SD*	*F*
A3			*2.264**			*1.364*			*1.269*			*.626*
Muslim	*32.15*	*6.21*		*18.48*	*5.40*		*14.15*	*3.69*		*9.79*	*3.16*	
Christian	*30.13*	*5.99#*		*19.10*	*4.47*		*13.02*	*3.11*		*9.28*	*3.50*	
Buddha	*34.23*	*5.48#*		*17.23*	*6.04*		*13.64*	*3.57*		*10.00*	*3.45*	
Hindu	*31.29*	*6.58*		*17.03*	*4.95*		*13.55*	*4.01*		*9.41*	*3.35*	
Others	*34.33*	*3.51*		*21.33*	*7.77*		*14.00*	*2.65*		*8.00*	*4.36*	

** Significant at p <0.01*
 # Scheffe post hoc test, p< 0.05

KW and median tests also suggested that religion produced significant difference particularly regarding knowledge about responsibility ($p<0.10$, $\chi^2 = 8.672$ med = 6), dividend and interest ($p<0.01$, $\chi^2= 16.075$, med = 18), employment ($p<0.05$, $\chi^2= 11.719$, med = 27) and personal relief ($p<0.10$, $\chi^2= 9.277$, med = 32).

6.5.2.3 A4 – Education level

Table 6.9 illustrates ANOVA and the post hoc test between education level (A4) and tax knowledge variables (B1 to B8). In general ANOVA suggested that there was no significant difference between an individual's education level and tax knowledge. However, education level appears to have an impact in terms of sub tax knowledge variables, namely dividend and interest income (B4) ($F = 2.628$, $p < 0.01$), child relief

(B6) (F= 3.1113, p < 0.01) and rebates (B7) (F = 1.529, P < 0.10). As for A4 – B6 relationship, surprisingly the post hoc test reported that the SPM/STPM holders had significantly higher tax knowledge than bachelor/professional qualification or equivalent (mean = 19. 23, SD = 5.66, p <0.01).

Table 6.9: ANOVA and Post Hoc test (Scheffe) – A4 (Education level)

	B1			***B2***			***B3***			***B4***		
	Mean	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***
IV												
A4			*.809*			*.234*			*.494*			*2.628**
SPM/STPM	*130.74*	*18.41*		*6.41*	*2.80*		*26.23*	*5.99*		*17.38*	*5.37*	
Cert./Diploma	*131.33*	*15.94*		*6.56*	*2.47*		*26.66*	*5.01*		*17.41*	*5.66*	
Bachelor/Prof.	*130.70*	*16.62*		*6.40*	*2.87*		*26.61*	*4.52*		*18.13*	*5.52*	
Master	*131.66*	*17.66*		*6.48*	*2.65*		*26.30*	*5.50*		*19.06*	*5.85*	
Ph.D	*139.26*	*15.82*		*6.07*	*6.07*		*27.67*	*3.62*		*20.53*	*4.10*	

	B5			***B6***			***B7***			***B8***		
	Mean	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***	***Mean***	***SD***	***F***
A4			*.844*			*3.113**			*1.529***			*.841*
SPM/STPM	*31.61*	*6.70*		*19.23*	*5.66#*		*14.26*	*4.02*		*9.74*	*3.10*	
Cert./Diploma	*32.33*	*6.43*		*18.73*	*5.14*		*14.39*	*3.52*		*9.60*	*3.11*	
Bachelor/Prof.	*32.07*	*5.76*		*17.82*	*5.37#*		*13.79*	*3.58*		*9.70*	*3.32*	
Master	*32.31*	*6.54*		*17.49*	*5.49*		*13.72*	*3.43*		*10.15*	*3.21*	
Ph.D	*34.63*	*5.53*		*20.08*	*3.95*		*15.00*	*2.67*		*8.93*	*3.45*	

** Significant at p <0.01*
**** Significant at p < 0.10*
 # Scheffe post hoc test, p< 0.05

KW and median tests also suggested that different educational levels significantly affected some sub-levels of tax knowledge, particularly knowledge about dividend and interest (p<0.01, χ^2= 15.537, med = 18) and child relief (p<0.001, χ^2= 18.545, med = 18). However, the total score of tax knowledge appears to be not significantly associated with the level of taxpayers' education.

6.5.2.4 A5 – Monthly Income

Table 6.10 illustrates the results of ANOVA and the post hoc test between monthly income[120] (A5) and tax knowledge variables (B1 to B8). ANOVA suggested that there was a significant difference between monthly income level and tax

[120] The average income in Malaysia in 2008 was RM25,784 (RM2,149 per month), 2009 (3rd quarter) was RM24,131 (RM2,011 per month).(Malaysia Department of Statistics, 2010)

Table 6.10: ANOVA and Post Hoc test (Scheffe) – A5 (Monthly income)

		B1			B2			B3		
		Mean	**SD**	**F**	**Mean**	**SD**	**F**	**Mean**	**SD**	**F**
IV	*IV*									
A5 (RM)	*A5 (£)*			*3.431**			*1.436****			*3.671**
<1000	*<153*	*131.39*	*17.44*		*7.13*	*2.88*		*25.42*	*5.56*	
1001 -2000	*154 - 307*	*128.42#*	*16.13*		*6.53*	*2.57*		*25.61#*	*5.38*	
2001 – 4000	*308 – 615*	*132.98#*	*16.62*		*6.42*	*2.75*		*26.99#*	*4.93*	
4001 – 6000	*616 – 923*	*132.62*	*18.39*		*6.18*	*2.70*		*27.33#*	*4.85*	
6001 – 8000	*924 – 1231*	*125.49*	*16.44*		*6.18*	*2.75*		*26.50*	*4.91*	
8001 – 10000	*1232 - 1538*	*135.61*	*19.09*		*7.10*	*3.18*		*27.36*	*2.58*	
>10000	*>1538*	*127.67*	*20.90*		*5.63*	*5.63*		*27.58*	*6.94*	
		B4			**B5**			**B6**		
		Mean	**SD**	**F**	**Mean**	**SD**	**F**	**Mean**	**SD**	**F**
A5 (RM)	*A5 (£)*			*1.180*			*3.805**			*5.671**
<1000	*<153*	*17.18*	*6.50*		*30.80*	*6.38*		*20.70#*	*4.00*	
1001 -2000	*154 - 307*	*17.37*	*4.92*		*31.00#*	*6.40*		*19.07*	*5.07*	
2001 – 4000	*308 – 615*	*18.13*	*5.83*		*32.67#*	*5.90*		*18.41#*	*5.38*	
4001 – 6000	*616 – 923*	*18.33*	*5.65*		*33.33#*	*6.06*		*17.37#*	*5.94*	
6001 – 8000	*924 – 1231*	*17.85*	*5.91*		*31.81*	*5.60*		*15.65#*	*5.71*	
8001 – 10000	*1232 - 1538*	*16.45*	*5.22*		*32.91*	*9.73*		*18.35*	*5.77*	
>10000	*>1538*	*16.72*	*5.54*		*31.21*	*8.09*		*16.26#*	*6.15*	
		B7			**B8**					
		Mean	**SD**	**F**	**Mean**	**SD**	**F**			
A5 (RM)	*A5 (£)*			*1.302*			*2.542**			
<1000	*<153*	*14.41*	*3.61*		*9.64*	*2.66*				
1001 -2000	*154 - 307*	*14.15*	*3.57*		*9.23#*	*3.04*				
2001 – 4000	*308 – 615*	*14.15*	*3.65*		*9.98#*	*3.17*				
4001 – 6000	*616 – 923*	*13.85*	*3.75*		*10.05*	*3.40*				
6001 – 8000	*924 – 1231*	*13.12*	*3.96*		*9.12*	*3.86*				
8001 – 10000	*1232 - 1538*	*16.00*	*2.79*		*10.45*	*3.64*				
>10000	*>1538*	*13.21*	*4.50*		*10.47*	*4.51*				

** Significant at p <0.01*
**** Significant at p < 0.10*
 # Scheffe post hoc test, p< 0.05

knowledge with F = 3.431, p < 0.01. Post hoc test showed that taxpayers whose monthly income range between RM2001 – RM4000 (£308 – £615) had significantly more tax knowledge than income group of RM1001 – RM2000 (£154 – £307) (mean 132.98, SD 16.62, p < 0.01). Monthly income played a major role in determining tax knowledge. This was proven by the significant mean difference in taxpayers' income levels for knowledge about taxpayers' responsibilities and rights (B2) (F = 1.436 , p < 0.10), employment income (B3) (F = 3.671, p < 0.01), personal relief (B5) (F= 3.805, p < 0.01), child relief (B6) (F = 5.671, p < 0.01) and awareness of offences, penalties and fines (B8) (F = 2.542, p < 0.01).

The post hoc test revealed that as for A5:B3 and A5:B5, middle income earners ranging between RM4001 – RM6000 (£616 – £923) had the highest mean in relation to income group RM2001 - RM4000 (£308 – £615) and RM1001 - RM2000 (£154 – £307) (significant at p < 0.05); as for A5:B6, lower income group earning below RM1000 (£153) per month had significantly better tax knowledge compared to earners ranging between RM2001 – RM8000 (£308 – £1231). As for A5:B8, taxpayers with income ranged between RM2001 – RM4000 (£308 – £615) had significantly higher tax knowledge than those in the RM1001 – RM2000 (£154 – £307) income group.

KW tests also suggested that different income levels had significant effects on tax knowledge variables. The test revealed that knowledge about employment ($p<0.01$, $\chi^2= 17.557$), personal relief ($p<0.001$, $\chi^2= 24.281$), child relief ($p<0.001$, $\chi^2= 30.190$), awareness of offences and penalties ($p<0.05$, $\chi^2= 16.039$), as well as the total score of

tax knowledge ($p<0.05$, $\chi^2= 18.92$) appears to be associated with the taxpayers' income level. Moreover, KW median tests also found that all tax knowledge variables (B1-B8) except for knowledge about rebates were significantly associated with the level of income. Median tests suggested that two variables were significant at p<001 (child relief ($\chi^2= 21.966$) and awareness of offences ($\chi^2= 18.157$)), three variables were significant at $p<0.05$ (responsibility ($\chi^2=12.792$), personal relief ($\chi^2=16.194$), and total score of tax knowledge ($\chi^2=12.643$)) and two variables were significant at $p<0.10$ (employment ($\chi^2 = 11.158$) and dividend and interest ($\chi^2 = 10.757$)).

6.5.2.5 A6 – Location

Table 6.11 illustrates ANOVA and post hoc tests between location (A6) and tax knowledge variables (B1 to B8). ANOVA suggested that there was significant difference between the location of taxpayers and their tax knowledge with $F = 2.320$, $p < 0.01$. Post hoc tests showed that taxpayers living in Johor had significantly higher tax knowledge than taxpayers living in Selangor / Kuala Lumpur with mean = 128.30, SD 15.35, $p<0.01$. The highest score came from Kelantan taxpayers with mean 134.63 (SD = 17.24) while the lowest came from Selangor / Kuala Lumpur taxpayers with mean 127.46 (SD = 17.40). ANOVA also revealed that there was also a significant mean difference between location and knowledge about employment income, A6:B3 ($F = 1.844$, $p < 0.01$), dividend and interest income, A6:B4 ($F = 1.828$, $p <0.01$), personal relief, A6:B5 ($F= 2.384$, $p<0.01$) and rebates, A6:B7 ($F = 1.466$, $p < 0.05$). As for A6:B3, post hoc tests reported that Perlis/Kedah taxpayers (mean = 28.10, SD = 4.77) were significantly more knowledgeable than Selangor / Kuala Lumpur taxpayers (mean = 25.49, SD = 4.85), $p < 0.05$.

Table 6.11: ANOVA and Post Hoc test (Scheffe) – A6 (Location)

	B1			B2			B3			B4		
	Mean	**SD**	**F**	**Mean**	**SD**	**F**	**Mean**	**SD**	**F**	**Mean**	**SD**	**F**
A6			*2.320**			*.846*			*1.844**			*1.828**
Sel/KL	*127.46#*	*17.40*		*6.54*	*2.41*		*25.49#*	*4.85*		*16.57*	*5.38*	
Perlis/Kedah	*133.68*	*16.44*		*6.24*	*2.69*		*28.10#*	*4.77*		*18.74*	*5.78*	
PP/Perak	*129.61*	*16.20*		*6.29*	*2.75*		*26.82*	*5.42*		*17.31*	*5.54*	
Mel/NS	*131.98*	*18.08*		*6.70*	*2.72*		*26.26*	*5.49*		*17.84*	*5.40*	
Johor	*128.30#*	*15.35*		*6.20*	*2.50*		*26.17*	*5.12*		*16.48*	*4.40*	
Kelantan	*134.63*	*17.24*		*6.23*	*2.89*		*26.07*	*5.17*		*18.63*	*6.03*	
Terengganu	*131.72*	*14.44*		*6.91*	*2.85*		*26.53*	*4.48*		*18.52*	*5.49*	
Pahang	*130.62*	*17.75*		*6.48*	*2.57*		*27.71*	*4.73*		*18.34*	*6.04*	
Sabah/Lab	*134.10*	*18.98*		*6.65*	*3.07*		*26.61*	*6.46*		*18.11*	*5.83*	
Sarawak	*129.63*	*16.52*		*6.30*	*2.61*		*26.63*	*4.69*		*17.72*	*5.32*	

	B5			B6			B7			B8		
	Mean	**SD**	**F**	**Mean**	**SD**	**F**	**Mean**	**SD**	**F**	**Mean**	**SD**	**F**
A6			*2.384**			*.972*			*1.466***			*1.344*
Sel/KL	*31.44*	*6.83*		*17.91*	*5.02*		*14.28*	*3.49*		*3.09*	*1.15*	
Perlis/Kedah	*31.76*	*5.85*		*18.43*	*5.28*		*14.51*	*3.45*		*3.26*	*1.10*	
PP/Perak	*31.53*	*6.36*		*18.14*	*5.34*		*13.88*	*3.57*		*3.35*	*1.05*	
Mel/NS	*32.45*	*6.67*		*18.90*	*5.77*		*14.10*	*3.76*		*3.18*	*1.02*	
Johor	*32.44*	*6.40*		*18.10*	*5.67*		*4.22*	*3.73*		*3.07*	*1.08*	
Kelantan	*33.18*	*5.05*		*19.53*	*5.56*		*14.73*	*4.14*		*3.29*	*1.13*	
Terengganu	*31.87*	*6.66*		*18.69*	*4.94*		*14.08*	*3.63*		*3.22*	*1.04*	
Pahang	*31.70*	*6.11*		*17.92*	*5.41*		*13.44*	*3.35*		*3.23*	*1.07*	
Sabah/Lab	*32.76*	*6.26*		*18.47*	*5.39*		*14.24*	*3.88*		*3.48*	*1.09*	
Sarawak	*31.95*	*6.03*		*18.71*	*5.57*		*13.38*	*3.49*		*3.27*	*0.92*	

** Significant at p <0.01*
*** Significant at p < 0.05*
**** Significant at p < 0.10*
 # Scheffe post hoc test, p< 0.05

KW tests also suggested that there was an association between the locations where taxpayers lived and their level of tax knowledge. Results reported that knowledge about dividend and interest ($p<0.01$, $\chi^2= 22.673$), employment ($p<0.05$, $\chi^2= 19.131$), rebates ($p<0.10$, $\chi^2= 15.586$) and total tax knowledge score ($p<0.05$, $\chi^2= 18.627$) were also significantly varied between locations. In contrast with the t-test results (Kelantan region), KW suggested that taxpayers from Sabah/Labuan region appear to be the most knowledgeable taxpayers compared to other regions. However, Kelantan region remained with the second highest score in KW tests.

6.5.2.6 A8 – Age

ANOVA suggested that there was a significant difference between age and level of tax knowledge with $F = 6.178$, $p < 0.001$. Taxpayers' age plays a major role in determining their tax knowledge. This was evidenced by the significant mean difference between taxpayers' age and knowledge about taxpayers' responsibilities and rights (B2) ($F = 1.893$, $p < 0.10$), employment income (B3) ($F = 5.303$, $p < 0.001$), personal relief (B5) ($F= 7.999$, $p < 0.001$), dividend and interest (B4) ($F= 2.429$, $p < 0.05$) and awareness of offences, penalties and fines (B8) ($F = 6.866$, $p < 0.001$). The test also suggested that older taxpayers are more knowledgeable (for example age group > 56 (mean = 138, SD = 19.38), 46-50 (mean = 136, SD = 17.42), 41-45 (mean = 133, SD = 17.51).

KW tests also suggested that difference in age group had significant effect on tax knowledge variables. All variables except for knowledge about child relief were

significantly associated with age. The test revealed that knowledge about responsibility ($p<0.01$, $\chi^2=18.289$), employment ($p<0.001$, $\chi^2=33.997$), dividend and interest ($p<0.10.$, $\chi^2=12.866$), personal relief($p<0.001.$, $\chi^2= 56.984$), rebates($p<0.10$, $\chi^2= 12.794$), awareness of offences and penalties($p<0.001$, $\chi^2= 49.934$) and total score($p<0.001$, $\chi^2=40.401$ were significantly varied between the age groups.

6.5.3 Summary of results of Stage 1 – Characteristics of knowledgeable taxpayers

In conclusion, the above tests suggested that tax knowledge was influenced by gender, ethnicity, income level, location and attending tax courses. Results also revealed that the most knowledgeable group of taxpayers were:

- Males,
- Malays (followed by Chinese and Indians),
- Earned monthly income ranged RM8,001 – RM10,000 (£1,232 -£1,538) followed by RM2,000 to RM 4,000 (£308 -£615),
- Reside in north east of Peninsular Malaysia – Kelantan followed by Sabah/Labuan and Perlis/Kedah.
- As expected, taxpayers who had attended tax courses appear to be more knowledgeable. Perhaps surprisingly however, experience of being audited by IRB did not significantly influence levels of tax knowledge. Taxpayers who have been audited once had significantly better tax knowledge than those audited three times.
- Older taxpayers aged more than 56 years old.

Figure 6.6 illustrates the results while Table 6.12 summarises the relationship between the research objectives and results of Stage 1.

Figure 6.6: Result Stage 1- Characteristics of knowledgeable taxpayers in SAS in Malaysia

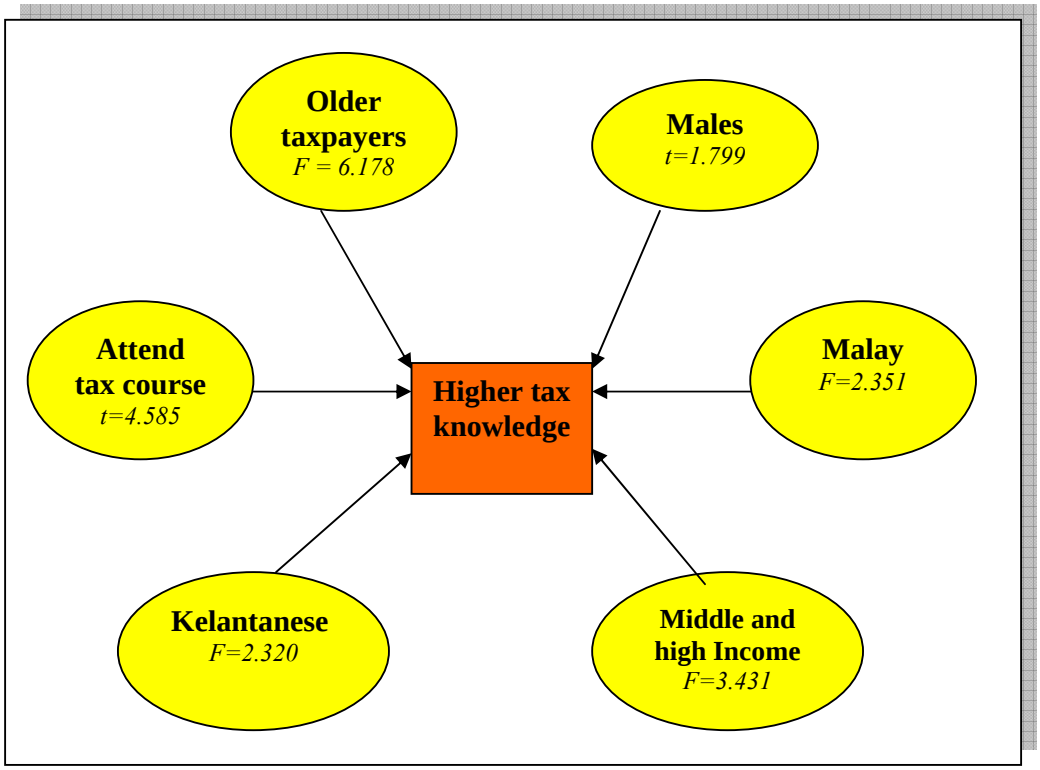


Table 6.12: Summary and relationship between research objectives and results for Stage 1

Main research objectives	Sub research objectives	Variables	Findings (levels of knowledge)		
			Most	**Moderate**	**least**
To obtain a complete overview of the tax knowledge of individual Malaysian taxpayers.	1. To determine the level of tax knowledge of individual taxpayers;	Gender	Males	Females	Females
		Age	Older taxpayers (more than 56 years old)	Age between 36 – 45 years old	Age less than 25 years old
	2. To identify the characteristics of knowledgeable and less knowledgeable taxpayers;	Ethnicity	Malay	Chinese	Indian
		Income	Middle and high income ranged RM2,001 – RM4,000 and RM8,001 – RM10,000	< RM1,000	RM6,001 – RM8,000
		Location	Live in Kelantan	Terengganu	KL/Selangor
		Attended tax course?	Yes	No	No

The relationships between results in Stage 1 and prior literature and hypotheses are discussed in section 7.2.

6.6 STAGE 2 – TAX KNOWLEDGE AND TAX COMPLIANCE BEHAVIOUR

This section examines association between tax knowledge and tax compliance behaviour.

6.6.1 Stepwise multiple regressions

Table 6.13 illustrates the Pearson correlation matrix for dependent and independent variables. There were a number of significant correlations between tax compliance and tax knowledge. For example, there were fairly high correlations ($p<0.01$) between TCHYP and TNRES ($r = .347$), TCHYP and TNCHILDREL ($r = .182$) and TCHYP and TNEMPLOY ($r = .16$). Correlations were also found ($p<0.01$) between TCDIR and TNCHILDREL ($r = .30$), TCDIR and TNREB ($r = .237$) and TCDIR and TNRES ($r = .15$). Table 6.13 also evidences that independent and dependent variables were not all highly correlated (more than 0.8[121]), hence all dependent variables were included in the analysis.

[121] Black (2001: 558) suggested that the cut off point for choosing the independent variables is 0.8 to avoid multicollinearity.

Table 6.13: Stage 2 -Pearson correlation (*r*) matrix for dependent and independent variables.

		1	2	3	4	5	6	7	8	9	10
1.	$TCHYP_{40:60}$	1									
2.	*TCDIR*	-.293**	1								
3.	*TNRES (B2)*	-.347**	.150**	1							
4.	*TNEMPLOY (B3)*	.160**	.028	-.138**	1						
5.	*TNDIVINT (B4)*	.059	.030	.013	.207**	1					
6.	*TNPERSREL (B5)*	.032	.145**	-.059	.145**	.085**	1				
7.	*TNCHILDREL (B6)*	-.182**	.300**	.067*	-.022	.025	.220**	1			
8.	*TNREB (B7)*	-.145**	.237**	.046	.046	.032	.291**	.445**	1		
9.	*TNAWARE (B8)*	.118**	.054	-.111**	.125**	.110**	.152**	.076*	.134**	1	
10.	*TNTOTAL (B1)*	-.034	.258**	.085**	.453**	.488**	.620**	.533**	.536**	.479**	1

See Table 5.5 for variable definitions
Dependent variables - $TCHYP_{40:60}$ and TCDIR
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

6.6.1.1 Relation between tax knowledge and tax compliance direct questions (*TCDIR*)

Results show that knowledge about child relief, responsibilities and rebates appears to be significantly correlated with tax compliance (TCDIR). As shown in Table 6.14, by examining t statistics for the constant and four independent variables, estimated regression shows that estimated coefficient for constants, B2, B6,B7 and B1 were statistically significant at 1% level (as p value < 0.01). All significant variables had a positive effect on tax compliance. Estimated coefficient of correlation (R = 0.36) shows a reasonable linear correlation between tax knowledge and tax compliance. Estimated coefficient of determination, R^2 is 0.13 indicating that 13% variance of tax

compliance (dependent variables) was explained by the variance of tax knowledge (independent variables).

These positive relationships illustrate that taxpayers with higher tax knowledge potentially tend to be more compliant. The *F* statistic (*F*= 37.82, *p* = 0.000) was substantiated at 1% significance level, implying that the null hypothesis that regression coefficients were all zeros can be rejected at 1% level of significance. Thus the estimated regression was efficient for prediction.

Results also revealed that there was no multicollinearity among the independent variables. Tolerance indexes were high between .59 and .99 and Variance Inflation Factor (VIF) was also low (less than 1.69). Tolerance is defined as the amount of variability of selected independent variables not explained by other independent variables. VIF is calculated as the inverse of tolerance value. For example if the tolerance value is 0.677, thus VIF is 1.478 (1.0 ÷ 0.677 = 1.478) (Hair *et.al.* 2006:227) It is calculated as 1 - R^2 (from each independent variable). Multicollinearity exists when the tolerance value is low (the range is between 0 to 1) (Hair *et.al.* 2006: 227-228). Hair et.al (2006: 227) suggested that common cut-off threshold is tolerance value 0.10 and thus VIF is 10.

Table 6.14 : Stepwise multiple regressions - tax knowledge and tax compliance direct questions (*TCDIR*)

Variables	Coefficient	t	Sig.	Tolerance	VIF
Constant	49.060	17.531	.000		
B6 – TNCHILDREL	.413	5.327	.000	.677	1.478
B2 – TNRES	.614	4.750	.000	.987	1.013
B7 – TNREB	.314	2.756	.006	.670	1.493
B1 – TNTOTAL	.067	2.510	.012	.593	1.687
Model fit:					
R	*.36*				
R^2	*.13*				
Adjusted R^2	*.126*				
Std. error	*10.97*				

Note:

$$TCDIR_i = \alpha + \beta_1 TNRES_i + \beta_2 TNEMPLOY_i + \beta_3 TNDIVINT_i + \beta_4 TNPERSREL_i + \beta_5 TNCHILDREL_i + \beta_6 TNREB_i + \beta_7 TNAWARE_i + \beta_8 TNTOTAL_i + \varepsilon_i$$

Where:

$TCDIR_i$	*- Tax compliance score (direct questions)*
$TNRES_i$	*- Tax knowledge about responsibilities and rights*
$TNEMPLOY_i$	*- Tax knowledge about employment income*
$TNDIVINT_i$	*- Tax knowledge about dividend and interest*
$TNPERSREL_i$	*- Tax knowledge about personal relief*
$TNCHILDREL_i$	*- Tax knowledge about child relief*
$TNREB_i$	*- Tax knowledge about rebates*
$TNAWARE_i$	*- Tax knowledge about awareness of offences, penalties and fines*
$TNTOTAL_i$	*- Total tax knowledge score*

6.6.1.2 Relationship between tax knowledge and tax compliance hypothetical questions (*$TCHYP_{40:60}$*)

In comparison to the result in 6.6.1.1, these results indicate that independent variables that impact tax compliance behaviour increased from four to five variables. It appears that knowledge about responsibilities, child relief and rebates are still significant while two additional variables occurred- employment income and awareness of offences, penalties and fines.

Based on Table 6.15, estimated regression showed that estimated coefficient for constant, B2, B3, B6, B7 and B8 were statistically significant at 1% level (p value < 0.01). The B3 and B8 variables had a positive effect on tax compliance while B2, B6 and B7 had a negative relationship with tax compliance.

Results implied that taxpayers with good knowledge about responsibilities, child relief and rebates tend to be non compliant with negative coefficient .53, .12 and .12 respectively. On the other hand, taxpayers with good knowledge of employment income and awareness of offences, penalties and fines tend to be more compliant.

Table 6.15 : Stepwise multiple regressions - tax knowledge and tax compliance hypothetical questions (TCHYP)

Variables	Coefficient	t	Sig.	Tolerance	VIF
Constant	23.184	22.901	.000		
B2 - TNRES	-.532	-10.466	.000	.963	1.038
B6 - TNCHILDREL	-.119	-4.291	.000	.792	1.262
B3 - TNEMPLOY	.106	4.028	.000	.960	1.042
B8 - TNAWARE	.121	2.830	.005	.952	1.050
B7 - TNREB	-.112	-2.757	.006	.788	1.269
Model fit:					
R	.419				
R^2	.176				
Adjusted R^2	.172				
Std. error	4.24				

Note:

$$TCHYP_i = \alpha + \beta_1 TNRES_i + \beta_2 TNEMPLOY_i + \beta_3 TNDIVINT_i + \beta_4 TNPERSREL_i + \beta_5 TNCHILDREL_i + \beta_6 TNREB_i + \beta_7 TNAWARE_i + \beta_8 TNTOTAL_i + \varepsilon_i$$

Where:

$TCHYP_i$ - *Tax compliance score (hypothetical questions)*
$TNRES_i$ - *Tax knowledge about responsibilities and rights*
$TNEMPLOY_i$ - *Tax knowledge about employment income*
$TNDIVINT_i$ - *Tax knowledge about dividend and interest*
$TNPERSREL_i$ - *Tax knowledge about personal relief*
$TNCHILDREL_i$ - *Tax knowledge about child relief*
$TNREB_i$ - *Tax knowledge about rebates*
$TNAWARE_i$ - *Tax knowledge about awareness of offences, penalties and fines*
$TNTOTAL_i$ - *Total tax knowledge score*

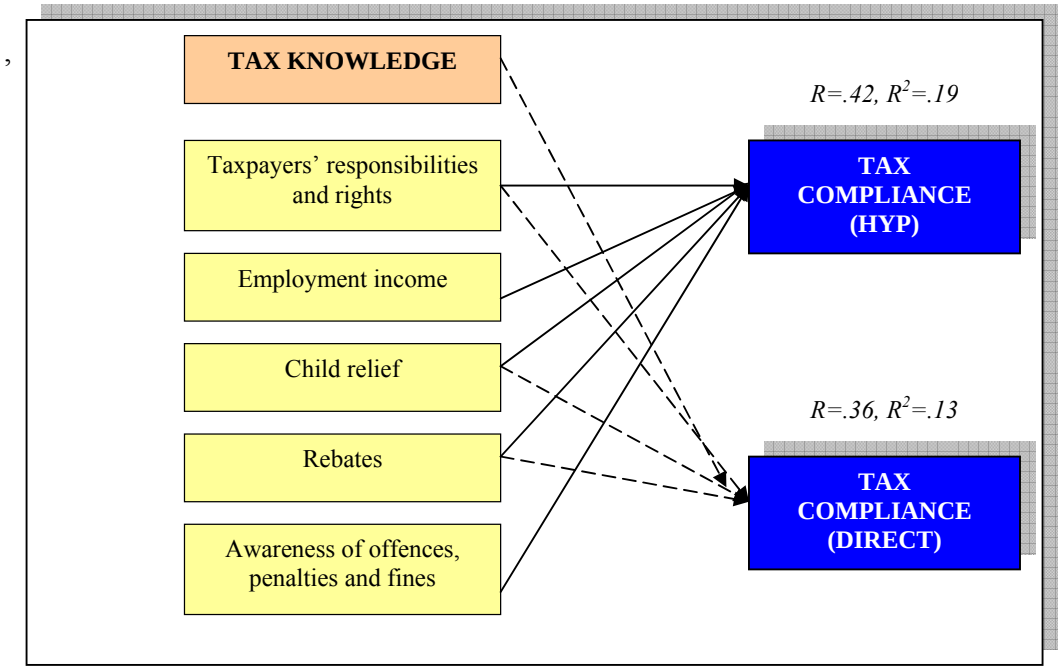
The estimated coefficient of correlation (R = 0.419) and the estimated coefficient of determination, (R^2 = 0.176) indicate a linear correlation between tax knowledge and tax compliance. The F statistic stand at 43.15, (p = 0.000) was substantiated at 1% significance level, implying that the null hypothesis that the regression coefficient are all zeros can be rejected at 1% level of significance. The result also revealed that there was no multicollinearity among the independent variables. The tolerance indexes were between .78 and .96 while the Variance Inflation Factor (VIF) was also low and ranged between 1.04 and 1.27.

6.6.2. Summary of results of Stage 2 – Relationship between tax knowledge and tax compliance.

Results suggest that tax knowledge had a significant impact on tax compliance both in direct and hypothetical questions, and consequently support the H_{S2} hypothesis (*Tax knowledge is positively associated with attitude towards tax compliance behaviour)*. Filling the gap as suggested by Eriksen and Fallan (1996) this study suggested that knowledge about employment income, awareness of offences, penalties and fines, taxpayers' responsibilities and rights, child relief and rebates, appears to be significantly correlated with tax compliance behaviour, thus rejecting the null hypothesis (refer 5.4.2.2 – H_{S2}). Discussion of results in Stage 2 appears in Chapter 7.

Figure 6.7 summarises all tax knowledge variables that affect tax compliance.

Figure 6.7: Tax knowledge variables that affect tax compliance.



6.7 STAGE 3 – TAX KNOWLEDGE AND TAX COMPLIANCE BEHAVIOUR WITH CONTROL VARIABLES

This section investigated the effect of inserting control variables in the regression models.

6.7.1 Multiple regressions with control variables

This section attempts to examine whether inserting control variables in the OLS will produce better explanatory values regarding tax compliance behaviour. Table 6.16 illustrates the Pearson correlation matrix for dependent, independent and control variables for Stage 3. There were a number of significant correlations between tax compliance and control variables. For example, there was significant association but

low correlation ($p<0.01$) between TCDIR and INCOME ($r = -0.172$) and TCDIR and EDUCATION ($r = -0.087$). Another significant and high correlations was also found ($p<0.01$) between TCHYP and AGE ($r = .264$), TCHYP and GENDER ($r = 0.095$) and TCHYP and INCOME ($r = .213$).

Table 6.16: Stage 3 -Pearson correlation matrix for dependent, independent and control variables.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.	*$TCHYP_{40:60}$*	1															
2.	*TCDIR*	-.293(**)	1														
3.	*TNRES (B2)*	-.347(**)	.150(**)	1													
4.	*TNEMPLOY (B3)*	.160(**)	.028	-.138(**)	1												
5.	*TNDIVINT (B4)*	.059	.030	.013	.207(**)	1											
6.	*TNPERSREL (B5)*	.032	.145(**)	-.059	.145(**)	.085(**)	1	.									
7.	*TNCHILDREL (B6)*	-.182(**)	.300(**)	.067(*)	-.022	.025	.220(**)	1									
8.	*TNREB (B7)*	-.145(**)	.237(**)	.046	.046	.032	.291(**)	.445(**)	1								
9.	*TNAWARE (B8)*	.118(**)	.054	-.111(**)	.125(**)	.110(**)	.152(**)	.076(*)	.134(**)	1							
10.	*TNTOTAL (B1)*	-.034	.258(**)	.085(**)	.453(**)	.488(**)	.620(**)	.533(**)	.536(**)	.479(**)	1						
11.	*GENDER*	.095(**)	-.040	-.107(**)	.006	.013	-.029	-.018	-.062(*)	-.017	-.055	1					
12.	*INCOME*	.213(**)	-.172(**)	-.069(*)	.112(**)	.029	.089(**)	-.161(**)	-.039	.071(*)	.030	-.250(**)	1				
13.	*AGE*	.264(**)	-.041	-.064(*)	.165(**)	.074(*)	.191(**)	-.047	.062(*)	.175(**)	.179(**)	-.206(**)	.427(**)	1			
14.	*EDUCATION*	.048	-.087(**)	-.011	.028	.084(**)	.045	-.086(**)	-.053	.019	.027	-.096(**)	.364(**)	.037	1		
15.	*COURSE*	-.040	-.009	.094(**)	-.088(**)	-.078(*)	-.027	.031	.029	-.139(**)	-.066(*)	-.013	-.069(*)	.045	-.051	1	
16.	*AUDITED*	-.003	-.010	-.037	.039	.003	-.077(*)	-.018	-.007	-.045	-.039	.061(*)	-.054	-.098(**)	-.049	.035	1

See Table 5.5 for variable definitions
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

A. Dependent variable TCHYP

Table 6.17 summarises the results of the OLS regression analysis for the base OLS regression model (Panel A) and the control variables (Panel B) to consider variables that affect tax compliance.

Table 6.17 describes that these models were significant at $p < 0.01$ level (F statistic ranging from 23.32 to 30.81), while R and R^2 were estimated at .430 and .496 and .185 to .246 respectively. The explanatory power of the base regression in Panel A is improved by the inclusion of control variables.

Panel A in Table 6.17 indicates that TNRES, TNCHILDREL and TNREB remain the determinants of tax compliance as suggested in the analysis in Stage 2 (Table 6.15), and negatively associated with TCHYP ($p<0.01$). TNREB appears to be the most important determinant (-.596, $p<0.001$). This negative association illustrates that taxpayers with high knowledge in TNRES, TNCHILDREL and TNREB tend to be less compliant. However, in contrast with this result, TNTOTAL appears to be another factor that could indicate significant increases in tax compliance ($p<0.10$). Although sub tax knowledge i.e TNRES, TNCHILDREL and TNREB had a negative association with tax compliance behaviour, multiple regressions results in Panel A suggested that general tax knowledge had a significant positive association with tax compliance behaviour.

Table 6.17 - OLS regressions results (dependent variable TCHYP)

	Coefficient	t	Sig.	VIF
Panel A:				
(Constant)	22.468	19.312	.000***	
TNRES (B2)	-.596	-10.478	.000***	1.207
TNEMPLOY (B3)	.042	1.088	.277	2.083
TNDIVINT (B4)	-.002	-.064	.949	2.091
TNCHILDREL (B6)	-.165	-4.250	.000***	2.367
TNREB (B7)	-.174	-3.287	.001***	2.039
TNAWARE (B8)	.045	.741	.459	2.086
TNTOTAL (B1)	.041	1.735	.083*	8.227
Model fit:				
R	.430			
R^2	.185			
Adjusted R^2	.179			
Std. error	4.24			
F statistic	30.81***			
Panel B:				
(Constant)	17.003	7.990	.000***	
TNRES (B2)	-.525	-10.054	.000***	1.074
TNEMPLOY (B3)	.062	2.246	.025**	1.119
TNDIVINT (B4)	.032	1.276	.202	1.083
TNPERSREL (B5)	.013	.561	.575	1.181
TNCHILDREL (B6)	-.089	-3.162	.002***	1.312
TNREB (B7)	-.125	-2.999	.003***	1.339
TNAWARE (B8)	.083	1.923	.055*	1.101
GENDER	1.293	4.589	.000***	1.112
INCOME	.551	3.375	.001***	1.516
AGE	.491	5.459	.000***	1.375
EDUCATION	-.019	-.133	.894	1.187
COURSE	.373	1.045	.296	1.062
AUDITED	.169	.226	.821	1.034
Model fit:				
R	.496			
R^2	.246			
Adjusted R^2	.235			
Std. error	4.09			
F statistic	23.32***			

Note:
** Significant at p < 0.10*
*** Significant at p < 0.05*
**** significant at p < 0.001*

$$TCHYP_{40:60} = \alpha + \beta_1 TNRES_i + \beta_2 TNEMPLOY_i + \beta_3 TNDIVINT_i + \beta_4 TNPERSREL_i + \beta_5 TNCHILDREL_i + \beta_6 TNREB_i + \beta_7 TNAWARE_i + \beta_8 TNTOTAL + \beta_9 GENDER_i + \beta_{10} INCOME_i + \beta_{11} AGE_i + \beta_{12} EDUC_i + \beta_{13} COURSE_i + \beta_{14} AUDITED_i + \varepsilon_i$$

Where:

$TCHYP_{40:60}$	*- Tax compliance score (hypothetical questions)*
$TCDIR_i$	*- Tax compliance score (direct questions)*
$TNRES_i$	*- Tax knowledge about responsibilities and rights*
$TNEMPLOY_i$	*- Tax knowledge about employment income*
$TNDIVINT_i$	*- Tax knowledge about dividend and interest*
$TNPERSREL_i$	*- Tax knowledge about personal relief*
$TNCHILDREL_i$	*- Tax knowledge about child relief*
$TNREB_i$	*- Tax knowledge about rebates*
$TNAWARE_i$	*- Tax knowledge about awareness of offences, penalties and fines*
$TNTOTAL_i$	*- Total tax knowledge score*
$GENDER_i$	*- Gender*
$INCOME_i$	*- Income level of the taxpayer*
AGE_i	*- Age*
$EDUC_i$	*- Education level*
$COURSE_i$	*- Experience of attending tax courses*
$AUDITED_i$	*- Experience of being audited by the tax authority*

Panel B (Table 6.17) however provides a different result after control variables were included. The inclusion of control variables has increased the number of significant independent variables, TNEMPLOY and TNAWARE but eliminated TNTOTAL. The regression model in Panel B suggested that TNRES remains the most important determinant of tax compliance (-.525, $p<0.001$). TNREB, TNCHILDREL, TNAWARE and TNEMPLOY become the next most important determinants of tax compliance. Again, consistent with the result in Panel A, TNRES, TNCHILDREL and TNREB had a negative association with tax compliance behaviour while TNAWARE and TNEMPLOY were positively associated with tax compliance.

In relation to the significance of control variables in Panel B, results show that GENDER, INCOME and AGE appear to be significantly correlated with tax compliance behaviour. Specifically, the association between GENDER and TCHYP was positive and significant ($p<0.001$), consequently these results support hypothesis

H_{3A} (*female taxpayers are significantly more compliant).* The association between INCOME and TCHYP was also positive and significant ($p<0.01$), consequently supporting hypothesis H_{3B} (*higher income earners are significantly more compliant).* The association between AGE and TCHYP was also positive and significant ($p<0.001$), consequently supporting hypothesis H_{3C} (*older people are significantly more compliant).* Finally, other control variables: EDUCATION, COURSE and AUDITED, had no significant association with TCHYP. Therefore, H_{3D}, H_{3E} and H_{3F} are not supported by the multivariate results.

These results demonstrate that the inclusion of control variables has increased the number of significant independent variables (from four to five) and has increased the coefficient of determination R^2 (from .179 to .246). The inclusion of control variables also evidenced that there was no multicollinearity among the independent variables with average VIF at 1.300.

B. Dependent variable TCDIR

Table 6.18 illustrates the results of OLS regressions by using TCDIR as the dependent variable. In line with results in Table 6.17, results show that these models were also significant at $p < 0.001$ level (F statistic ranging from 12.56 to 19.91), while the R and R^2 were estimated at .358 to .386 and .128 to .149 respectively. In contrast with results in Table 6.17, the explanatory power of base regression in Panel A was not significantly improved by inclusion of the control variables.

Based on Panel B (Table 6.18), results suggest that TNRES, TNPERSREL, TNCHILDREL and TNREB were the key determinants of tax compliance. The supplementary regression model suggested that TNRES remains the most important determinant of tax compliance ($p<0.001$) both in Panel A and B (Table 6.18).

With regards to the significance of control variables in Panel B (Table 6.18), results show that INCOME and GENDER appear to be significantly correlated with tax compliance behaviour. Specifically, the association between INCOME and TCDIR was negative and significant ($p<0.001$), consequently hypothesis H_{3B} is rejected (that lower income earners are significantly more compliant). The association between GENDER and TCDIR was also negative and significant ($p<0.10$), thus the hypothesis H_{3A} that females are significantly more compliant is accepted by the result. Finally, other control variables AGE, EDUCATION, COURSE and AUDITED, had no significant association with TCDIR.

Table 6.18 - OLS regressions results (dependent variable TCDIR)

	Coefficient	t	Sig.	VIF
Panel A:				
(Constant)	48.497	16.039	.000***	
TNRES (B2)	.604	4.088	.000***	1.207
TNEMPLOY (B3)	-.043	-.429	.668	2.084
TNDIVINT (B4)	-.122	-1.316	.188	2.095
TNCHILDREL (B6)	.329	3.263	.001***	2.370
TNREB (B7)	.236	1.715	.087*	2.042
TNAWARE (B8)	-.120	-.755	.450	2.087
TNTOTAL (B1)	.125	2.044	.041**	8.241
Model fit:				
R	.358			
R^2	.128			
Adjusted R^2	.121			
Std. error	11.02			
F statistic	19.91***			
Panel B:				
(Constant)	56.663	9.949	.000***	
TNRES (B2)	.725	5.198	.000***	1.074
TNEMPLOY (B3)	.114	1.537	.125	1.118
TNDIVINT (B4)	-.012	-.185	.853	1.083
TNPERSREL (B5)	.166	2.660	.008***	1.181
TNCHILDREL (B6)	.408	5.427	.000***	1.311
TNREB (B7)	.336	3.009	.003***	1.340
TNAWARE (B8)	.101	.877	.381	1.101
GENDER	1.215	-1.611	.099*	1.112
INCOME	-1.770	-4.049	.000***	1.517
AGE	-.043	-.179	.858	1.374
EDUCATION	.035	.089	.929	1.188
COURSE	-1.143	-1.198	.231	1.062
AUDITED	.207	.103	.918	1.034
Model fit:				
R	.386			
R^2	.149			
Adjusted R^2	.137			
Std. error	10.953			
F statistic	12.56***			

Note:
** Significant at p < 0.10*
*** Significant at p < 0.05*
**** significant at p < 0.001*

$$TCDIR_{0} = \alpha + \beta_1 TNRES_i + \beta_2 TNEMPLOY_i + \beta_3 TNDIVINT_i + \beta_4 TNPERSREL_i + \beta_5 TNCHILDREL_i + \beta_6 TNREB_i + \beta_7 TNAWARE_i + \beta_8 TNTOTAL + \beta_9 GENDER_i + \beta_{10} INCOME_i + \beta_{11} AGE_i + \beta_{12} EDUC_i + \beta_{13} COURSE_i + \beta_{14} AUDITED_i + \varepsilon_i$$

Where:

$TCDIR$	*- Tax compliance score (direct questions)*
$TCDIR_i$	*- Tax compliance score (direct questions)*
$TNRES_i$	*- Tax knowledge about responsibilities and rights*
$TNEMPLOY_i$	*- Tax knowledge about employment income*
$TNDIVINT_i$	*- Tax knowledge about dividend and interest*
$TNPERSREL_i$	*- Tax knowledge about personal relief*
$TNCHILDREL_i$	*- Tax knowledge about child relief*
$TNREB_i$	*- Tax knowledge about rebates*
$TNAWARE_i$	*- Tax knowledge about awareness of offences, penalties and fines*
$TNTOTAL_i$	*- Total tax knowledge score*
$GENDER_i$	*- Gender*
$INCOME_i$	*- Income level of the taxpayer*
AGE_i	*- Age*
$EDUC_i$	*- Education level*
$COURSE_i$	*- Experience of attending tax courses*
$AUDITED_i$	*- Experience of being audited by the tax authority*

6.7.2 Summary results for Stage 3

Therefore, Table 6.19 summarises the results of Stage 3. Discussion of these results is described in Chapter 7.

Table 6.19: Results of Stage 3 - Significant independent and control variables which affect tax compliance

Dependent variables	Significant IV without control variables (Table 6.17 and 6.18 Panel A)	Significant IV with control variables (Table 6.17 and 6.18 Panel B)	Accepted hypotheses
TCHYP	*TNRES (negative)*	*TNRES (negative)*	
	TNCHILDREL (negative)	*TNEMPLOY (positive)*	
	TNREB (negative)	*TNCHILDREL (negative)*	
	TNTOTAL (positive)	*TNREB (negative)*	
		TN AWARE (positive)	
		GENDER (positive) (CV)	H_{3A}
		INCOME (positive) (CV)	H_{3B}
		AGE (positive) (CV)	H_{3C}
TCDIR	*TNRES (positive)*	*TNRES (positive)*	
	TNCHILDREL (positive)	*TNPERSREL (positive)*	
	TNREB (positive)	*TNCHILDREL (positive)*	
	TNTOTAL (positive)	*TNREB (positive)*	
		GENDER (positive) (CV)	H_{3A}
		INCOME (negative) (CV)	H_{3B} *(partly)*

** IV – Independent variables, CV- control variables*

6.8 STAGE 4 – TAX COMPLIANCE DETERMINANTS

This stage examines determinants of tax compliance. Nine variables were tested using OLS, namely the probability of being audited, perception of government spending, perception of equity and fairness, penalties, financial constraints, changes to current government policy, roles of referent groups, roles of the tax authority and tax knowledge.

6.8.1 Correlation among variables

Tables 6.20 and 6.21 illustrate the Pearson correlation matrix for dependent and independent variables. Based on Table 6.20, all independent variables except for

EQUITY and TOTAL were significantly correlated with TCHYP ($p < 0.01$, ROLE $p < 0.05$). The highest correlation occurred between TCHYP and FINCONS ($r = -.331$) followed by GROUP, PROBAUDIT and PENALTY.

Table 6.21 provides other results of tax compliance determinants in which all independent variables except for GOVSPEND were found to be significantly correlated with TCDIR ($p < 0.01$). The coefficient of correlation between each independent variable and TCDIR was stable at between $r = - .198$ to $r = -.247$. The highest correlation occurred between TCDIR and TNTOTAL ($r = .258$) followed by EQUITY, GROUP, PROBAUDIT and FINCONS. According to univariate results in both Table 6.20 and 6.21, it was suggested that TNTOTAL, FINCONS, EQUITY, GROUP, PROBAUDIT and PENALTY were the most significant determinants.

Table 6.20: Stage 4 -Pearson correlation matrix for dependent (TCHYP) and independent variables.

		1	2	3	4	5	6	7	8	9	10
1.	$TCHYP_{40:60}$	1									
2.	*PROBAUDIT*	-.295(**)	1								
3.	*GOVSPEND*	.138(**)	-.003	1							
4.	*EQUITY*	.051	-.029	.394(**)	1						
5.	*PENALTY*	-.246(**)	.393(**)	-.030	-.010	1					
6.	*FINCONS*	-.331(**)	.214(**)	-.156(**)	.087(**)	.319(**)	1				
7.	*CHANGES*	-.197(**)	.162(**)	-.065(*)	.125(**)	.217(**)	.563(**)	1			
8.	*GROUP*	-.307(**)	.404(**)	-.040	-.048	.356(**)	.294(**)	.269(**)	1		
9.	*ROLE*	.072(*)	-.011	.411(**)	.371(**)	.037	-.133(**)	-.011	.034	1	
10.	*TNTOTAL*	-.034	.129(**)	.201(**)	.230(**)	.081(**)	.093(**)	.116(**)	.051	.185(**)	1

See Table 5.6 for variable definitions
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

Table 6.21: Stage 4 -Pearson correlation matrix for dependent (TCDIR) and independent variables.

		1	2	3	4	5	6	7	8	9	10
1.	*TCDIR*	1									
2.	*PROBAUDIT*	-.224(**)	1								
3.	*GOVSPEND*	.035	.087(**)	1							
4.	*EQUITY*	-.247(**)	.503(**)	.069(*)	1						
5.	*PENALTY*	-.198(**)	.442(**)	.080(**)	.536(**)	1					
6.	*FINCONS*	-.241(**)	.399(**)	.010	.507(**)	.466(**)	1				
7.	*CHANGES*	-.221(**)	.407(**)	.014	.527(**)	.461(**)	.636(**)	1			
8.	*GROUP*	-.234(**)	.387(**)	-.031	.522(**)	.486(**)	.598(**)	.626(**)	1		
9.	*ROLE*	-.204(**)	.338(**)	.033	.399(**)	.378(**)	.431(**)	.485(**)	.495(**)	1	
10.	*TNTOTAL*	.258(**)	-.022	-.029	-.060(*)	.012	-.042	-.034	.013	-.013	1

See Table 5.6 for variable definitions
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

6.8.2 Factors affecting tax compliance (*TCHYP* $_{40:6\ 0}$)

In this section, tax compliance determinants were calculated based on the association between each score in each factor (ie. E1, E2, E3…E8) (independent variables) and the total score of tax compliance using hypothetical questions (TCHYP) (dependent variables).

6.8.2.1 Multiple regressions and stepwise multiple regressions

Based on Table 6.22, multiple regressions and stepwise multiple regressions analysis indicates that the factors affecting tax compliance were PROBAUDIT, GOVSPEND, FINCONS and GROUP. According to stepwise multiple regression, FINCONS appears to be the main factor in determining tax compliance behaviour with Beta of -.231 followed by PROBAUDIT, GROUP and GOVSPEND with Beta coefficient of -176, -.166 and .090 respectively. The estimated correlation coefficient (R) and estimated coefficient of determination (R^2) were estimated within the range of .44 and .19 respectively.

These results evidenced that taxpayers who had crucial financial constraints, a high probability of being audited and high influence from immediate family members and friends tend to be less compliant (negative association), subsequently hypotheses H_{4E} (p*ersonal financial constraint is negatively correlated with tax compliance)* was accepted while H_{4A}, (p*robability of being audited is positively correlated with tax compliance)* and H_{4G} (*referent group is positively correlated with tax compliance)* were rejected. In contrast, positive perceptions of government spending tend to

increase compliance among taxpayers, thus hypothesis H_{4B} (*positive perception of government spending is positively correlated with tax compliance)* was accepted. This result also suggested that other variables such as perception of equity and fairness, penalties, changes to current government policy, roles of the tax authority, and tax knowledge were not significantly correlated with tax compliance.

Table 6.22: Multiple regressions and Stepwise multiple regressions – Factors affecting tax compliance – hypothetical question ($TCHYP_{40:6\ 0}$)

	Multiple regression			Stepwise multiple regression		
Variables	**Coefficient**	**t**	**VIF**	**Coefficient**	**t**	**VIF**
(Constant)	26.370	22.082***		26.611	36.693***	
PROBAUDIT	-.246	-5.036***	1.322	-.270	-5.782***	1.204
GOVSPEND	.119	2.524***	1.363	.131	3.192***	1.028
EQUITY	.026	.407	1.356			
PENALTY	-.081	-1.7088	1.327			
FINCONS	-.346	-6.341***	1.692	-.349	-7.803***	1.135
CHANGES	.026	.412	1.534			
GROUP	-.219	-4.851***	1.352	-.232	-5.318***	1.262
ROLE	.010	.181	1.340			
TNTOTAL	.001	.078	1.115			
Model fit:						
R	.442			.439		
R^2	.195			.192		
Adjusted R^2	.188			.189		
Std. error	4.19			4.19		
F statistic	62.13***			62.17***		

Notes:

Dependent variable - $TCHYP_{40:6\ 0}$
** Significant at $p < 0.10$*
*** Significant at $p < 0.05$*
**** Significant at $p < 0.01$*

$$TCHYP_{40:60\ i} = \alpha + \beta_1 PROBAUDIT_i + \beta_2 GOVSPEND_i + \beta_3 EQUITY_i + \beta_4 PENALTY_i + \beta_5 FINCONS_i + \beta_6 CHANGES_i + \beta_7 GROUP_i + \beta_8 ROLE_i + \beta_9 TNTOTAL_i + \varepsilon$$

Where:

$TCHYP_i$	*- Tax compliance score (hypothetical questions)*
$PROBAUDIT_i$	*- Probability of being audited*
$GOVSPEND_i$	*-Perception of government spending*
$EQUITY_i$	*- Perception of equity and fairness*
$PENALTY_i$	*- Penalty rates and enforcement*
$FINCONS_i$	*- Personal financial constraint*
$CHANGES_i$	*- Changes on current government policy*

$GROUP_i$	*- Referent group*
$ROLE_{i\,i}$	*- The role of the tax authority*
$TNTOTAL_i$	*- Total tax knowledge score*

6.8.3 Factors affecting tax compliance (TCDIR)

Based on stepwise multiple regressions, results in Table 6.23 indicate that tax compliance was influenced by four variables namely PROBAUDIT, GROUP, FINCONS and TNTOTAL. Stepwise multiple regression also suggests that TNTOTAL becomes the main factor with Beta coefficient of .256 followed by PROBAUDIT (β= -.136), GROUP (β= -.129) and FINCONS (β = -.100).

Conversely, multiple regression tests suggest an additional factor, namely GOVSPEND as an additional determinant. Again, TNTOTAL becomes the main factor with Beta coefficient of .254 followed by PROBAUDIT (β = -.106), GROUP (β = -.078) and FINCONS (β = -.068). These results suggest that high tax knowledge would increase tax compliance and tax knowledge also becomes the main factor in determining tax compliance, thus hypothesis H_{4J} (*tax knowledge is positively correlated with tax compliance)* is accepted. In agreement with results in Table 6.22, a high probability of being audited, crucial financial constraints and influence from family and friends would discourage tax compliance. In contrast, a positive perception of how the government spends taxpayers' money would potentially increase tax compliance.

Table 6.23.: Multiple regression and Stepwise multiple regression – Factors affecting tax compliance – direct question (*TCDIR*)

	Multiple regression			Stepwise multiple regression		
Variables	**Coefficient**	**t**	**VIF**	**Coefficient**	**t**	**VIF**
(Constant)	62.994	20.274***		63.458	21.841***	
PROBAUDIT	-1.459	-3.076***	1.475	-1.874	-4.297***	1.240
GOVSPEND	.968	2.018**	1.022			
EQUITY	-.810	-1.539	1.881			
PENALTY	-.529	-1.001	1.641			
FINCONS	-.883	-1.679*	2.020	-1.303	-2.735***	1.649
CHANGES	-.115	-.213	2.194			
GROUP	-1.071	-1.908*	2.095	-1.771	-3.565***	1.631
ROLE	-.672	-1.499	1.483			
TNTOTAL	.176	8.914***	1.011	.177	8.979***	1.004
Model fit:						
R	.403			.391		
R^2	.162			.153		
Adjusted R^2	.155			.150		
Std. error	10.81			10.84		
F statistic	22.39***			47.29***		

Notes:

Dependent variable - TCDIR
** Significant at p < 0.10*
*** Significant at p < 0.05*
**** Significant at p < 0.01*

$$TCIR_i = \alpha + \beta_1 PROBAUDIT_i + \beta_2 GOVSPEND_i + \beta_3 EQUITY_i + \beta_4 PENALTY_i + \beta_5 FINCONS_i + \beta_6 CHANGES_i + \beta_7 GROUP_i + \beta_8 ROLE_i + \beta_9 TNTOTAL_i + \varepsilon$$

Where:

$TCDIR_i$	*- Tax compliance score (direct questions)*
$PROBAUDIT_i$	*- Probability of being audited*
$GOVSPEND_{iI}$	*-Perception of government spending*
$EQUITY_i$	*- Perception of equity and fairness*
$PENALTY_i$	*- Penalty rates and enforcement*
$FINCONS_i$	*- Personal financial constraint*
$CHANGES_i$	*- Changes on current government policy*
$GROUP_i$	*- Referent group*
$ROLE_{i\,i}$	*- The role of the tax authority*
$TNTOTAL_i$	*- Total tax knowledge score*

6.8.4 Summary results of Stage 4

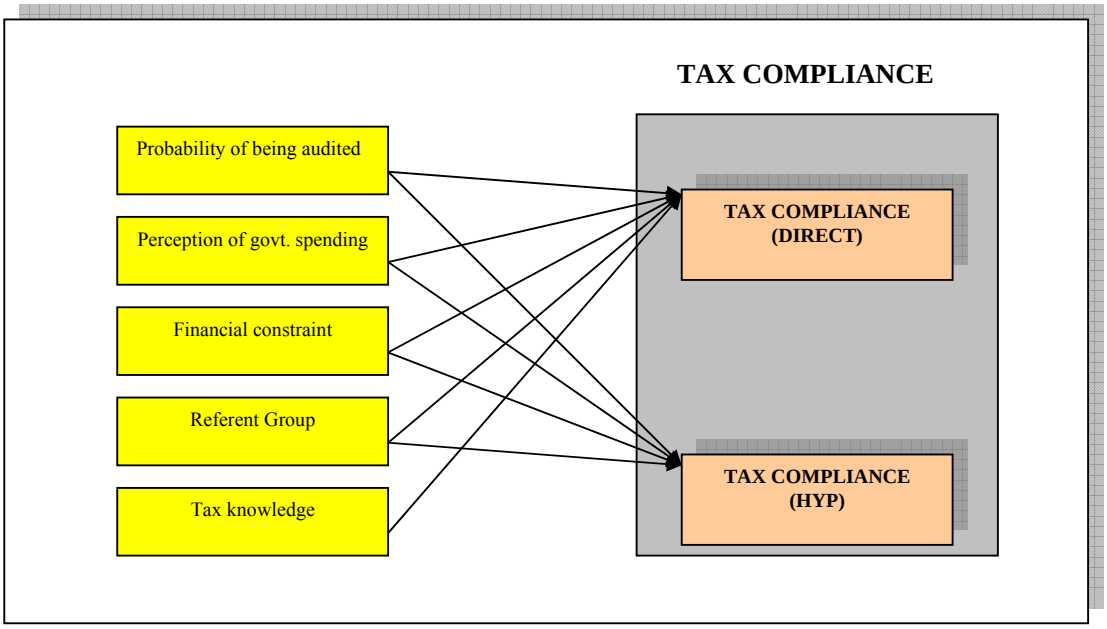
Table 6.24 and Figure 6.8 illustrate the determinants of tax compliance suggested by the analysis. Discussion of these results is described in Chapter 7.

Table 6.24: Results of Stage 4- Tax compliance determinants

Determinants	Expected signs/hypotheses	Results	
		TCHYP	TCDIR
PROBAUDIT	+ (high probability, high compliance)	-	-
GOVSPEND	+ (good perception, high compliance)	+ (H_{4B})	+(H_{4B})
FINCONS	- (crucial financial problem, low compliance)	- (H_{4E})	- (H_{4E})
GROUP	+ (high influence, high compliance)	-	-
TNTOTAL	+ (high tax knowledge, high compliance)	NS	+ (H_{4J})

* *NS – not significant*

Figure 6.8: Results of Stage 4-Tax compliance determinants



6.9 STAGE 5- TAX COMPLIANCE DETERMINANTS WITH CONTROL VARIABLES

This section investigates the effect of inserting control variables into the analysis of tax compliance behaviour.

6.9.1 Dependent variable TCHYP

This section attempts to examine whether inserting control variables in the OLS will produce a better explanatory value of tax compliance behaviour. Table 6.25 illustrates the Pearson correlation matrix for dependent, independent and control variables for Stage 5. There were a number of significant correlations between TCHYP and independent variables. All independent variables except EQUITY and TNTOTAL were significantly correlated with TCHYP at $p< 0.01$ (except ROLE, $p< 0.05$). This outcome provides preliminary results that most of the TCHYP determinants tested are associated with TCHYP. There was significant association but low correlation ($p<0.01$) between TCHYP and GENDER ($r = .095$) and TCHYP and INCOME ($r = .213$). Other significant and high correlations were also found ($p<0.05$) between TCHYP and AGE ($r = .264$).

Table 6.25: Stage 5 -Pearson correlation matrix for dependent, independent and control variables.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.	$TCHYP_{40:60}$	1															
2.	*PROBAUDIT*	-.295(**)	1														
3.	*CHANGES*	.138(**)	-.003	1													
4.	*EQUITY*	.051	-.029	.394(**)	1												
5.	*PENALTY*	-.246(**)	.393(**)	-.030	-.010	1											
6.	*FINCONS*	-.331(**)	.214(**)	-.156(**)	.087(**)	.319(**)	1										
7.	*CHANGES*	-.197(**)	.162(**)	-.065(*)	.125(**)	.217(**)	.563(**)	1									
8.	*GROUP*	-.307(**)	.404(**)	-.040	-.048	.356(**)	.294(**)	.269(**)	1								
9.	*ROLE*	.072(*)	-.011	.411(**)	.371(**)	.037	-.133(**)	-.011	.034	1							
10.	*GENDER*	.095(**)	-.037	.082(**)	.008	-.080(**)	-.068(*)	-.053	-.081(**)	.081(**)	1						
11.	*INCOME*	.213(**)	-.068(*)	-.058	-.112(**)	-.109(**)	-.141(**)	-.075(*)	-.041	-.098(**)	-.250(**)	1					
12.	*AGE*	.264(**)	-.038	.152(**)	.099(**)	-.090(**)	-.162(**)	-.066(*)	-.083(**)	.055	-.206(**)	.427(**)	1				
13.	*EDUCATION*	.048	-.029	-.067(*)	-.051	-.035	-.050	-.048	-.032	-.046	-.096(**)	.364(**)	.037	1			
14.	*COURSE*	-.040	.059	-.084(**)	-.037	.032	.099(**)	.035	-.006	-.113(**)	-.013	-.069(*)	.045	-.051	1		
15.	*AUDITED*	-.003	-.002	.005	.038	.046	-.018	-.052	-.027	-.030	.061(*)	-.054	-.098(**)	-.049	.035	1	
16.	*TNTOTAL*	-.034	.129(**)	.201(**)	.230(**)	.081(**)	.093(**)	.116(**)	.051	.185(**)	-.055	.030	.179(**)	.027	-.066(*)	-.039	1

See Table 5.5 for variable definitions
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

Table 6.26 summarises the results of the OLS regression analysis for the base OLS regression model (Panel A) and includes a number of control variables (Panel B) to consider the variables that affect tax compliance.

Table 6.26 (Panel A) describes that the base OLS regression model was significant at p <0.01 level (F statistics = 27.97), while the R and R^2 were .442 and .195 respectively. With respect to the significance of the regression coefficients for the independent variables summarised in Panel A, results show that FINCONS is the most important determinant of tax compliance behaviour. The association between TCHYP and FINCONS was negative and significant (p < 0.001). PROBAUDIT, GROUP, GOVSPEND and PENALTY represent the next most important determinants of tax compliance.

Table 6.26: OLS regressions results (dependent variable TCHYP)

	Coefficient	**t**	**Sig.**	**VIF**
Panel A:				
(Constant)	26.370	22.082	.000***	
PROBAUDIT	-.246	-5.036	.000***	1.322
GOVSPEND	.119	2.524	.012***	1.363
EQUITY	.026	.407	.684	1.356
PENALTY	-.081	-1.708	.088*	1.327
FINCONS	-.346	-6.341	.000***	1.692
CHANGES	.026	.412	.680	1.534
GROUP	-.219	-4.851	.000***	1.352
ROLE	.010	.181	.857	1.340
TNTOTAL	.001	.078	.938	1.115
Model fit:				
R	.442			
R^2	.195			
Adjusted R^2	.188			
Std. error	4.192			
F statistic	27.97***			

Panel B:

(Constant)	20.773	9.979	.000***	
PROBAUDIT	-.247	-5.131	.000***	1.346
GOVSPEND	.090	1.923	.055*	1.410
EQUITY	.049	.773	.439	1.394
PENALTY	-.042	-.897	.370	1.350
FINCONS	-.279	-5.136	.000***	1.749
CHANGES	.030	.479	.632	1.524
GROUP	-.200	-4.545	.000***	1.364
ROLE	.015	.281	.779	1.373
TNTOTAL	-.008	-.963	.336	1.155
GENDER	1.208	4.505	.000***	1.119
INCOME	.581	4.020	.000***	1.548
AGE	.446	5.319	.000***	1.405
EDUCATION	-.012	-.093	.926	1.176
COURSE	-.007	-.021	.983	1.050
AUDITED	.183	.262	.793	1.030
Model fit:				
R	.504			
R^2	.254			
Adjusted R^2	.243			
Std. error	4.05209			
F statistic	23.06***			

Note:

*** *Significant at 0.01 level*
** *Significant at 0.05 level*
* *Significant at 0.10 level*

$$TCHYP_{40:60\ i} = \alpha + \beta_1 PROBAUDIT_i + \beta_2 GOVSPEND_i + \beta_3 EQUITY_i + \beta_4 PENALTY_i + \beta_5 FINCONS_i + \beta_6 CHANGES_i + \beta_7 GROUP_i + \beta_8 ROLE_i + \beta_9 TNTOTAL_i + \beta_{10} GENDER_i + \beta_{11} INCOME_i + \beta_{12} AGE_i + \beta_{13} EDUC_i + \beta_{14} COURSE_i + \beta_{15} AUDITED_i \varepsilon_i$$

Where:

$TCHYP_i$	*- Tax compliance score (hypothetical questions)*
$PROBAUDIT_i$	*- Probability of being audited*
$GOVSPEND_i$	*-Perception of government spending*
$EQUITY_i$	*- Perception of equity and fairness*
$PENALTY_i$	*- Penalty rates and enforcement*
$FINCONS_i$	*- Personal financial constraint*
$CHANGES_i$	*- Changes on current government policy*
$GROUP_i$	*- Referent group*
$ROLE_i$	*- The role of the tax authority*
$TNTOTAL_i$	*- Total tax knowledge score*
$GENDER_i$	*- Gender*
$INCOME_i$	*- Income level of the taxpayer*
AGE_i	*- Age*
$EDUC_i$	*- Education level*
$COURSE_i$	*- Experience of attending tax courses*
$AUDITED_i$	*- Experience of being audited by the tax authority*

Table 6.26 (Panel B) summarises the results of the supplementary regression model which incorporated several control variables. Results show that the model is significant at $p < 0.01$ level (F statistic 23.06), while the R is estimated at .504. In Panel B, FINCONS, PROBAUDIT, GROUP and GOVSPEND appear to be the determinants of tax compliance incorporated with the control variables. The supplementary regression model also suggested that FINCONS remain the most important determinants of tax compliance ($r= -.279$). PROBAUDIT, GROUP, and GOVSPEND become the next most important determinants of tax compliance ($p<0.01$).

In relation to the significance of the control variables in Panel B, results show that GENDER, INCOME and AGE appear to be significantly and positively correlated with tax compliance behaviour. Specifically, the association between GENDER and TCHYP was positive and significant ($p<0.001$), consequently supporting hypothesis H_{5A} that males taxpayers are significantly more compliant. The association between INCOME and TCHYP was also positive and significant ($p<0.001$), thus supporting hypothesis H_{5B} that higher income earners are significantly more compliant. The association between AGE and TCHYP was also positive and significant ($p<0.001$), hence supporting hypothesis H_{5C} that older people are significantly more compliant. Finally, other control variables: EDUCATION, COURSE and AUDITED, had no significant association with TCHYP.

Again, consistent with results in Table 6.17, these results evidenced that control variables had a significant impact on increasing tax compliance behaviour, as well as demonstrated that the supplementary regression model remains robust.

6.9.2 Dependent variable - TCDIR

Table 6.27 illustrates the Pearson correlation matrix for dependent, independent and control variables for Stage 5. There were a number of significant correlations between TCDIR and independent variables as well as TCDIR and control variables. In line with results in Table 6.26, it appears that all independent variables except CHANGES were significantly correlated with TCHYP at $p< 0.01$. There were also significant associations ($p<0.01$) between TCDIR and INCOME ($r = -.172$) and TCDIR and EDUCATION ($r = -.087$).

Table 6.27: Stage 5 -Pearson correlation matrix for dependent, independent and control variables.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.	*TCDIR*	1	-														
2.	*PROBAUDIT*	-.224(**)	1														
3.	*CHANGES*	.035	.087(**)	1													
4.	*EQUITY*	-.247(**)	.503(**)	.069(*)	1												
5.	*PENALTY*	-.198(**)	.442(**)	.080(**)	.536(**)	1											
6.	*FINCONS*	-.241(**)	.399(**)	.010	.507(**)	.466(**)	1										
7.	*CHANGES*	-.221(**)	.407(**)	.014	.527(**)	.461(**)	.636(**)	1									
8.	*GROUP*	-.234(**)	.387(**)	-.031	.522(**)	.486(**)	.598(**)	.626(**)	1								
9.	*TNTOTAL*	-.204(**)	.338(**)	.033	.399(**)	.378(**)	.431(**)	.485(**)	.495(**)	1							
10.	*ROLE*	.258(**)	-.022	-.029	-.060(*)	.012	-.042	-.034	.013	-.013	1						
11.	*GENDER*	-.040	.083(**)	-.015	.051	.119(**)	.071(*)	.094(**)	.069(*)	.066(*)	-.055	1					
12.	*INCOME*	-.172(**)	.138(**)	-.044	.177(**)	.105(**)	.188(**)	.221(**)	.179(**)	.157(**)	.030	-.250(**)	1				
13.	*AGE*	-.041	.217(**)	.002	.194(**)	.103(**)	.242(**)	.260(**)	.183(**)	.173(**)	.179(**)	-.206(**)	.427(**)	1			
14.	*EDUCATION*	-.087(**)	.020	-.032	.033	.044	.060	.052	.017	.049	.027	-.096(**)	.364(**)	.037	1		
15.	*COURSE*	-.009	-.035	.007	-.041	-.068(*)	-.034	.007	-.024	-.037	-.066(*)	-.013	-.069(*)	.045	-.051	1	
16.	*AUDITED*	-.010	.012	-.017	-.003	.007	-.042	-.014	.017	.030	-.039	.061(*)	-.054	-.098(**)	-.049	.035	1

See Table 5.5 for variable definitions
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

Table 6.28 (Panel B) suggests that PROBAUDIT, GOVSPEND, GROUP and TNTOTAL were significantly associated with tax compliance. The supplementary regression model (Panel B) suggested that TNTOTAL remains the most important determinant of tax compliance, ($\beta = .25$) followed by PROBAUDIT and GROUP.

With respect to the significance of control variables in Panel B, results show that INCOME and EDUCATION appear to be significantly correlated with tax compliance behaviour. Specifically, the association between INCOME and TCDIR was negative and significant ($p<0.001$), consequently supporting hypothesis H_{5B} that lower income earners are significantly more compliant. It was also found that the association between EDUCATION and TCDIR was negative and significant ($p<0.001$), consequently supporting hypothesis H_{5D} that highly educated taxpayers are significantly less compliant. Finally, other control variables: GENDER, AGE, COURSE and AUDITED, had no significant association with TCDIR.

Table 6.28 - OLS regressions results (dependent variable TCDIR)

	Coefficient	t	Sig.	VIF
Panel A:				
(Constant)	62.994	20.274	.000***	
PROBAUDIT	-1.459	-3.076	.002***	1.475
GOVSPEND	.968	2.018	.044*	1.022
EQUITY	-.810	-1.539	.124	1.881
PENALTY	-.529	-1.001	.317	1.641
FINCONS	-.883	-1.679	.093*	2.020
CHANGES	-.115	-.213	.831	2.194
GROUP	-1.071	-1.908	.057*	2.095
ROLE	-.672	-1.499	.134	1.483
TNTOTAL	.176	8.914	.000***	1.011
Model fit:				
R	.403			
R^2	.162			
Adjusted R^2	.155			
Std. error	10.807			
F statistic	22.39***			
Panel B:				
(Constant)	68.411	12.697	.000***	
PROBAUDIT	-1.347	-2.789	.005***	1.508
GOVSPEND	.861	1.772	.077*	1.031
EQUITY	-.719	-1.353	.176	1.890
PENALTY	-.654	-1.211	.226	1.681
FINCONS	-.854	-1.581	.114	2.097
CHANGES	.089	.162	.872	2.262
GROUP	-1.073	-1.898	.058*	2.102
ROLE	-.539	-1.181	.238	1.518
TNTOTAL	.175	8.586	.000***	1.064
GENDER	-.611	-.853	.394	1.131
INCOME	-1.486	-3.904	.000***	1.523
AGE	.223	.993	.321	1.424
EDUCATION	-.210	-.589	.000***	1.180
COURSE	-.712	-.801	.423	1.030
AUDITED	-.016	-.009	.993	1.022
Model fit:				
R	.422			
R^2	.178			
Adjusted R^2	.166			

Std. error	10.77748
F statistic	14.68***

Notes:

*** Significant at 0.01 level
**Significant at 0.05 level
* Significant at 0.10 level

$$TCDIR_i = \alpha + \beta_1 PROBAUDIT_i + \beta_2 GOVSPEND_i + \beta_3 EQUITY_i + \beta_4 PENALTY_i + \beta_5 FINCONS_i + \beta_6 CHANGES_i + \beta_7 GROUP_i + \beta_8 ROLE_i + \beta_9 TNTOTAL_i + \beta_{10} GENDER_i + \beta_{11} INCOME_i + \beta_{12} AGE_i + \beta_{13} EDUC_i + \beta_{14} COURSE_i + \beta_{15} AUDITED_i + \varepsilon_i$$

Where:

$TCDIR_i$	*- Tax compliance score (direct questions)*
$PROBAUDIT_i$	*- Probability of being audited*
$GOVSPEND_{iI}$	*-Perception of government spending*
$EQUITY_i$	*- Perception of equity and fairness*
$PENALTY_i$	*- Penalty rates and enforcement*
$FINCONS_i$	*- Personal financial constraint*
$CHANGES_i$	*- Changes on current government policy*
$GROUP_i$	*- Referent group*
$ROLE_i$	*- The role of the tax authority*
$TNTOTAL_i$	*- Total tax knowledge score*
$GENDER_i$	*- Gender*
$INCOME_i$	*- Income level of the taxpayer*
AGE_i	*- Age*
$EDUC_i$	*- Education level*
$COURSE_i$	*- Experience of attending tax courses*
$AUDITED_i$	*- Experience of being audited by the tax authority*

6.9.3 Results summary Stage 5 – tax compliance determinant with control variables

Table 6.29 summarises the results of Stage 5. Discussions of these results is presented in Chapter 7.

Table 6.29: Results of Stage 5 - Significant independent and control variables which affect tax compliance

Dependent variables	Significant IV without control variables (Table 6.26 and 6.30 Panel A)	Significant IV with control variables (Table 6.26 and 6.30 Panel B)	Accepted hypotheses
TCHYP	*PROBAUDIT (negative)*	*PROBAUDIT (negative)*	
	GOVSPEND (positive)	*GOVSPEND (positive)*	
	PENALTY (negative)	*FINCONS (negative)*	
	FINCONS (negative)	*GROUP (negative)*	
	GROUP (negative)	*GENDER (positive) (CV)*	H_{5A}
		INCOME (positive) (CV)	H_{5B}
		AGE (positive) (CV)	H_{5C}
TCDIR	*PROBAUDIT (negative)*	*PROBAUDIT (negative)*	
	GOVSPEND (positive)	*GOVSPEND (positive)*	
	FINCONS (negative)	*TNTOTAL (positive)*	
	GROUP (negative)	*GROUP (negative)*	
		INCOME (negative) (CV)	H_{5B} *(partly)*
		EDUCATION (positive)(CV)	H_{5D}

** IV – Independent variables, CV- control variables*

6.10 NON-RESPONSE BIAS ANALYSIS

Non-response bias can usually occur in surveys and interviews and it requires careful management in order to produce valid and reliable results (Sydow, 2006 and Donzė 2002). Previous studies (see Biemer, 2001; Saris and Hagenaars, 1997) have attempted to determine if there is a difference between respondents and non-respondents and reported that people who respond to surveys many answer questions differently than those who do not. They have also found that late responders may answer differently than early responders, and that the differences may be due to the different level of interest in the

subject matter. Most researchers view non-response bias as a continuum, ranging from fast responders to slow responders (with non-responders defining the end of the continuum). There are a number of non response bias measurements such as extrapolation to estimate the magnitude of bias created by non-response, and the used of a mixed method data collection (using different methods of data collection in research such as questionnaires and phone interviews) (see Donzė 2002).

Thus, in order to validate, verify and increase the reliability and explanatory power of the results, following Donzė (2002)[122]; Li and Prabhala (2005)[123] and Sydow (2006)[124], due to limitations such as different questionnaire design and research objectives, this study measured non-response bias through two types of responses, namely 'before follow up calls'[125] and 'after follow up calls'. These responses (before and after follow up calls) were examined and analysed using ANOVA and the following hypotheses were tested:

$$H_{Null} \quad - \quad \mu_{before} = \mu_{after}$$

(There is no significant mean difference between response received from non-followed up and followed up respondents)

[122] Donzė (2002) attempted to introduce the methodology to correct non response in research on KOF ETH (Swiss Economic Institute) Zurich's survey in year 2000 by using 'weighting factors' in his logit linear regression model.
[123] Li and Prabhala (2005) reviewed econometric model of self selection in corporate finance research particularly in random sampling. Issues such as sample selection and non-response bias are the focal point of the research.
[124] Sydow (2006) extends Donzė's study by collecting the same data from the same dataset of population (KOF ETH Zurich). A mixed method approach (self administered questionnaires and phone interviews) was also employed. She exercised Chi square (χ^2) and McNemar's test and Logit models.
[125] Like Donzė (2002) and Sydow (2006), responses received without any follow up calls were categorised as 'respondent' while responses received after follow up calls made were categorised as 'non respondent'

$H_{Alternative}$ - $\mu_{before} \neq \mu_{after}$

(There is significant mean difference between response received from non-followed up and followed up respondents)

The null hypotheses will be rejected if ANOVA analysis indicates significant signs, thus non-response might occur. However, if ANOVA analysis indicates insignificant signs, thus the data is valid for further analysis because non-response bias does not occur.

Table 6.30 indicates the response received before and after follow up calls in each sample group. Tables 6.31 to Table 6.36 summarise ANOVA for tax knowledge, tax compliance direct and tax compliance hypothetical questions (all variables).

Based on the analysis, the Levene's test[126] (see Table 6.31 and 6.35) indicates that majority of the variables (except 'employment income' and 'child relief' (see Table 6.31) were insignificant which mean that the variances of the variables were constant (no significant variance different between before follow up and after follow up calls). Thus it can be said that non-response bias does not occur in this data. In addition, ANOVA analysis for all variables measured (tax knowledge, tax compliance direct and tax compliance hypothetical questions) were also insignificant (except for 'dividend and interest' in Table 6.32 and 'current policy changes' in Table 6.34). In conclusion,

[126] Levene's test is used to test the homogeneity of variance. If the result is insignificant ($p > 0,05$), it means that the hypothesis of homogeneity of variance cannot be rejected. Therefore the variances of the variables are constant. Thus the assumption of non response bias does not occur in this data (Hair *et.al.* 2006:432, 438; Hong 2005:75-76; Sekaran 2000:319)

ANOVA test results were sufficiently powerful (5 out of 7 variables or 71%) to accept the null hypothesis in which there is no significant mean difference between response received from non-followed up and followed up respondents. Thus, non-response bias does not occur in this study.

Table 6.30: Response received before and after follow up calls in each sample group.

Cluster	States	Before follow up calls	After follow up calls	Total responses
1	Selangor/Kuala Lumpur	76	44	120
2	Perlis/Kedah	64	37	101
3	Pulau Pinang/ Perak	71	44	115
4	Melaka/Negeri Sembilan	58	46	104
5	Johor	70	37	107
6	Kelantan	59	53	112
7	Terengganu	62	42	104
8	Pahang	73	46	119
9	Sabah/ Labuan	69	28	97
10	Sarawak	61	33	94

Table 6.31: Tax knowledge - Test of homogeneity of variance between 'before' and 'after' follow up calls

Variables (Tax knowledge)	Levene's test	df1	df2	Sig.
Responsibility	.018	1	1,070	.893
Employment income	3.339	1	1,066	.068*
Dividend and interest	.378	1	1,066	.539
Personal relief	.723	1	1,030	.395
Child relief	7.587	1	1,058	.006*
Rebates	.417	1	1,067	.519
Awareness of offences, penalties	.397	1	1,068	.529

** significant at $p < 0.05$*

Table 6.32: ANOVA-Non response bias analysis for tax knowledge

Variable (Tax knowledge)	Sum of Squares	df	Mean Square	F	Sig.
Responsibility	Between Groups	6.284	1	6.284	.859
	Within Groups	7825.194	1,070	7.313	
	Total	7831.478	1,071		
Employment income	Between Groups	77.945	1	77.945	2.940
	Within Groups	28258.681	1,066	26.509	
	Total	28336.625	1,067		
Dividend and interest	Between Groups	1.086	1	1.086	.035*
	Within Groups	33199.328	1,066	31.144	
	Total	33200.415	1,067		
Personal relief	Between Groups	59.333	1	59.333	1.523
	Within Groups	40120.977	1,030	38.952	
	Total	40180.310	1,031		
Child relief	Between Groups	112.749	1	112.749	3.884
	Within Groups	30710.960	1,058	29.027	
	Total	30823.708	1,059		
Rebates	Between Groups	15.981	1	15.981	1.194
	Within Groups	14278.929	1,067	13.382	
	Total	14294.909	1,068		
Awareness of offences, penalties	Between Groups	6.683	1	6.683	.651
	Within Groups	10968.323	1,068	10.270	
	Total	10975.006	1,069		

** significant at $p < 0.05$*

Table 6.33: Tax compliance direct - Test of homogeneity of variance between 'before' and 'after' follow up calls

Variables (Tax compliance Direct)	Levene's test	df1	df2	Sig.
Audited	1.572	1	1,071	.210
Govt. spending	.381	1	1,071	.537
Fairness and equity	.065	1	1,060	.798
The tax authority role	.101	1	1,067	.751
Penalty	.484	1	1,064	.487
Financial constraint	.202	1	1,065	.653
Current policy changes	1.152	1	1,067	.283
Referents group	.020	1	1,066	.886

Table 6.34: ANOVA-Non response bias analysis for tax compliance direct

Variable (tax compliance direct)	Sum of Squares	df	Mean Square	F	Sig.
Audited	Between Groups	1.631	1	1.631	.173
	Within Groups	10085.324	1,071	9.417	
	Total	10086.954	1,072		
Govt. spending	Between Groups	40.129	1	40.129	3.831
	Within Groups	11217.944	1,071	10.474	
	Total	11258.073	1,072		
Fairness and equity	Between Groups	8.868	1	8.868	1.588
	Within Groups	5918.631	1,060	5.584	
	Total	5927.499	1,061		
The tax authority role	Between Groups	1.583	1	1.583	.217
	Within Groups	7767.004	1,067	7.279	
	Total	7768.587	1,068		
Penalty	Between Groups	3.755	1	3.755	.382
	Within Groups	10470.241	1,064	9.840	
	Total	10473.996	1,065		
Financial constraint	Between Groups	1.710	1	1.710	.181
	Within Groups	10085.137	1,065	9.470	
	Total	10086.847	1,066		
Current policy changes	Between Groups	.168	1	.168	.027*
	Within Groups	6732.011	1,067	6.309	
	Total	6732.180	1,068		

***** *significant at $p < 0.05$*

Table 6.35: Tax compliance hypothetical - Test of homogeneity of variance between 'before' and 'after' follow up calls

Variables (Tax compliance hypothetical)	Levene's test	df1	df2	Sig.
Audited	.589	1	1,066	.443
Govt. spending	.485	1	1,064	.486
Fairness and equity	.026	1	1,065	.871
The tax authority role	.129	1	1,063	.719
Penalty	.000	1	1,065	.990
Financial constraint	.353	1	1,064	.552
Current policy changes	.416	1	1,067	.519
Referents group	.180	1	1,066	.672

Table 6.36: ANOVA-Non response bias analysis for tax compliance hypothetical

Variable (Tax compliance hypothetical)	Sum of Squares	df	Mean Square	F	Sig.
Audited	Between Groups	.178	1	.178	.246
	Within Groups	772.701	1066	.725	
	Total	772.879	1067		
Govt. spending	Between Groups	.135	1	.135	.274
	Within Groups	524.062	1064	.493	
	Total	524.197	1065		
Equity and fairness	Between Groups	1.564	1	1.564	2.016
	Within Groups	826.535	1065	.776	
	Total	828.099	1066		
Penalty	Between Groups	.343	1	.343	.525
	Within Groups	695.255	1065	.653	
	Total	695.598	1066		
Financial constraint	Between Groups	1.131	1	1.131	1.399
	Within Groups	860.409	1064	.809	
	Total	861.541	1065		
Changes policies	Between Groups	3.987	1	3.987	4.831
	Within Groups	880.755	1067	.825	
	Total	884.742	1068		
Referent group	Between Groups	.734	1	.734	.998
	Within Groups	783.663	1066	.735	

	Total	784.397	1067		
The tax authority role	Between Groups	1	1.900	2.315	.128
	Within Groups	1063	.820		
	Total	1064			

6.11 CONCLUSION

Based on the analysis presented in the preceding sections of this chapter, it can be concluded that in the self assessment system in Malaysia, tax knowledge has a significant impact on tax compliance and the level of tax knowledge varies among respondents. Males, Malays, residents of Eastern region, high income earners and taxpayers who have attended tax courses appear to be the most knowledgeable taxpayer groups. The results also indicate that tax compliance was influenced by probability of being audited, perception of government spending, penalties, personal financial constraints, and referent group. These results were validated through a multiple method of questionnaires (direct and hypothetical questions) and analysis (stepwise multiple regressions and multiple regressions). Moreover, in Stage 3 and Stage 5 the inclusion of control variables enhanced and help to produce even more meaningful results in terms of explaining the link between levels and nature of tax knowledge and tax compliance. Table 6.37 summarises the results of the analysis. Discussion of the results is presented in the next chapter.

Table 6.37: Results summary

	Results	Accepted hypotheses
Stage 1	Levels of knowledge (most): *Males,Malay,* *Earned monthly income ranged RM8,001 – RM10,000 (£1,232 -£1,538),* *Reside in Kelantan, had attended tax course And Older taxpayers aged more than 56 years old.*	NA
Stage 2	*Tax knowledge is positively associated with attitude towards tax compliance behaviour*	H_{S2}
Stage 3	Tax knowledge and tax compliance (control variables (CV)) – TCHYP: *TNRES (negative)* *TNEMPLOY (positive)* *TNCHILDREL (negative)* *TNREB (negative)* *TN AWARE (positive)* *GENDER (positive) (CV)* *INCOME (positive) (CV)* *AGE (positive) (CV)*	 H_{3A} H_{3B} H_{3C}
	Tax knowledge and tax compliance (control variables (CV)) – TCDIR: *TNRES (positive)* *TNPERSREL (positive)* *TNCHILDREL (positive)* *TNREB (positive)* *GENDER (positive) (CV)* *INCOME (negative) (CV)*	 H_{3A} H_{3B} *(partly)*
Stage 4	Tax compliance determinants (TCDIR): *PROBAUDIT* *GOVSPEND* *FINCONS* *GROUP* *TNTOTAL*	 H_{4B} H_{4E} H_{4J}
	Tax compliance determinants (TCHYP): *PROBAUDIT* *GOVSPEND* *FINCONS* *GROUP*	 H_{4B} H_{4E}
Stage 5	Tax compliance determinants (control variables (CV)) – TCHYP: *PROBAUDIT (negative)*	

GOVSPEND (positive)	
FINCONS (negative)	
GROUP (negative)	
GENDER (positive) (CV)	H_{5A}
INCOME (positive) (CV)	H_{5B}
AGE (positive) (CV)	H_{5C}
Tax compliance determinants (control variables (CV)) – TCDIR:	
PROBAUDIT (negative)	
GOVSPEND (positive)	
TNTOTAL (positive)	
GROUP (negative)	
INCOME (negative) (CV)	H_{5B} *(partly)*
EDUCATION (positive)(CV)	H_{5D}

CHAPTER 7

DISCUSSIONS

7.1 INTRODUCTION

This chapter discusses the results of this study in relation to prior literature. In order of presentation, this section firstly discusses the importance of tax knowledge and then moves on to the determinants of tax compliance in the self assessment system. The objectives of this study are to determine the importance of tax knowledge in the self assessment system and identify the determinants of tax compliance. The results suggested that the characteristics of knowledgeable taxpayers are males, aged more than 56 years old, Malay, earning between RM2,001 – RM4,000 and RM8,001 – RM10,000, residing in Kelantan who have attended a tax course (Stage 1). The study also found that tax knowledge is positively associated with good attitudes towards tax compliance behaviour (Stage 2). Demographic variables such as gender, income levels and age were also found to significantly affect tax compliance behaviour with regard to tax knowledge (Stage 3). The results also indicate that tax compliance was influenced by the probability of being audited, perceptions of government spending, personal financial constraints, referent

groups, gender, income, age and education levels (Stage 4 and 5). The following sections discuss the results in detail.

7.2 THE IMPORTANCE OF TAX KNOWLEDGE IN SAS

Previous studies have evidenced that tax knowledge is important in self assessment systems and the influence of knowledge on compliance behaviour has been proven in various research (Mohamad Ali *et. al.* 2007). For example, Eriksen and Fallan (1996) found that the level of education is an important factor that contributes to the understanding of taxation, especially regarding laws and regulations of taxation. This study illustrated that tax knowledge has a very close relationship with taxpayers' ability to understand the laws and regulations of taxation, and their ability to comply (see also Singh, 2003: Loo, 2006). A question that has been raised by previous researchers (for example Singh, 2003; Eriksen and Fallan, 1996; Harris, 1989) is whether enhancement in knowledge automatically increases tax compliance.

In response to claims made by those researchers (i.e Mohamad Ali *et. al.*,2007; Singh, 2003; Loo, 2006; Eriksen and Fallan, 1996; Harris, 1989), in other tax regimes, for example in Canada (refer Table 2.2), the Canada Revenue Authority (CRA) explicitly mentioned that the objectives of introducing SAS were to encourage voluntary compliance, simplify tax systems and increase taxpayers' knowledge about tax laws (CRA, 2009). From the mission stated by the CRA, it can be deduced that there must be a

reason why the CRA emphasised the 'increase of tax knowledge about tax laws' as part of their mission. According to this statement, the CRA believed that increasing voluntary compliance could be achieved by increasing awareness of tax knowledge among taxpayers in Canada and therefore support findings suggested by Eriksen and Fallan (1996); Mohamad Ali *et. al.* (2007) and Lewis (1982).

The objectives of this study with regard to tax knowledge, were to determine the level of tax knowledge of individual taxpayers in Malaysia and to identify the characteristics of most knowledgeable, average and least knowledgeable taxpayers (Section 1.4). Malaysia was chosen because a new self assessment system was introduced in 2004. Also, particular conditions in Malaysia such as the fact that is has significant cross cultural differences and is a complex multi-racial and multi-faith country enable this research to contribute new evidence to the tax compliance literature in a unique developing country (refer section 1.3). To answer those research objectives, this study hypothesised that '*Tax knowledge is positively associated with attitudes towards tax compliance behaviour'* (refer to section 5.4.2.2– H_{S2}). Results suggested that tax knowledge significantly affects tax compliance both in direct and hypothetical questions, consequently supporting H_{S2} hypothesis (refer to section 6.6.1 and 6.6.2). Filling the gap as suggested by Eriksen and Fallan (1996), this study suggested that knowledge about employment income, awareness of offences, penalties and fines, taxpayers' responsibilities and rights, child relief and rebates, appear to be significantly and positively correlated with tax compliance behaviour (Table 6.14 and 6.15).

In line with Lewis (1982), Eriksen and Fallan (1996), Loo (2006: 250) and Mohamad Ali *et. al.* (2007), this result suggests that fiscal knowledge correlates with attitudes towards taxation and therefore tax behaviour can be improved by a better understanding of tax laws. 'Tax attitudes can be improved through better tax knowledge' (Eriksen and Fallan 1986: 398) and thus this will in turn increase compliance and reduce the inclination to evade taxes. This finding consequently provides some of the answers to Eriksen and Fallan's (1996) claimed that "…*no study has been done to investigate which parts of tax knowledge have the greatest effect on attitude toward taxation."*(Eriksen and Fallan, 1996: 399).

As such, when a taxpayer has better tax knowledge, attitudes towards tax would be positive and this will in turn increase compliance and reduce the propensity to evade taxes. Thus, this study suggested that providing more tax knowledge to a larger group of society helps to prevent tax evasion in SAS. Teaching tax laws and tax knowledge as a compulsory part of secondary school education might be relevant in a self assessment system in order to increase voluntary compliance (further policy implications are discussed in Chapter 8). In contrast, poorer tax knowledge correlates with negative attitudes toward taxation, implying that a better attitude could be achieved through better tax knowledge (Lewis 1982: 59) (refer to Tables 6.14, 6.15, section 6.6.2 and Figure 6.7).

As this study suggested that tax knowledge is important in increasing voluntary compliance in SAS (refer to Table 6.14, 6.15 and section 6.6.2), various measures need to be taken to educate taxpayers (or more specifically to encourage taxpayers to be more knowledgeable) so that the level of compliance will increase and some of the objectives of SAS in Malaysia (refer to section 1.5) would be achieved. One of the ways in which this could be achieved is through a tax education programme, which is being implemented in many developed countries like the US, Canada and UK (see section 2.3.1). However, to educate all taxpayers without specific target groups is costly and time consuming. Therefore results presented in Stage 1 (refer to 5.4.1 and section 6.5) and Stage 3 (5.4.3. 6.7, Table 6.17, Table 6.18 and Table 6.19) could be useful to facilitate the tax authority in targeting which group of taxpayers is to be focused on for any one activity; for example, for tax audits and investigations and education programmes.

According to results from our Stage 1 and Stage 3 analysis (for the summary of these results, refer to section 6.5.3 and section 6.7.2), this study suggested that some notable characteristics of the most knowledgeable taxpayer group is that they are male, Malay, with a monthly income ranging from RM8,001 – RM10,000 (£1,232 - £1,538) and RM2,000 – RM4,000 (£308 - £615) (the average income in Malaysia in 2008 was RM25,784 (RM2,149 per month), 2009 (3rd quarter) was RM24,131 (RM2,011 per month), (Department of Statistics Malaysia, 2010)), reside in the north east of Peninsula of Malaysia, have attended a tax course and are aged more than 56 years old (refer to 6.5.1, 6.5.2, 6.5.3 and Figure 6.6). In addition, further analysis presented in Table 6.19

also revealed that gender, income and age appear to be significantly correlated with tax compliance behaviour, assuming that all respondents have equal levels of tax knowledge.

The result (that males are significantly more tax-knowledgeable than females at a national level) contradicts that reported in Mohamad Ali *et. al.* (2007: 10) in which their experiment on 42 respondents among postgraduate students in Malaysian universities indicated that there was no significant difference between male and female's tax knowledge. However, further analysis in this study based on each region revealed that each region has no significant tax knowledge difference between males and females (except for Kelantan region, $n = 112$, $t = 2.091$, $p < 0.05$), thus supporting the results suggested by Mohamad Ali *et. al.* (2007). Comparing this study's result and Mohamad Ali *et. al.* (2007), it indicates that larger sample (in this case 1,073 compared to 42 respondents) may provide different results. Thus, this national survey perhaps provides a more comprehensive result and understanding as well as new evidence that experimental designs and national surveys provide different perspectives.

In line with McKerchar, (2002) and Braithwaite, Reinhart and Smart, (2009), this research also demonstrates that younger taxpayers and lower income earners are shown to be less knowledgeable about tax matters. This could be explained by the fact that younger taxpayers who normally earn lower incomes are new to the tax system and they have been shown to have less well developed sense of moral obligation to pay tax (Orviska

and Hudson, 2002; Wearing and Headey, 1997). In addition, younger taxpayers may be prone to use tax agents' services in their capacity to comply with tax law, particularly in a self-assessment tax system (Braithwaite *et. al.*, 2009).

This study also suggests that there was a significant difference between the tax knowledge of taxpayers who had attended tax courses and those who had not (see section 6.5.1.2 and Table 6.4). As expected, taxpayers who have attended tax courses are more knowledgeable. Taxpayers of Malay ethnicity were also found to be significantly more knowledgeable than other ethnicities (Chinese, Indian and others). This result contrasts with a report released by the Ministry of Education of Malaysia, in which those of Chinese origin demonstrate higher academic performance than other ethnic groups in Malaysia in any levels in secondary schools and universities (Ministry of Education Malaysia, 2010).

This result also supports the results in section 6.5.2.3 and Table 6.9, which demonstrate that the level of tax knowledge is not significantly determined by the individual's general level of education. Better educated taxpayers do not necessarily have higher tax knowledge. The results in Table 6.9 also indicate that the tax knowledge score among taxpayers is not significantly different (score between 130 and 131) except for PhD holders (with an average score of 139) – who hold the highest score (this result is in line with other studies (see Loo, 2006 and Mohamad Ali, *et. al.*, 2007) which suggested that

higher levels of education cultivate greater tax knowledge. However, the score (for PhD holders) was not statistically significant (refer to Table 6.9 column B1). Therefore this study suggests that tax knowledge is not determined by levels of general education.

In relation to ethnicity and religion, in Malaysia, Malays heritage is normally associated with Muslims, Chinese heritage with Buddhism and Indian origins with Hinduism. This claim is supported by a high correlation between ethnicity and religion with $r = 0.70$, $p < 0.001$. However, in certain cases, Malays, Chinese and Indians are also associated with Christianity. Although there is a high correlation between ethnicity and religion, however, this study found that there was no significant difference between religion and tax knowledge (refer Table 6.8 and section 6.5.2.2). Since this study only attempts to make associations between religion and the levels of tax knowledge, therefore, religiosity might be a useful factor to investigate in further research, as suggested by Torgler (2007).

This study's results (see Table 6.19 and Figure 6.6) therefore provide evidence that in order to maximise the impact of a national education programme of taxpayers, the tax authority should focus more on female taxpayers, ethnic groups other than Malays (i.e. Indian and Chinese), on lower income earners, on those residing in other regions than the north east, on those who have never attended tax courses, and on younger taxpayers. By focusing on these groups, it is believed that the Inland Revenue Board (IRB) could come

up with education programmes that could be more effective and efficient at reducing tax non-compliance on a national level.

In addition to potentially helping in the selection of samples to be targeted for tax education by the IRB, results of this study could also be useful to the IRB in improving audit sampling for investigations. For example, since this study suggested that tax knowledge is positively associated with tax compliance, hence the audit samples could be selected from taxpayers who do posses lower tax knowledge as suggested by results in Table 6.12 and Figure 6.6.

Nevertheless, Malaysia has just started (in 2004) the process of exposing and educating taxpayers to the implementation of SAS (refer section 3.5). Countries such as the US, Canada, Japan, New Zealand, Australia and UK have been implementing a continuous tax education system to taxpayers and children (refer 2.4.1 for further details). Other countries like Australia (ATO, 2009) have focused on a special purpose online website, while Sweden, through the Swedish Tax Agency, has launched extensive advertising campaigns to educate people about the benefits of paying taxes (Wittberg, 2006). Furthermore, the findings of this study have prompted some tax authorities, particularly in Malaysia to educate young taxpayers, like the Australian Taxation Office, to tailor their advisory services to young taxpayers through a special purpose online site (Commissioner of Taxation, 2004).

However, having discussed the broad characteristics of knowledgeable taxpayers, we must next review the awareness and attitudes of taxpayers themselves in more detail, as the effectiveness of tax education and voluntary compliance largely depend on taxpayers' readiness, acceptance and honesty. The next section reviews the findings of this study on tax compliance determinants beyond levels of tax knowledge itself.

7.3 TAX COMPLIANCE DETERMINANTS

As mention in section 1.4, the objective of this section of the research is to examine the characteristics of compliant and non-compliant taxpayers as well as to examine factors affecting taxpayers' behaviour. Nine potential determinants of tax compliance were examined in this study, namely the probability of being audited, perceptions of government spending, perceptions of equity and fairness, penalties, financial constraints, changes to current governmental policies, the impact of referral groups, the role of the Inland Revenue Board and tax knowledge.

Using the hypothetical questions as the dependent variable, results of this study suggested that the significant factors affecting tax compliance in SAS in Malaysia at the time of this study include the probability of being audited (negative), perceptions of government spending (positive), financial constraints (negative) and the influence of referent groups (negative) (refer to Table 6.24). Financial constraints was found to be the main explanatory factor in determining tax compliance behaviour, followed by the probability

of being audited, perceptions of government spending and the influence of referent groups (refer to Table 6.22)

Using direct questions as the dependent variable, results suggested that tax compliance was still being influenced by the same variables (also in the same directions), namely the probability of being audited, the influence of referent groups, financial constraints and perceptions of government spending. Interestingly, however, in this case tax knowledge (positive association) becomes another factor that affects tax compliance behaviour in SAS in Malaysia and becomes the most significant determinant (refer Table 6.23) followed by the probability of being audited, the influence of referent groups and financial constraints, implying that high tax knowledge would increase tax compliance, thus hypothesis H_{4J} was accepted (refer to 5.4.4.2) and supports the results in Stage 2 and 3. In agreement with the results shown in Table 6.22, a high probability of being audited, crucial financial constraints and influence from family and friends would discourage tax compliance. In contrast, positive perceptions of how the government spends taxpayers' money would potentially increase tax compliance.

These results provide new evidence that taxpayers who have crucial financial constraints, a high probability of being audited and high influence from immediate family members and friends would tend to be less compliant (negative association) and subsequently hypotheses H_{4E} was accepted while H_{4A}, and H_{4G} were rejected (refer to 5.4.4.2). In

contrast, positive perceptions of government spending would tend to increase compliance among taxpayers, thus hypothesis H_{4B} was accepted.

Comparing the result between hypothetical and direct questions, although the four significant variables are the same, the order and directions were different, perhaps due to the different approach taken in these two sets of questions. For example, the hypothetical questions required the respondents to answer the probability of doing something ethical or unethical while direct questions required the respondents to answer the questions based on a Likert scale and thus reflect the scoring methods (refer Appendix 6, section 5.3.1.1 and 5.3.1.3).

This result also suggests that other variables such as perceptions of equity and fairness, penalties, changes to current government policy and the role of the tax authority were not significantly correlated with tax compliance at the time of this study.

With regards to the probability of being audited, previous studies (for example, Allingham and Sandmo (1972); Jackson and Jaouen (1989); Shanmugam (2003); Dubin (2004); Riahi-Belkaoui (2004); Richardson (2006).; Andreoni, Erard and Feinstein (1998); Bergman (1998); Verboon, and van Dijke (2007); Eisenhauer (2008)), have found that a high probability of being audited or detected would encourage taxpayers to be more compliant (positive relationship) but some other studies found contradicting results i.e. a high probability of being audited would potentially decrease compliance creating a negative association (for example Young (1994), and Slemrod *et. al.* (2001):

Braithwaite *et. al.* (2009). In addition, Slemrod *et. al.* (1998) did not clearly state the direction (either positive or negative). Therefore, since a high probability of audited could encourage tax compliance, the tax authority should increase their number of audit samples so that tax compliance would increase, the tax gap would decrease and the missions of SAS would be achieved.

With regards to perceptions of government spending, those who engage in tax evasion often justify such behavior by suggesting that the government wastes tax revenue and spends unwisely; such arguments can decrease voluntary compliance in the long run (Braithwaite *et. al.* 2009). It is expected that if the government spends taxpayers' money wisely, for example on basic facilities like education, health and safety and public transportation, it is assumed that voluntary compliance will increase. In contrast, if taxpayers perceive that the government spends too much on something else, taxpayers might feel betrayed and attempt to evade. In judging their own behaviour, people tend to believe the cause is due to external attributes. For example, "he is a tax evader because he is a bad person; I am a tax evader because the government wastes my taxes (and that's not my fault)" (McKerchar and Evans, 2009:176). Therefore, the government should spend taxpayers' money wisely so that tax compliance will increase, thus the tax collection will also increase.

With regard to financial constraints, results of this study were in line with other studies in Malaysia conducted by Mohani (2001): that taxpayers who faced personal financial problems were more prone to evading tax in comparison with those in less financial distress. This study also revealed and verified that people in financial distress would tend to prioritise their financial needs and obligations first rather than paying taxes (as deductions at source or PAYE are not compulsory in Malaysia). For example, people are likely to pay their utility bills and mortgages because failure to do so would result in immediate fines or actions by the relevant authorities (utility providers or financial institutions). On the other hand, delaying the paying of tax would not be fined immediately by the tax authority because the enforcement is quite weak in Malaysia (Shanmugam, 2003).

The propensity of taxpayers to pay their personal obligations first rather than tax liabilities is considered a 'normal' situation in Malaysia, as the penalties and fines imposed by the tax authority are not serious and the action of not paying is not considered to be an offence. This statement is supported by the conclusions of this study, which found that penalties and the role of the tax authority were not significantly correlated with tax compliance in both hypothetical and direct question measurement (refer to Table 6.22 and 6.23). These insignificant findings demonstrate that taxpayers are not taking penalties and the role of the tax authority into consideration when making a compliance decision.

In relation to this finding (financial distress), another independent variable, namely changes to current government policies, was also insignificant (see Table 5.6 for variable definition and Table 6.22 and 6.23 for the results). This variable attempts to examine whether changes to prices (for example an increase or decrease in basic needs[127]) would be associated with a tax compliance decision. In June to August 2007 when the surveys were disseminated, the government had just increased fuel prices significantly. In April 2006, fuel prices increased from RM1.60 to RM1.90 per litre (18.75%) and again in June 2008 the fuel price increased 40% to RM2.70 per litre (Bank Negara Annual Report, 2006 and 2008). The multiplying effects of these fuel price increments were tremendous and prices of goods and services went up significantly (Bank Negara Annual Report 2006). Despite this economic situation at the time, which could be considered to be more extreme than normal and perhaps more likely to produce a significant tax compliance effect, if at all, changes to current government policy were not found to be significantly correlated with tax compliance. However, these two variables (financial constraint and changes to government policies) were interrelated but not highly correlated (see Table 6.20 and 6.21).

Conversely, Vogel (1974) and Warneryd and Walerud (1982) found that people with no financial distress also exercise tax evasion and, surprisingly, the level of evasion they reported was more serious than those of people in financial distress. Vogel presumed that this situation is related to economic status rather than personal conditions. Similarly, Webley and Halstead (1986) indicated that perceptions of economic deterioration is only

[127] In Malaysia, basic needs prices (i.e. Fuels, sugar, wheat, cooking oil, rice etc.) are controlled by the government, not determined by the market.

one way that economic strain may be conceptualised. Therefore, although this study suggests that financial constraint is a significant factor affecting tax compliance behaviour, other factors i.e personal behaviour (decisions) and attitudes towards tax compliance tend to be of more influence in preference to financial constraints, as suggested by Vogel (1974) and Warneryd and Walerud (1982).

With regard to the influence of the referent group, Allingham and Sandmo (1972) found that influence from family and friends significantly affects tax compliance (although the extent of influence was not clearly stated). Spicer and Lundstedt (1976) and Clotfelter (1983) also claimed that referent groups play a significant role in evasion although it was not clearly detailed which was stronger (family members or friends). Hasseldine *et. al.*, (1994) reported that the numbers of evaders known to respondents made the largest contribution to the model of under-reporting income which means that the more respondents know evaders, the more under reporting of income may happen.

In line with Spicer and Lundstedt (1976) and Clotfelter (1983), this study also suggests that friends and family members are of significant influence to taxpayers' behaviour. The influence of referent groups tends to be important in SAS, as taxpayers are keen to refer their tax matters to their immediate family members or friends rather than tax experts, in order to minimise their compliance costs. If a taxpayer refers to a compliant taxpayer, then the tendency to commit tax evasion is lower, but if a taxpayer refers to a non-compliant taxpayer, they might become a non-compliant taxpayer as well. Therefore,

cultivating personal awareness of compliance is important so that they are less influenced by these factors i.e friends and family members' levels of compliance.

In addition to these results, two factors (namely referent groups and perceptions of government spending) are variables beyond the IRB direct control as these factors rely solely on taxpayers' decisions. Kirchler (2007: 3) classified these factors as 'social psychological perspectives' and outlined that these perspectives are difficult to deal with in order to increase tax compliance. Since negative perceptions of government spending behaviours will affect tax compliance according to these results, despite these difficulties, the Malaysian government should respond positively by wisely spending taxpayers' money and fulfilling the nation's (taxpayers') basic needs, including infrastructures, medical allocations and education in order to increase taxpayers' confidence in the government ruling party. Unnecessary expenses by the government will cultivate tax non-compliant behaviour according to the results of this study.

As such, to the IRB, low compliance rates and non-compliance had influenced the frequency of their tax audit activities and the practice of imposing penalties. However, the prior literature suggets (see Beck *et. al.* (1991) and Becker *et. al.* (1987)), that taxpayers' compliance behaviour is not solely influenced by penalties and the frequency of tax audits (although this study did not find these factors to be significant), but also by their level of tax knowledge and their attitudes towards and perceptions of the tax system, such as in relation to the fairness of the system and inadequacy of the tax authority's enforcement strategies (Kirchler, 2007; Torgler, 2007; Richardson, 2006).

In this study, other variables such as perceptions of equity and fairness, penalties, changes to current government policy and the role of the tax authority appear to be not significantly correlated with tax compliance decisions, even though previous studies in other countries found significant associations (see Harris, (1989). For example, the role of the tax authority in minimising the tax gap and increasing voluntary compliance was found to be very important as Hasseldine and Li (1999) placed the government as the main influencing factor in relation to tax evasion. The government plays a central role through designing and enforcing the tax systems, and collecting taxes (Hasseldine and Li, 1999: 93). Spicer and Becker (1980), Andreoni *et. al.* (1998) and Wenzel (2003) claimed that if a specific group perceived their tax liability was higher than other groups, then tax evasion might occur among the group members. At a social level, tax compliance with regards to fairness is viewed as a national concern. If taxpayers perceive that the tax system is unfair, tax evasion is more likely to occur (Allingham and Sandmo, 1972; Baldry, 1999b). At a general level, however, this study did not find similar results to those found in this prior work.

Further analysis at Stage 5 (refer to section 6.9) found that out of six control variables examined, only three of them were positively significant. Consistent with results in Stage 3, gender, income level and age were significantly correlated with tax compliance (refer Table 6.26). Females, higher income earners and older taxpayers were more compliant while other control variables such as education level, tax courses attended and experience of being audited by the tax authority were insignificant.

With regard to age, this result supports previous studies, for example those of Clotfelter (1983), Dubin and Wilde (1988), Loo (2006), Torgler (2007) and Beron *et. al.* (1992), which asserted that age was positively related with compliance. However, there were some studies which found a negative association, for example, those of Tittle (1980), Warneryd and Walerud (1982) and Wahlund (1982). There were also a significant number of studies that found no relationship (See Spicer and Lundstedt 1976; Spicer and Becker 1980 and Porcano, 1988; refer Table 4.6). Therefore, results of this study suggest that in the self assessment system in Malaysia, age is an important determinant of tax compliance.

With regard to income level, this study supports the findings of Torgler (2007), that lower income earners were less compliant. In contrast, two previous studies in Malaysia (before SAS was implemented) suggested that middle and high income earners in Malaysia were less compliant (Mohani, 2001) and high income earners in Malaysia were prone to evade tax (Loo, 2006), (refer to Table 4.7). Therefore, findings of this study could be interesting and important for the tax authority as in the new self assessment system, higher income earners are appear to act more responsibly and are more compliant with tax laws when compared to their behaviour under the previous official assessment system.

With regard to gender, although agreements on findings from other studies are not conclusive and a concrete solution is still being debated, this study found that female taxpayers were more compliant. Again, this study found similar results with other Malaysian studies. For example, Mohani (2001: 177) asserted that 'total income omitted

by males were eight time greater than females'. Mohamad Ali *et.al* (2007) in their experiment on postgraduate students also found similar results (refer to Table 4.8). Therefore, regardless of SAS or the official assessment system, based on the results of this study and previous research, it can be concluded that females taxpayers are more compliant in comparison with males.

7.4 CONCLUSIONS

In summary, this study found that tax knowledge is an important element in the self assessment system in Malaysia. Greater tax knowledge is believed to have a positive impact on compliance according to prior literature and this is borne out in this study of Malaysia's SAS. This chapter discussed the findings of this study with regard to the characteristics of knowledgeable and less knowledgeable taxpayers, tax knowledge areas that have a great impact on compliance, determinants of tax compliance, as well as the function of control variables that affect compliance behaviour. The findings could be an important input, particularly to the IRB (or to other developing countries' tax administrators) in general in designing their various policies in order to enhance compliance and achieve the missions of SAS.

The next chapter summarises the results, contributions, limitations of the study, elaborates further regarding the policy implications for tax authorities resulting from this research and outlines the future direction of research in order to describe what has not been fully covered in this work as presented.

CHAPTER 8

CONCLUSIONS

Self assessment systems have been widely used in many countries. According to the objectives of SAS in various countries (see section 2.1 and Table 2.2), it can be concluded that the increase of voluntary compliance, the encouragement of administrative efficiency and the improvement of fairness and equity are the key motivating factors for the introduction of SAS. However, one of the main barriers in implementing SAS is voluntary compliance, which involves many factors such as audit probability, taxpayer knowledge and attitude and the taxpayer's perceptions of fairness within the system (Kirchler *et. al.*, 2008). Findings of research had also indicated that in SAS, taxpayers tend to comply less when compared with direct assessment (Andreoni, *et. al.* 1998). Is this true in all cases? (e.g. developing and developed countries?). Why might this happen in a move to a SAS? How can this best be managed and addressed by a tax authority? If this cannot be addressed it may bring into question the value of implementing a new tax administrative system (SAS) if taxpayers become less compliant when compared to direct assessment.

To answer these issues, several questions need to be addressed such as: what are the factors that make taxpayers less compliant in tax SAS? Do the changes to the actual mechanisms themselves of filing, assessment and administration under a SAS (i.e self completed tax returns, no supporting documents needing to be submitted, no tax return assessments etc.) encourage taxpayers to be less compliant or are there other contributory factors that also influence their behaviour that users of SAS also need to consider in managing voluntary compliance in a SAS? Is a possible explanation that taxpayers are not intentionally less compliant but appear to be so because they have insufficient tax knowledge to operate correctly in the SAS environment?

Therefore, this study attempts to provide some clarifications and answers to these questions by providing further evidence to existing literature on what are the determinants of tax compliance in SAS and by directly testing whether tax knowledge significantly influences tax compliance. This was done through use of a developing country (Malaysia) as a case study. This country was a good case for study of these questions as it is a recent adopter of a SAS (2004) and so issues related to the change to a SAS are more acute still in this environment and prior pre and post change studies can also be drawn on to support the wider study undertaken in this research. Most of the prior work on tax compliance issues in SAS has been undertaken in developed countries therefore the use of a developing country in this study helps to extend knowledge of developed countries' compliance determinants into new areas where very little prior work has been undertaken.

This study seeks to contribute to the body of knowledge by providing new evidence on the importance of tax knowledge in SAS as well as identifying a series of tax compliance determinants in SAS in a developing country which is newly implementing SAS. The findings could also be useful to other countries, and particularly to Asian countries which have similar backgrounds of taxpayers, tax systems and mixes of culture.

As potential issues of tax compliance in SAS are large in number, the primary objective of this study is to explore the importance of tax knowledge and to establish its place amongst the determinants of tax compliance in SAS. Based on a national survey using over 1,073 responses, providing the largest study of the topic to tax compliance so far undertaken in Malaysia, the findings of this study also address the questions posed in the previous paragraphs and evidence that tax knowledge along with improvements in several other factors (namely increasing the probability of being audited, improving development of perceptions of government spending, addressing personal financial constraints, decreasing negative impact of referent groups, and targeting specific programmes on tax compliance based on specific profile of gender, income, age and education levels) is more likely to deliver the desired increasing voluntary compliance compared to other possible approaches. Besides these results, this study also explores the specific nature of tax knowledge in detail to illustrate how different profile of tax knowledge (e.g. the typical characteristics of knowledgeable, moderate and less knowledgeable taxpayers) are important to provide useful guidance for the tax administrator in aiding the administration of the SAS system.

Therefore, this chapter summarises the results of the study, its contributions to knowledge, how these study findings could be useful to the Malaysian, and other, tax administrators, the limitations of the study and future research directions.

8.1 SUMMARY OF THE STUDY AND THE RESULTS

Self assessment systems are believed to be better than direct assessment systems by many tax administrators (James and Alley, 2004). That is why many developed and developing countries move from direct assessments to SAS. Although there are issues pertaining to the implementation of SAS, from tax administrators' perspectives, SAS could enhance their tax collections, efficiency and the usage of human resource in assessing all tax returns. In contrast, taxpayers may perceive that the burden of tax (assessments for example) has been shifted to them and many taxpayers choose to be less complaint as a result of protesting against the new system (SAS) at the early stage of implementation or perhaps for a longer period of time (Kirchler, 2007). Since the authority to determine the tax system lies with tax administrators, taxpayers ultimately have to comply with any system that is introduced, even if they perceive that the system is unfair. However as compliance is not an absolute, levels of tax compliance will vary based on a variety of factors and the levels may change from year to year as the tax system changes. Managing the levels of compliance are therefore key challenges that the tax administrator has to resolve in SAS.

Like many countries, implementing a self assessment system has been an adventure for Malaysia's tax administrators. Most importantly, with the introduction of a self assessment system, the responsibilities for assessment shifted from the tax authority (IRB) to taxpayers and reduced the IRB's direct assessment-based administrative costs, providing the potential for a shift from administrative costs to compliance enforcement. However, these shifts will only produce a net benefit to the country if the move to self assessment produces adequate degrees of voluntary compliance by taxpayers to allow a net saving in such costs to occur without a reduction in the overall effectiveness of the tax system.

As outlined in Chapter 1, the objectives of this study are to obtain an overview of Malaysian taxpayers' knowledge and identify the factors that affected tax compliance behaviour after the introduction of SAS in 2004. The desired outcomes of a shift from the official assessment system to SAS were: to collect taxes in an efficient manner, which meant at the lowest costs (in terms of time and money); to improve compliance and to institute effective enforcement through prevailing legal procedures (IRB, 2006). In order to accomplish their mission, the three fold objectives set by the IRB were (IRB, 2006): 1) to assess and collect the correct amount of revenue as provided under the law in the most effective manner and at a minimum cost; 2) to instill public confidence in the fairness and integrity of the tax system; and 3) to encourage voluntary compliance.

Chapter 2 then discusses the nature of self assessment systems (SAS) in detail, including its objectives, principles, comparisons between other systems in operation and issues of

operation highlighted from other cases already using SAS. Issues pertaining to the implementation of a SAS in other tax regimes, for example in the US, UK, Japan and Cambodia were discussed. Chapter 3 then discusses extensively how SAS is implemented in Malaysia. A history of the Malaysian tax system and its administration, as well as problems and solutions of SAS were also discussed in this chapter.

Chapter 4 illustrates previous studies in relation to tax knowledge and tax compliance. This chapter is divided into two main sections. The first part of Chapter 4 covers the concepts and the definition of tax compliance and the second part reveals tax compliance determinants from various perspectives. The second section is divided into five main parts, starting with an economic perspective, institutional factors, social factors, individual factors and other factors which affect tax compliance including age, gender, level of income and education. Results from previous studies were also analysed, summarised and compared with the research questions in the chapter.

Chapter 5 discusses research design and methodology including the data collection methods implemented (survey procedures, sampling frame and development of the questionnaire). Details of the research framework, the development of hypotheses and data analysis techniques (t-tests, ANOVA, OLS) were also discussed in the chapter. Since this study involved many sets of analysis, in order to provide an easier understanding of the results, this study divided the data analysis process into five stages. Stage 1 examined the sample descriptive statistics in relation to tax knowledge; Stage 2 examined the relationship between tax knowledge and tax compliance behaviour; Stage 4

identified the tax compliance determinants, while some control variables were included in Stages 3 and 5 in order to investigate the effect of those control variables on the regressions model both in Stages 2 and 4.

Chapter 6 provides results and analysis of this study. The importance of tax knowledge in a self assessment system, the characteristics of tax knowledge background and the determinants of tax compliance as well as demographic factors were presented in this chapter. Results of the hypotheses testing as discussed in Chapter 5 were also presented in Chapter 6.

While Chapter 6 provides results of this study, Chapter 7 then discusses the results by explaining the rationale of the results in comparison with the research objectives and previous findings from other related research. This final chapter summarises and concludes the study by providing some suggestions, contributions and limitations of the study as well as future research directions.

This study provides further evidence that tax knowledge is important in SAS and significantly affects tax compliance (in a positive direction) meaning that in SAS in Malaysia, developing tax knowledge further would probably help to increase tax compliance. In addition further analysis presented in Table 6.17 also revealed that gender (positive association, females more compliant), income (positive association, higher income earners more compliant) and age (positive association, older taxpayers more

compliant) appear to be significantly correlated with tax compliance behaviour, assuming that all respondents have an equal level of tax knowledge. Since the levels of tax knowledge (and the characteristics of knowledgeable and less knowledgable taxpayers) among taxpayers in SAS and the relationship between tax knowledge and tax compliance has received less attention from previous researchers, this study, with a new design, approach, scoring method and time of dissemination of the questionnaires (refer to section 5.2 and 5.3) could contribute more meaningful and reliable results on these issues both in the context of Malaysia as the core case study but also of potential value to the wider study of this domain particularly among of developing countries.

Interestingly, this study also provides additional new evidence that all factors discussed in section 4.3 namely 1) economic factors (perceptions of government spending); 2) institutional factors (probability of detection); 3) social factors (referent groups); 4) individual factors (personal financial constraint) and 5) and other factors (age, income, level, gender) were significantly correlated with tax compliance. Financial constraints (refer to Table 6.22) and tax knowledge (refer to Table 6.23) appeared to be the main factors in determining tax compliance behaviour, followed by the probability of being audited, perceptions of government spending and the influence of referent groups. This study also found that other potential variables which are evidenced by other researchers in other study settings as significant factors affecting tax compliance (such as penalties, perceptions of equity and fairness, changes to government policy and the role of the tax authority) are not significantly associated with tax compliance in SAS in Malaysia.

Further analysis (refer to section 6.9) also found that demographic control variables (DCV), such as gender, income level and age (refer to 5.4.3.2) were significantly correlated with tax compliance (refer to Table 6.26). Females, higher income earners and older taxpayers were more compliant while other tax background control variables (TBCV) such as education levels, attendance at tax courses and experience of being audited by the tax authority were insignificant.

8.2 ACADEMIC CONTRIBUTIONS

This research has made a contribution to the tax compliance literature by demonstrating the importance of tax knowledge in SAS in a developing country in order to increase voluntary compliance as well as highlighting the areas of tax knowledge that help overall compliance; therefore, this study can suggest specific areas where the education of others may help to increase overall levels of voluntary compliance in SAS (as per one of objectives of IRB for introducing SAS in Malaysia in the first place and typical also of many administration who use SAS). This study also contributes to knowledge in this field by illustrating the personal characteristics that do not appear to be of significant influence to tax compliance via levels of tax knowledge.

This study further contributes by providing evidence of other key tax compliance determinants in a developing country, particularly in Asian countries that were previously under researched. These determinants, it is claimed may affect tax compliance behaviour

in other countries which have similar taxpayer backgrounds, culture, economic environments and policies. This study has provided further evidence to aid tax authorities in these countries develops their SAS plan further.

With regards to methodological contributions, firstly, this study is the national study on the general topic of tax compliance with the highest number of responses received ever in Malaysia, (evaluating direct or self assessment systems). As a result, the study provides a further interpretation and understanding of the Malaysian situation in terms of representativeness and generalisability. Secondly, unlike other studies (for example, Troutman (1993), Chan *et. al* (2000), Loo (2006) and Mohamad Ali *et. al.* (2007)), the two approaches of measuring taxpayers' compliance behaviour (hypothetical and direct questions) were believed to increase validity and generalisability of the results. It may be that this approach could be a useful one for other researchers to replicate in other tax regimes.

With regard to contributions to the body of knowledge, firstly, this study investigated the importance of tax knowledge in self assessment systems and suggested that an increase in tax knowledge in this domain could encourage improvements to taxpayers' compliance behaviour. Hence, this finding could enlighten tax administrators as to further methods necessary for designing the most appropriate and effective tax education programmes in order to increase taxpayers' knowledge. As such, this study also suggested the characteristics of knowledgeable taxpayers (i.e. male, the location where they live and

middle income earners) for tax administrators to conveniently choose target taxpayer groups to be formally or informally educated.

Secondly, this study not only tested the importance of tax knowledge in a general setting but specifically suggested which elements of tax knowledge most significantly affect tax compliance. These three prominent factors (i.e knowledge about child relief, responsibilities and rebates) may be useful to tax administrators to help focus their work particularly in audit and investigations processes. This could reduce auditing time and costs and could help tax authorities to invest more time and money in tracing and investigating taxpayers who may potentially commit tax evasion and thereby reduce the tax gap.

Thirdly, five significant factors from different perspectives (economic factors, institutional factors, social factors, individual factors and other factors) that affect tax compliance were important information to the IRB especially in the early stage of SAS. These factors were vital in helping the IRB achieve certain aims, including helping them to benchmark their short term and long term achievements, re-evaluate their auditing programmes and aiding them in human resource planning in order to achieve the SAS missions and goals. Moreover, this study also contributes and complements previous tax compliance models developed by Fischer, Wartick and Mark (1992) and Chan, Troutman and O'Bryan (2000). Both models suggested that factors such as individual, economic, social-psychological and demographic factors are likely to affect compliance decisions. The general model for tax compliance behaviour developed in this study also

incorporated additional variables including tax knowledge and other variables which have never been tested in Malaysia before (i.e. changes to current government policy and perceptions of government spending) which provide, arguably, a more diversified and comprehensive model in the understanding of tax compliance behaviour.

Hence, this research has contributed new empirical evidence on the importance of tax knowledge in SAS in a developing country, for example in Malaysia, as well as detailing factors affecting tax compliance behaviour. The findings of this research could also be used as a reference for any tax regime in order to improve the management of their tax system. The following section discusses how this study's results could possibly be useful to other tax administrators in designing and administering their tax systems.

8.3 POLICY IMPLICATIONS AND HOW THE FINDINGS ARE USEFUL TO TAX ADMINISTRATORS

The results of this study support the phenomenon of attitudes being affected by better tax knowledge and demonstrate that this holds true for other attitude dimensions. This positive relationship between tax knowledge and tax compliance could be useful as a key input for the IRB in increasing taxpayers' awareness regarding tax matters and as input into the designing of tax education programmes (especially in targeting groups of taxpayers or potential taxpayers (i.e. school children and university students)). It could also be useful for helping the IRB in designing the best mechanism of delivering the

latest information on tax regulations (i.e. advertisements in media, websites, brochures and customer services desks) and also in achieving its goals in deciding to change the collection system to a SAS. It is also important for the IRB to be kept informed of taxpayers' level of knowledge so that it can effectively and efficiently communicate (i.e. current changes in tax laws) and design tax policies (for example, the tax rates, filing requirements, penalties etc.). This study will contribute important information for this purpose given it is the most comprehensive study of its kind to date – as well as being the most recent.

Moreover, the results could also be useful to the IRB in designing their auditing and investigation processes because a good relationship between the tax authority and taxpayers is an important consideration in increasing tax compliance (Kirchler, 2007). However, the self assessment system itself does not permit the IRB to aggressively increase auditing tasks as investigations could only be performed at a reasonable rate. Although the number of audits would reflect taxpayers' compliance behaviour, audit probability would influence voluntary compliance as suggested by the result of this study.

Based on the results of this study as illustrated in Stages 1 – 3 and also the future expectations of the IRB (refer to section 3.5.3), this study could be useful to the Ministry of Education (governing all primary and secondary levels with students aged 7 to 17 years old) or the Ministry of Higher Education (governing all higher learning institutions) in Malaysia to help further the development of a suitable syllabus for school children and the students of higher learning institutions in order to educate the nations on the

importance of tax in their life. An introductory tax course should be introduced, perhaps as an elective subject at the beginning of higher learning education so that students are aware of their responsibilities as a taxpayer. This education method could be expected to help cultivate responsible taxpayers in Malaysia as the result of this research show (higher levels of tax education do produce higher levels of tax complaince in Malaysia) as currently, tax courses are only taught to accounting students at diploma and degree levels.

The results of this study also provide implications for all governments that seek to reduce the level of tax non-compliance in their society and become a benchmark or model for other similar tax regimes, and particularly for developing countries, in enhancing their tax systems. For example, in a country of similar cultures, tax laws and society (i.e. Indonesia, Vietnam and Cambodia), these findings could provide useful input for designing tax education programmes. These specific insights should allow policy makers to gain a better understanding of the key variables that are significantly associated with tax compliance and enable them to implement suitable strategies to minimise potentially damaging factors, and should also allow them to improve the governments' tax revenue collections. Further, it is recommended that this kind of survey (study) should be conducted every two years as part of official monitoring and evaluation (M & E) by the Malaysian tax auhority.

8.4 LIMITATIONS

It is acknowledged that this study has a number of limitations. First, the tax knowledge questions and the scope of questions asked in the questionnaire were only limited to Section 4 of the Income Tax Act 1967. The section only covers some levels of tax knowledge. This study unable to determine all levels of tax knowledge as stipulated in the act as it this would have been time consuming and made the questionnaire lengthy, hence low response rates would potentially occurred.

Secondly, the use of a self-report survey might be less reliable, especially when the information sought on tax is sensitive, potentially incriminating or embarrassing (Richardson, 2008). Actual behaviour of the subjects may vary from the responses given. Acknowledging this constraint, however, it is believed that this is the most suitable way to predict taxpayers' compliance behaviour, as direct questions (face to face) might lead respondents to answer the questions dishonestly and could be potentially embarrassing for respondents.

Thirdly, using telephone directories potentially limits response through only getting the head of households; also, replies from landline telephone owners tend to include only the richer group of the society. However, this issue has been balanced by a high number of usable responses (1,073) which is relatively high compared to other similar tax studies (refer to Table 5.3).

Fourthly, improved survey measures of tax compliance and various potential tax compliance determinants such as occupational status, religiosity, marginal tax rates and culture could improve the reliability of the empirical results and further reduce the risk of measurement error. This study was unable to include those variables at the same time. Therefore, to balance this issue, two approaches (direct and hypothetical questions) were used and were considered sufficient to validate the results.

Fifthly, the types of approache used in measuring tax knowledge and tax compliance (i.e. by using a survey instrument) might provide limited results, and different research designs (such as interviews or an experiment) could produce different results. However, regardless of these limitations and weaknesses, the findings of this study could provide a model and become a benchmark to other developing countries for aiding their successful implementation of SAS for individuals.

8.5 FUTURE RESEARCH DIRECTIONS

The area of tax education related to tax knowledge and levels of compliance, particularly in a self assessment system, offers opportunities for additional research. Instead of using a survey, other methods of data collection (for example, interviews or experiments) may provide different results. It is expected that two-way communication via an interview could produce other meaningful results; however, non-anonymous methods such as interviews can be problematic in revealing the truth, especially when questioning

respondents regarding tax compliance matters, as failure to appropriately address the questions would harm or embarrass respondents.

Future research could be conducted via a longitudinal study in which a comparison of more years and might provide different results from this 'point in time' study. For example a study into how changes in levels of tax knowledge, taxpayers' financial situations and changes to tax laws and regulations potentially affect compliance decisions could be beneficial. Using data from the tax administration and comparing this with data from questionnaires could also be beneficial as a further data source for a compliance study of this kind, although the chances of accessing data from the tax authority are very slim.

Finally, other determinants which were not tested in this study such as political affiliation (Kim, 2008), cultural influence (Richardson, 2008) and religiosity (Torgler, 2007) could also be explored in the future. This study was unable to include these variables because these variables require a series of questions in order to be accurately measured (i.e the level of religiosity), hence these factors were excluded from this questionnaire but could be included in future studies to examine their impact on the explanatory power of the models used.

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APPENDIX 1

Section 13. General provisions as to employment income.

(1) Gross income of an employee in respect of gains or profits from an employment includes:

(a) any wages, salary, remuneration, leave pay, fee, commission, bonus, gratuity, perquisite or allowance (whether in money or otherwise) in respect of having or exercising the employment;

(b) an amount equal to the value of the use or enjoyment by the employee of any benefit or amenity (not being a benefit or amenity convertible into money) provided for the employee by or on behalf of his employer, excluding-

(i) a benefit or amenity consisting of medical or dental treatment or a benefit for child care;

(ii) a benefit or amenity consisting of-

(A) leave passages for travel within Malaysia not exceeding three times in any calendar year; or

(B) one leave passage for travel between Malaysia and any place outside Malaysia in any calendar year, limited to a maximum of three thousand ringgit:

Provided that the benefit or amenity enjoyed under this subparagraph is confined only to the employee and members of his immediate family;

(iii) a benefit or amenity used by the employee solely in connection with the performance of his duties; and

(iv) a benefit or amenity falling under paragraph *(c)*;

(c) an amount in respect of the use or enjoyment by the employee of living accommodation in Malaysia (including living accommodation in premises occupied by his employer) provided for the employee by or on behalf of the employer rent free otherwise;

(d) so much of any amount (other than a pension, annuity or periodical payment falling under paragraph 4*(e)*) received by the employee, whether before or after his employment ceases, from a pension or provident fund, scheme or society not approved for the purpose of this Act as would not have been so received if his employer had not made contributions in respect of the employee to the fund, scheme or society or its trustees; and

(e) any amount received by the employee, whether before or after his employment ceases, by way of compensation for loss of the employment, including any amount in respect of-

(i) a covenant entered into by the employee restricting his right after leaving the employment to engage in employment of a similar kind; or

(ii) any agreement or arrangement having the like effect.

(2) Gross income in respect of gains or profits from an employment-

(a) for any period during which the employment is exercised in Malaysia;

(b) for any period of leave attributable to the exercise of the employment in Malaysia;

(c) for any period during which the employee performs outside Malaysia duties incidental to the exercise of the employment in Malaysia;

(d) for any period during which a person is a director of a company and that company is resident in Malaysia for the basis year for a year of assessment and within that basis year that period or part of that period falls; or

(e) for any period during which the employment is exercised aboard a ship or aircraft used in a business operated by a person who is resident in Malaysia for the basis year for a year of assessment and within that basis year that period or part of that period falls,

shall be deemed to be derived from Malaysia.

(3) Gross income in respect of gains or profits from an employment in the public services or the service of a statutory authority-

(a) for any period during which the employment is exercised outside Malaysia; or

(b) for any period of leave attributable to the exercise of the employment outside Malaysia,

shall be deemed to be derived from Malaysia if the employee is a citizen.

(4) For the purposes of subsection (1) a benefit, amenity or living accommodation provided for an employee as therein mentioned shall be deemed to be used or enjoyed by the employee if it is used or enjoyed by his spouse, family, servants, dependants or guests.

(5) Any question whether any gross income is gross income for a period mentioned in subsection (2) shall be decided by applying the appropriate provisions of Chapter 3 of Part III as if that period were the basis period for a year of assessment.

APPENDIX 2

Section 14. General provisions as to dividend income.

(1) Subject to this section, where a company resident for the basis year for a year of assessment pays, credits or distributes a dividend in the basis period for that year of assessment, the dividend shall be deemed to be derived from Malaysia.

(2) Where a company resident for the basis year for a year of assessment was not resident for the basis year for the year of assessment immediately preceding that year of assessment, only dividends paid, credited, or distributed by the company on or after the day on which the management and control of any business of the company (or, in the case of a company which does not carry on a business, the management and control of its affairs by its directors or other controlling authority) were first exercised in Malaysia in that first-mentioned basis year shall be deemed to be derived from Malaysia.

(3) Where-

> *(a)* the management and control of the business of a company (or, if it has more than one business, of all its businesses); or
>
> *(b)* in the case of a company which does not carry on a business, the management and control of its affairs by its directors or other controlling authority,

cease to be exercised in Malaysia in the basis year for a year of assessment and the company is not resident for the basis year for the year of assessment following that first-mentioned year of assessment, dividends paid, credited or distributed in that first-mentioned basis year after the cessation shall not be deemed to be derived from Malaysia.

(4) Where a dividend consists of property other than money, that dividend shall be taken to consist of an amount equal to the market value of the property at the time of the distribution of the dividend.

Section 15. Derivation of interest and royalty income in certain cases.

Gross income in respect of interest or royalty shall be deemed to be derived from Malaysia-

(a) if responsibility for payment of the interest or royalty lies with the Government or a State Government; or

(b) (i) if responsibility for payment of the interest or royalty in the basis year for a

year of assessment (the responsibility of any guarantor being disregarded in the case of interest) lies with a person who is resident for that basis year; and

(ii) in the case of interest it is payable in respect of money borrowed by that person and employed in or laid out on assets used in or held for the production of any gross income of that person derived from Malaysia or the debt in respect of which the interest is paid is secured by any property or asset situated in Malaysia; or

if the interest or royalty is charged as an outgoing or expense against any income accruing in or derived from Malaysia.

Section 15A. Derivation of special classes of income in certain cases.

Gross income in respect of-

(a) amounts paid in consideration of services rendered by a person or his employee in connection with the use of property or rights belonging to, or the installation or operation of any plant, machinery or other apparatus purchased from, such person;

(b) amounts paid in consideration of technical advice, assistance or services rendered in connection with technical management or administration of any scientific, industrial or commercial undertaking, venture, project or scheme;

(c) rent or other payments made under any agreement or arrangement for the use of any moveable property-

shall be deemed to be derived from Malaysia-

(i) if responsibility for payment of the above or other payments lies with the Government or a State Government;

(ii) if responsibility for the payment of the above or other payments lies with a person who is a resident for that basis year; or

(iii) if the payment of the above or other payments is charged as an outgoing or expense in the accounts of a business carried on in Malaysia.

APPENDIX 3

Section 16. Voluntary pensions, etc.

Where any pension or other periodical payment is paid voluntarily to any person who has permanently ceased to exercise an employment (or to his widow, child, relative or dependant) by his former employer or the successor of his former employer, there shall be deemed to be a source of that person or of his widow, child, relative or dependant, as the case may be, in respect of that pension or payment and that pension or payment shall be deemed to be gross income from that source chargeable to tax.

Section 17. Derivation of pensions, etc.

(1) Gross income in respect of a pension from the Government or a State Government shall be deemed to be derived from Malaysia.

(2) Where-

(a) a person has a right to a pension or other like payment-

(i) from a pension fund or a fund of a similar kind; or

(ii) under a pension scheme or a scheme of a similar kind; or

(iii) by virtue of his membership of a pension society or a society of a similar kind; and

(b) the forum of the administration of the fund, scheme or society is in Malaysia at any time in the basis year for a year of assessment,

the gross income for the basis period for that year of assessment in respect of the pension or other like payment shall be deemed to be derived from Malaysia.

(3) The gross income for the basis period for a year of assessment from any source of the kind mentioned in section 16 or in respect of a pension or other periodical payment to which prargraph 4*(e)* applies shall be deemed to be derived from Malaysia if the person paying that income was resident for the basis year for that year of assessment:

Provided that this subsection shall not apply to a pension or other payment to which subsection (1) or (2) applies.

APPENDIX 4

FORM BE 2007 FOR INDIVIDUAL

CP 4B - Pin. 2007

Form **BE**

LEMBAGA HASIL DALAM NEGERI MALAYSIA

RETURN FORM OF AN INDIVIDUAL (RESIDENT WHO DOES NOT CARRY ON BUSINESS) UNDER SECTION 77 OF THE INCOME TAX ACT 1967

This form is prescribed under section 152 of the Income Tax Act 1967

YEAR OF ASSESSMENT **2007**

1 Name *(as per identity card/passport)*

2 Tax Reference No. ▲ *Enter SG or OG*

3 New Identity Card No.

4 Old Identity Card No.

5 Police No.

6 Army No.

7 Passport No.

PART A: PARTICULARS OF INDIVIDUAL

A1 Citizen — *Use Country Code (Enter 'MY' if Malaysian Citizen)*

A2 Sex — *1 = Male 2 = Female*

A3 Status as at 31-12-2007 — *1 = Single 2 = Married 3 = Divorcee / Widow / Widower 4 = Deceased*

A4 Date of Marriage/ Divorce/Demise — Day Month Year

A5 Type of Assessment — *1 = Joint in the name of husband 2 = Joint in the name of wife 3 = Separate 4 = Single; Spouse without source of income/ with tax exempt income*

A6 Compliance with Public Rulings — *1 = Yes 2 = No*

A7 Correspondence Address

Postcode

Town

State

A8 Telephone No. -

A9 Employer's No. E

A10 e-mail

A11 Name of Bank

A12 Bank Account No.

PART B: PARTICULARS OF HUSBAND / WIFE

B1 Name of Husband/Wife *(as per identity card/passport)*

B2 Tax Reference No. ▲ *Enter SG or OG*

B3 New Identity Card No.

B4 Old Identity Card No.

B5 Police No.

B6 Army No.

B7 Passport No.

FOR OFFICE USE

Date received (1) | Date received (2) | Date received (3)

Name _____ Tax Reference No. [ ]

PART C : STATUTORY INCOME AND TOTAL INCOME

C1	Employment	C1	
C2	Dividends	C2	
C3	Interest and discounts	C3	
C4	Rents, royalties and premiums	C4	
C5	Pensions, annuities and other periodical payments	C5	
C6	Other gains or profits	C6	
C7	**AGGREGATE INCOME (C1 to C6)**	C7	
	LESS : Donations and Gifts		
C8	Gift of money to the Government, State Government, local authorities or approved institutions and organisations	C8	
C9	Gift of artefacts, manuscripts or paintings to the Government/ State Government	C9	
C10	Gift of money for the provision of library facilities or to libraries	C10	
C11	Gift of money or contribution in kind for the provision of facilities in public places for the benefit of disabled persons	C11	
C12	Gift of money or medical equipment to any healthcare facility approved by the Ministry of Health	C12	
C13	Gift of paintings to the National Art Gallery or any state art gallery	C13	
C14	Gift of money or contribution in kind for any approved sports activity *(C14 + C15 restricted to 7% of amount in C7)*	C14	
C15	Gift of money or contribution in kind for any project of national interest approved by the Minister of Finance *(C14 + C15 restricted to 7% of amount in C7)*	C15	
C16	**TOTAL INCOME (SELF) [C7 - (C8 to C15)]** *(Enter "0" if value is negative)*	C16	
C17	**TOTAL INCOME TRANSFERRED FROM HUSBAND / WIFE * FOR JOINT ASSESSMENT**	C17	
	* Type of income transferred from Husband / Wife [ ] *1 = With business income* *2 = Without business income*		
C18	**AGGREGATE OF TOTAL INCOME (C16 + C17)**	C18	

PART D: DEDUCTIONS

D1	Individual and dependent relatives		8000
D2	Medical expenses for own parents certified by medical practitioner	***RESTRICTED TO 5,000***	
D3	Basic supporting equipment for disabled self, spouse, child or parent	***RESTRICTED TO 5,000***	
D4	Disabled individual	***6,000***	
D5	Education fees (self) for acquiring law, accounting, Islamic financing, technical, vocational, industrial, scientific or technological skills or qualifications	***RESTRICTED TO 5,000***	
D6	Medical expenses on serious diseases for self, spouse or child	***RESTRICTED TO 5,000***	
D7	Complete medical examination for self, spouse or child (restricted to 500)		
D8	Purchase of books/magazines/journals/similar publications (except newspapers and banned reading materials) for self, spouse or child	***RESTRICTED TO 1,000***	
D8A	Purchase of personal computer for individual (deduction allowed once in every 3 years)	***RESTRICTED TO 3,000***	
D8B	Net deposit in Skim Simpanan Pendidikan Nasional (total deposit in 2007 minus total withdrawal in 2007)	***RESTRICTED TO 3,000***	

Name _____ Tax Reference No. [ ]

D9	Husband/Wife/Payment of alimony to former wife	***RESTRICTED TO 3,000***	
D10	Disabled husband/wife	***3,500***	
D11	Child :		

		Eligible Rate ***100%***		Eligible Rate ***50%***		
		No.		No.		
D11a	Child - Under the age of 18 years	[ ]	***x 1,000 =*** [ ]	[ ]	***x 500 =*** [ ]	[ ]
D11b	Child - 18 years & above and studying	[ ]	***x 1,000 =*** [ ]	[ ]	***x 500 =*** [ ]	
		[ ]	***x 4,000 =*** [ ]	[ ]	***x 2,000 =*** [ ]	[ ]
D11c	Child - Disabled child	[ ]	***x 5,000 =*** [ ]	[ ]	***x 2,500 =*** [ ]	
		[ ]	***x 9,000 =*** [ ]	[ ]	***x 4,500 =*** [ ]	[ ]

D12	Life insurance and provident fund	***RESTRICTED TO 6,000***	
D13	Education and medical insurance	***RESTRICTED TO 3,000***	
D14	**Total relief (D1 to D13)**	D14	

PART E: TAX PAYABLE

E1	CHARGEABLE INCOME **[(C16 - D14) or (C18 - D14)]** *(Enter "0" if value is negative)*		
E2	**INCOME TAX COMPUTATION (Refer to the tax rate schedule provided)**		
E2a	Tax on the first		
E2b	Tax on the balance	At Rate (%) [ ]	
E3	TOTAL INCOME TAX (E2a + E2b)	E3	

LESS : Tax Rebates

E4	Tax rebate for individual (if E1 does not exceed RM35,000)	**350** [ ]	E6	Zakat or fitrah	
E5	Tax rebate for husband/wife (if E1 does not exceed RM35,000 and D9 is claimed)	**350** [ ]	E7	Fees/Levy paid by a holder of an Employment Pass, Visit Pass (Temporary Employment) or Work Pass	

E8	**Total rebate (E4 to E7)** *(Restricted to amount E3)*	E8	
E9	TOTAL TAX CHARGED (E3 - E8)	E9	

LESS :

E10	Section 110 tax deduction (dividends)	E10	
E11	Section 110 tax deduction (others)	E11	
E12	Section 132 tax relief	E12	
E13	Section 133 tax relief	E13	
E14	TAX PAYABLE [E9 - (E10 + E11 + E12 + E13)]	E14	
E15	**OR** : TAX REPAYABLE [(E10 + E11 + E12 + E13) - E9]	E15	

Name _____ Tax Reference No. [ ]

PART F: STATUS OF TAX FOR YEAR OF ASSESSMENT 2007

F1	Tax payable (from E14)	F1	
	LESS :		
F2	Instalments/Schedular Tax Deductions Paid for 2007 Income - SELF and HUSBAND / WIFE if joint assessment	F2	
F3	Balance of tax payable (F1 - F2)	F3	
F4	**OR :** Tax paid in excess (F2 - F1)	F4	

PART G: INCOME OF PRECEDING YEARS NOT DECLARED

	Type of Income	Year for which paid	Gross Amount	Provident and Pension Fund Contribution
G1				
G2				
G3				
G4				
G5				

PART H: PARTICULARS OF EXECUTOR OF THE DECEASED PERSON'S ESTATE

H1	Executor's Name			
H2	New Identity Card No.		H3	Old Identity Card No.
H4	Police No.		H5	Army No.
H6	No. Pasport			

DECLARATION

I [ ]

Identity Card No. / Passport No. / Police No. / Army No. * [ ]

** Delete whichever is not relevant*

hereby declare that the information regarding the income and claim for deductions and reliefs given by me in this return form and in any document attached is true, correct and complete.

[ ] 1 = This return form is made on my own behalf
2 = This return form is made on behalf of the above

Date: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Day Month Year

Signature

PARTICULARS OF TAX AGENT WHO COMPLETES THIS RETURN FORM

a	Name of Firm			
b	Telephone No.		c	Tax Agent's Approval No./ Audit Licence No.

Date: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Day Month Year

Signature

Please read the following reminder before signing this return form

REMINDER

Please ensure that this return form is completed and in order. Carefully check all information given before submitting it to Lembaga Hasil Dalam Negeri Malaysia.

Check to ensure that the following have been done (Tick " _/ " in the relevant box)

- ☐ Tax computation has been done on the appropriate working sheets (according to the Form BE Explanatory Notes and Guidebook) and the amounts accurately transferred to this return form.
- ☐ All working sheets, records and documents are properly kept for reference by LHDNM.
- ☐ All information have been clearly filled in the spaces provided.
- ☐ Name and tax reference number are clearly indicated on every page of this return form and relevant working sheets.
- ☐ If there is any balance of tax payable, payment must be made according to the following:-
  - Payment can be made as follows:
    (a) Bank - Counters of **CIMB Bank Berhad (CIMB)** and **Public Bank Berhad (PBB)** by using the bank payment slip.
    - **CIMB** and **PBB** internet banking.

    (b) LHDNM - e-Payment at LHDNM website.
    - Payment counters of LHDNM or by mail:
      Cheques, money orders and bank drafts must be crossed and made payable to the **Director General of Inland Revenue**. Use the Remittance Slip (CP501) when making payment.

	Postal Address	Payment Counter
PENINSULAR MALAYSIA	Lembaga Hasil Dalam Negeri Malaysia	
SABAH & FT LABUAN	Lembaga Hasil Dalam Negeri Malaysia	
SARAWAK	Lembaga Hasil Dalam Negeri Malaysia	

  - Write down the **name**, **address, telephone number, tax reference number, year of assessment** and **payment code** on the reverse side of the financial instrument.
  - **Payment by CASH / CHEQUE / MONEY ORDER / POSTAL ORDER must be separately remitted to LHDNM at the above address.**

Website: http://www.hasil.org.my

REMITTANCE SLIP CP501 [Pin. 1/2007]

To: **DIRECTOR GENERAL OF INLAND REVENUE**

Enclosed herewith is the cheque/money order/postal order/bank draft for payment of income tax.

TAX REFERENCE NO.	PAYMENT CODE	INSTALMENT NO.	YEAR OF ASSESSMENT
			2007

Amount of Payment RM , , , .

Name and Postal Address

Identity Card No	
Cheque No. and Others	
Name of Bank	
Telephone No.	

Date : .....

MALAYSIAN INCOME TAX
Remittance Slip

1. Payment can be made as follows:

   1.1 Bank - Counters of **CIMB Bank Berhad (BCB)** and **Public Bank Berhad (PBB)** by using the bank payment slip.
   - **CIMB** and **PBB** internet banking.

   1.2 LHDNM - e-Payment at LHDNM website.
   - Payment counters of LHDNM or by mail:
   Cheques, money orders and bank drafts must be crossed and made payable to the **Director General of Inland Revenue**. Use the Remittance Slip when making payment.

	Postal Address	Payment Counter
PENINSULAR MALAYSIA	Lembaga Hasil Dalam Negeri Malaysia	
SABAH & FT LABUAN	Lembaga Hasil Dalam Negeri Malaysia	
SARAWAK	Lembaga Hasil Dalam Negeri Malaysia	

2. Write down the **name**, **address**, **telephone number**, **tax reference number**, **year of assessment** and **payment code** on the reverse side of the financial instrument.
3. Check the receipts/bank payment slips before leaving the payment counter.

APPENDIX 5

UNIVERSITY OF BIRMINGHAM

Birmingham Business School, [redacted]

Tel: [redacted]

15 June 2007

TAXATION SURVEY

Dear valued respondent,

Congratulations for being chosen as part of our national taxation study. You have been chosen at random from the local telephone directory as one of a large number of respondents to this country wide study of the new tax system.

The purpose of this survey is to find out more about how the new self assessment system is working – what you think of it and how it compares to the old system. We want to see how well you understand the operation of the new system. You should choose the answer you think is correct according to your understanding of the current tax rules. There is no need to look up answers to make sure they are correct – we want to know what you know - it is not a test.

Your participation is, of course, voluntary and you do not have to answer all the questions asked if you do not want to but it would be greatly appreciated if you could answer all questions honestly and answer as many as you can so that our research is as complete as possible. Your response will be treated confidentially at all times so you can be entirely open in your responses.

Completing the survey should not take more than **20 minutes at most**. The instructions are included in each part of the survey. You can answer either in English (Set A) or in Malay (Set B) – the questions are the same for each set.

Enclosed is a reply paid envelope for you to return the completed survey. If you could return the completed survey as soon as possible, and by **7 July 2007 at the latest** we would be grateful.

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact us. This project has been approved by the Review Board at The University of Birmingham, UK.

Thank you for your corporation.

Yours sincerely,

MOHD RIZAL PALIL ([redacted])
ANDREW LYMER ([redacted])

Researchers

In collaboration with and sponsored by:

UNIVERSITI KEBANGSAAN MALAYSIA

The University of Nottingham

TRI

University of Nottingham Tax Research Institute

APPENDIX 6

GENERAL INSTRUCTION.

This survey is divided into four parts. Please answer all questions.

SECTION A (TAX COMPLIANCE –HYPOTHETICAL QUESTIONS)

In this section, you are given various situations in which related with decision making. For each situation, please answer honestly.

PART A 1 -PROBABILITY OF BEING AUDITED

In the past five years, Miss Carol has declared her income accurately based on her actual income. However, because she has not been audited by the Inland Revenue Board (IRB) for the past five years, in year assessment 2006, she underreported part of her casual income and over claimed child relief in her tax return. By doing she saved RM1,000 in total tax payable.

If you were in the same situation as Miss Carol:

i) Would the probability of being audited affect your decision to underreport and over claim child relief?

YES _____ NO _____

ii) What is the probability of underreport and over claim child relief in year assessment 2006?

Very low probability 1 2 3 4 5 Very high probability

PART A 2 -PERCEPTION ON GOVERNMENT SPENDING

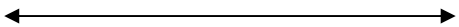
Mr. Sam is a bank manager and until now has always been an honest taxpayer. He pays a significant amount of tax every year. Recently, he noticed that the government spends a lot on developing quarters and offices for high level government servants, have bought a new private aircraft for the Prime Minister and have increased the allowance for the members of Parliament. Meanwhile, the government is proposing to impose minimum service charges for hospital treatment and an increase in school fees.

If you were in the same situation as Mr. Sam:

i) Would your perception on government spending will urge you to become dishonest taxpayer?

YES _____ NO _____

ii) What is the probability of maintaining your honesty?



Very low probability 1 2 3 4 5 Very high probability

PART A 3 - PERCEPTION ON EQUITY AND FAIRNESS

Mrs. Maria is a school teacher and has been paying tax for more than ten years. Her work colleague, Miss Lynn, teaches in the morning, but has been operating a baby care centre at home without a valid licence for almost five years and has never paid taxes on this income because the IRB never realised the existence of the centre. From Mrs. Maria observation, Miss Lynn is a wealth-off person due to the extra non-taxable income from the centre. Mrs. Maria is considering under-declaring her income this year because of this situation.

If you were in the same situation as Mrs. Maria:

ii) Would your perception of equity and fairness affect your decision to under report your income?

YES _____ NO _____

ii) What is the probability you would under report your income?

Very low probability 1 2 3 4 5 Very high probability

PART A 4 - PENALTY

Mr. Mike is a sales executive who receives basic salary and commissions on top of his sales performance. The commissions are paid in cash and do not appear on the payslips. He never declares his commission income in his tax return every year. His commission was RM5,000 in 2005. In the year assessment 2005 the IRB investigated him and penalised him 10% (RM500) on that under reported commission.

If you were in the same situation as Mr. Mike:

i) Would the penalty last year will affect your decision to under report the commission next year?

YES _____ NO _____

ii) What is the probability of under reporting commissions?

Very low probability 1 2 3 4 5 Very high probability

PART A 5 - FINANCIAL CONSTRAINT

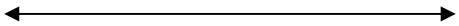
Miss Lydia has a very good income and lives in a high-class condominium in city centre. Recently, the company where she works is in trouble and cut off 10% salary. This makes Miss Lydia's financial position significantly affected. In the past five years, she easily paid between RM10,000 to RM15,000 of income tax yearly. However in year assessment 2006, due to money constraint, she had completed the tax return inaccurately by under reporting her income and over claiming child deduction so that she came up with RM5,000 of income tax liability. By doing this she can compensate the salary reduction that she suffered for the whole year by tax reduction.

If you were in the same situation as Miss Lydia:

i) Would the financial position will affect your decision to deliberately completed tax return inaccurately?

YES _____ NO _____

ii) What is the probability of completing tax return inaccurately?



Very low probability 1 2 3 4 5 Very high probability

PART A 6 - CHANGES ON CURRENT GOVERNMENT POLICIES

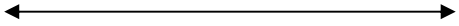
Mr. Danny is usually a good taxpayer. He never usually cheats in completing his tax return and pays his tax on time. In the past two years, the fuel prices, electricity and water rates, toll charges and council taxes have increased. Fortunately income tax rates have remained the same. Due to these increases, Mr. Danny is considering 'altering' his tax return in year assessment 2006 so that the 'tax saving' that he would makes could cover the price increase.

If you were in the same situation as Mr Danny:

i) Would the price increases affect your decision to 'alter' the tax return?

YES _____ NO _____

ii) What is the probability of 'altering' the tax return?



Very low probability 1 2 3 4 5 Very high probability

PART A 7 - REFERRAL GROUP (FRIENDS, RELATIVE ETC.)

Miss Lowe has many friends. Many of her decisions are influenced by her friends and relatives. In the year assessment 2006, her taxable income was RM35,800 which exceeded the RM35,000 tax brackets and thus the tax payable was RM2,500. If her taxable income does not exceeds RM35,000, she could gets a RM350 tax rebate and therefore has to pay RM2,150 only in tax. She says that most of her office colleagues and relatives would just simply alter the tax return so that the taxable income is below RM35,000.

If you were in the same situation as Miss Lowe:

i) Would your friends' and relatives' action affect your decision to 'reduce' your taxable income?

YES _____ NO _____

ii) What is the probability of reducing taxable income?

Very low probability 1 2 3 4 5 Very high probability

PART A 8 - THE ROLE OF THE INLAND REVENUE BOARD

Mr. Albert is a partner in a business. He has always in the past pays his income tax through monthly scheduler tax deduction (STD). In year assessment 2005, he found that he has overpaid RM500. Due to financial constraint, he tried to claim back that amount and completed a very long refund forms and furnished all supporting documents. Two months later he received a letter from the IRB informing him that he could not get the refund. The overpaid amount would instead become a tax credit and will be set-off against his income tax in year assessment 2006. He was very frustrated and is considering over claiming deductions in his next tax return (in YA 2006) so that the income tax payable and his total STD tally.

If you were in the same situation as Mr. Albert;

i) Would you make over claim deductions in year assessment 2006?

YES _____ NO _____

ii) What is the probability of making over claming deductions?

Very low probability 1 2 3 4 5 Very high probability

SECTION B – TAX KNOWLEDGE

This section consists of Part B1 to Part B6. Please read each statement carefully and answer (circle) according to your knowledge.

PART B 1-(TAXPAYER GENERAL RESPONSIBILITIES AND RIGHTS)

For each question in this part, please circle:

1	If you think you will **DEFINITELY DO**
2	If you think you will **PROBABLY DO**
3	If you are **NOT SURE** either do or not to do
4	If you think you will **PROBABLY NOT DO**
5	If you think you will **NEVER DO**

The following are my responsibilities and rights as taxpayers:

		Will do				Will not do
1	To inform and declare actual income received from all sources to the IRB	1	2	3	4	5
2	To keep records/documents pertaining to income and expenditure for a period of seven years after submission of the Tax Return	1	2	3	4	5
3	To pay taxes due within 30 days from the date of issue of the Notice of Assessment or within the stipulated period	1	2	3	4	5

PART B 2 -(TYPES OF INCOME)

For each question in Part B2 to Part B6, please circle:

1	If you think the statement is **DEFINITELY WRONG**
2	If you think the statement is **PROBABLY WRONG**
3	If you are **NOT SURE** about the statement.
4	If you think the statement is **PROBABLY CORRECT**
5	If you think the statement is **DEFINITELY CORRECT**

1. Employment income

The following income **MUST BE INCLUDED** in taxable income:

		Wrong				Correct
4	Basic salaries	1	2	3	4	5
5	Leave pay	1	2	3	4	5
6	Commission	1	2	3	4	5
7	Allowance or perquisite whether in cash or otherwise	1	2	3	4	5

The following income **MUST BE EXCLUDED** in taxable income:

		Wrong				Correct
8	Living accommodation provided by employer	1	2	3	4	5
9	For government servant, Housing and Civil Servants allowance in year assessment 2006	1	2	3	4	5
10	Mileage claims/travelling allowances	1	2	3	4	5

2. <u>Dividend & Interest income</u>

The following income **MUST BE INCLUDED** in taxable income:

		Wrong				Correct
11	Dividend received from unit trust managed by Permodalan Nasional Bhd (ie. ASN,ASB etc)	1	2	3	4	5
12	Dividend received from unit trust managed by private financial institutional (i.e. Public Mutual Fund, Sourthen Mutual Fund, etc.)	1	2	3	4	5
13	Dividend received from a coorperative society in Malaysia	1	2	3	4	5

The following income **MUST BE EXCLUDED** in taxable income:

		Wrong				Correct
14	A gross dividend paid by a company in Malaysia which is listed in Bursa Malaysia.	1	2	3	4	5
15	Interest received from banking institution for deposit not exceeding RM100,000	1	2	3	4	5
16	Interest received from government securities	1	2	3	4	5

<u>PART B 3 - (PERSONAL RELIEF)</u>

In this part you are requested to answer the questions and the limits as well.

		Wrong				Correct			Wrong				Correct
	Type of relief claimed							**Limit RM**					
17	Personal relief is granted automatically	1	2	3	4	5	17a	6,000	1	2	3	4	5
18	In joint assessment, the spouse's relief is granted automatically	1	2	3	4	5	18a	3,000	1	2	3	4	5
19	Medical expenses for parents	1	2	3	4	5	19a	5,000	1	2	3	4	5
20	Purchase of books, journals and magazines including newspaper	1	2	3	4	5	20a	500	1	2	3	4	5

PART B 4 - (CHILD RELIEF)

Child relief can be claimed for :

		Wrong				Correct
21	Married child only	1	2	3	4	5
22	Restricted for six child only	1	2	3	4	5
23	Child relief under 18 years old is RM1,000	1	2	3	4	5
24	Child relief over 18 years old and study in local institution is RM3,500	1	2	3	4	5
25	Child relief over 18 years old and study in overseas institution is RM1,500	1	2	3	4	5
26	Life insurance premium and contribution to Employee Provident Fund (EPF) is restricted to maximum RM4,000	1	2	3	4	5

PART B 5 - (REBATES)

		Wrong				Correct
27	Taxable income less than RM35,000 entitle to get personal rebate RM450	1	2	3	4	5
28	Zakat rebate is subject to maximum of tax payable.	1	2	3	4	5
29	If the zakat payment is exceeding the total tax payable, the amount that exceed can be carried forward to the following year.	1	2	3	4	5
30	Rebate of RM500 for purchase of personal computer for own use.	1	2	3	4	5

PART B 6 - (AWARENESS ON OFFENCES, PENALTY AND COMPOUND)

For the following questions, please circle according to the scale:

1	If you think you are **DEFINITELY UNAWARE**
2	If you think you are **PROBABLY UNAWARE**
3	If you are **NOT SURE** about the statement.
4	If you think you are **PROBABLY AWARE**
5	If you think you are **DEFINITELY AWARE**

		Unaware				Aware
31	Failure to notify chargeability – compound 10% of the total tax payable subject to minimum of RM300 and maximum of RM5,000	1	2	3	4	5
32	Late submission of tax return or fail to declare his/her source of income after making a declaration in the Tax Return – compound minimum RM50 to maximum RM3,000	1	2	3	4	5
33	Fraud, omissions and understatement – penalty rates imposed is between 15% to 60% of tax taxable	1	2	3	4	5

SECTION C (TAX COMPLIANCE)

Please state your opinion for each given statements using the following scales:

1	**Strongly disagree**
2	**Disagree**
3	**Not certain**
4	**Agree**
5	**Strongly agree**

I wish **TO COMPLY** with tax laws for the following reasons:

		Disagree				Agree
34	If I detected not reporting my exact income, I believe that the tax authority is tolerant towards my offence and most probably it will escape without any punishment.	1	2	3	4	5
35	I believe the tax authority has limited capability to investigate all income reported to them in the year 2006 so I have an opportunity to not report my exact income	1	2	3	4	5
36	I believe that the probabilities of being detected by the tax authority for not declaring the exact income that I receive in the year 2006 are low.	1	2	3	4	5
37	The government spends a reasonable amount on welfare	1	2	3	4	5
38	There are a number of government services, facilities and infrastructure for which I am very thankful	1	2	3	4	5
39	The government does not wastes too much money	1	2	3	4	5
40	I pay about the same amount of taxes as others making the same income	1	2	3	4	5
41	Higher income earners should pay more taxes than lower income earners	1	2	3	4	5
42	By paying right amount of income tax, I believe that other people especially the poor will get the benefit	1	2	3	4	5
43	The tax return is easy and simple to complete	1	2	3	4	5
44	Serious enforcement and penalty by the IRB may result if I do not comply	1	2	3	4	5
45	Because IRB is efficient in its dealings with taxpayer correspondence (e.g. makes refunds in short time)	1	2	3	4	5

I wish **NOT TO COMPLY** with tax laws for the following reasons:

		Disagree				Agree
46	The penalty rates are very low and I can afford to pay the penalty	1	2	3	4	5
47	The enforcement is very weak	1	2	3	4	5
48	I believe that the penalty is lower than my tax saving due to not comply with tax laws.	1	2	3	4	5
49	My expenditure always exceeds my income	1	2	3	4	5
50	The price of basic needs is keep on increasing	1	2	3	4	5
51	I will pay my debts and basic needs first rather than income tax	1	2	3	4	5
52	Significant increase in fuel prices and electricity and water tariff	1	2	3	4	5
53	Significant increase in toll charges	1	2	3	4	5
54	My friends do not comply and they have never been penalised	1	2	3	4	5
55	My parents do not comply and they have never been penalised	1	2	3	4	5
56	My relatives do not comply and they have never been penalised	1	2	3	4	5

ETHIC/ ATTITUDE

		Disagree				Agree
57	I would not feel guilty if I excluded some of my income when completing my tax return	1	2	3	4	5
58	Since the supporting documents do not need to be sent to the IRB, I can manipulate the figure in the tax return	1	2	3	4	5
59	I do not think it is ethically wrong if I excludes small amount of income when completing the tax return.	1	2	3	4	5

SECTION D – PERSONAL BACKGROUND

D1. Gender

Male ☐ Female ☐

D2. Race

Malay ☐ Indian ☐
Chinese ☐ Others ☐ Specify _____

D3. Age

20 - 25	☐	41 - 45	☐
26 - 30	☐	46 - 50	☐
31 - 35	☐	51 - 55	☐
36 - 40	☐	56 and above	☐

D4. Marital status

Single ☐ *** Go to D6** Married ☐
Widow/widower ☐

D5. How many unmarried children do you have?

	No. of children
Below 18	
Over 18 and studying in Malaysia	
Over 18 and studying overseas	
Over 18 and not studying	

D6. What is your religion? _____

D7. Highest level of education

☐ SPM/STPM ☐ Ph.D
☐ Certificate/Diploma ☐ Other (specify) _____
☐ Degree/Professional
☐ Master

D8. Have you ever used 'E-filing' to file your tax returns?

Yes ☐ No ☐

D9. Have you attended/passed any formal taxation course organized by IRB or university or other professional bodies or any bodies previously?

Yes ☐ No ☐

D10. Who is your current employer?

Government ☐ Self employed ☐
Private/partner ☐ Others ☐

D11. Designation (Grade for government servants)

Clerical (Grade < 41)		Senior manager (Grade 51-54)	
Officer (Grade 41 - 44)		Director (Special grade C)	
Manager (grade 44 - 48)		Higher than director (Higher than special grade C)	

D12. Gross monthly income group (RM)

< 1,000		6,001 – 8,000	
1,001 – 2,000		8,001 – 10,000	
2,001 – 4,000		>10,000	
4,001 – 6,000			

D13. Who prepared you tax return? (Please tick)

	Year assessment	Me	Tax agent	Never
D13	2004			
D14	2005			
D15	2006			

D16. Have you ever been audited by IRB

Yes ☐ No ☐

If Yes, how many times ?_____

D17. Have you ever been penalised by the IRB due to the following conditions?

	Yes	If Yes, How many times?	No
Not filing a tax return			
Late filing of tax return			
Under reporting income			
Over reporting income			
Under claiming deductions			
Over claiming deductions			
Late tax payments			

D18. Which political party did you vote for the previous general election?

Government parties ☐ Government-opposed parties ☐ Did not vote ☐

D19. Which political party will you vote for the coming general election?

Government parties ☐ Government-opposed parties ☐ Will not vote ☐

- END OF QUESTIONNAIRE –

THANK YOU