

Taxpayers Compliance Behaviour: Economic Factors Approach

(Pematuhan Cukai Individu: Pendekatan Faktor Ekonomi)

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ABSTRACT

Many developing countries have been integrating multiple tax brackets within the reforms of their respective tax regimes. Since tax systems were introduced in Asian countries several centuries ago, the determinants of tax compliance have been found to differ between countries. No universal findings are highlighted by researchers pertaining to genuine tax compliance determinants among countries sharing similar tax systems, cultures and ethnicities. The present paper attempts to reveal the determinants of tax compliance in Malaysia in a self-assessment system (SAS) with special emphasis on individual taxpayers. Four tax compliance determinants are examined: the probability of being audited; the perception of government spending; tax rates; and the role of the tax authority. From a survey of 1,073 respondents, the results show that all four determinants have a significant impact on tax compliance. The results of the present study may be useful for policymakers in relation to improving tax compliance in light of the four factors. By identifying the a fore mentioned determining factors, the present study further contributes by providing evidence of other key tax compliance determinants in a developing country, particularly in Asia, that is generally under researched. These determinants are expected to affect tax compliance behaviour in other countries that have similar taxpayer backgrounds, cultures, economic environments and policies. The present study may also be utilised to provide further information to assist tax authorities in other Asian countries to improve their respective SAS plans in the future.

Keywords: Tax compliance; perceptions; equity and fairness; self-assessment system

ABSTRAK

Kajian berhubung pematuhan cukai terutamanya di negara yang sedang membangun telah menjadi semakin penting. Terdapat banyak negara sedang membangun telah merubah regim cukai mereka kepada kurungan cukai yang pelbagai, termasuk cukai langsung dan tidak langsung. Sejak sistem cukai diperkenalkan di negara-negara Asia beberapa abad yang lalu, faktor penentu pematuhan cukai didapati berbeza dalam kalangan negara-negara tersebut. Masih lagi tiada penemuan yang universal yang dapat diketengahkan oleh penyelidik berkaitan penentu pematuhan cukai yang sebenar dalam kalangan negara-negara tersebut yang memiliki sistem cukai yang sama serta ciri-ciri budaya dan etnik yang serupa. Kajian ini bertujuan untuk mendedahkan penentu pematuhan cukai di Malaysia, di bawah sistem cukai taksir sendiri (SAS) dengan menumpukan khususnya terhadap pembayar cukai individu. Empat penentuan pematuhan cukai telah diuji iaitu kebarangkalian untuk diaudit, persepsi terhadap perbelanjaan kerajaan, kadar cukai dan peranan pihak berkuasa cukai. Berdasarkan kajian soal selidikt terhadap 1,073 pembayar cukai individu, kajian ini mendapati bahawa keempat-empat penentu yang diuji member kesan signifikan terhadap pematuhan cukai. Hasil kajian ini mungkin berguna kepada penggubal polisi percukaian dari segi bagaimana pematuhan cukai boleh ditingkatkan melalui empat faktor penentu tersebut. Melalui ke semua empat factor penentu ini, kajian ini seterusnya menyumbang dengan memberikan bukti akan kewujudan penentu utama pematuhan cukai yang lain di sebuah negara sedang membangun, terutamanya di Asia yang sebelum ini pernah dikaji. Penentu ini dijangka mampu memberi kesan terhadap gelagat pematuhan cukai di negara lain yang mempunyai pembayar cukai yang mempunyai latar belakang yang hampir sama dari segi budaya, persekitaran ekonomi dan polisi. Kajian ini telah memberikan maklumat lanjut untuk membantu penguat kuasa cukai di negara ini untuk memperbaiki sistem cukai taksir sendiri mereka di masa hadapan.

Kata kunci: Pematuhan cukai; persepsi; kesamaan dan keadilan; sistem taksir sendiri

INTRODUCTION

The issue of tax compliance has long been discussed by many researchers. The study by Allingham and Sandmo (1972) is among the earliest in this field. Allingham and Sandmo (1972) investigate the determinants of tax compliance in the US using psychological and economic

approaches. Tax compliance is conceptually defined in various ways. For example, Andreoni et al. (1998) claim that tax compliance should be defined as the taxpayers' willingness to obey tax laws in order to obtain an economic equilibrium in a country. Kirchler (2007) provide a simpler definition in which tax compliance is depicted as the most neutral term to describe taxpayers' willingness to pay

their taxes. A wider definition of tax compliance provided by Song and Yarbrough (1978) suggests that due to the remarkable aspect of the operation of the tax system in the US, which is largely based on self-assessment and voluntary compliance, tax compliance should be defined as the taxpayers' ability and willingness to comply with tax laws that are determined by ethics, legal environment and other situational factors at a particular time and place. Similarly, several tax authorities, including the Malaysian tax authority, define tax compliance as the ability and willingness of taxpayers to comply with tax laws; declare the correct income in each year; and pay the right amount of taxes on time (IRS 2009; ATO 2009; IRB 2009).

Alm (1991) and Jackson and Milliron (1986) define tax compliance as the reporting of all incomes and payments 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 examined from two perspectives: compliance in terms of administration; and compliance in terms of completing (accuracy) the tax returns (Chow 2004; Harris 1989).

Some authors view tax compliance from a different perspective. For example, Allingham and Sandmo (1972) describe tax compliance as an issue of 'reporting an actual income'. They also claim that tax compliance behaviour is influenced by a situation whereby taxpayers have to make a decision under uncertainty (see also Clotfelter 1983) arising from the possibility of enjoying tax savings due to under-reporting income if the omission of the taxpayer remains unnoticed by tax authorities; or paying a penalty tax on the undeclared amount at a rate which is higher than the taxpayer would have paid had the income been fully declared within the specified time. McBarnet (2001) suggests that tax compliance should be perceived in three ways: *committed* compliance, which refers to taxpayers' willingness to pay taxes without complaint; *capitulative* compliance, which describes the situation where taxpayers reluctantly 'give in' and pay taxes; and *creative* compliance, which occurs when taxpayers attempt to reduce taxes by taking advantage of possibilities to redefine income and deduct expenditures within the bracket of tax laws. Spicer and Lundstedt (1976) perceive the degrees of tax compliance as 'a special form of gambling' (which may involve likelihood of detection and penalties) that requires the tax authority to understand the factors underlying taxpayers' decision to comply with tax laws.

Some literature such as characterises and explains tax compliance as the output of interrelation among variables, which include the perception of equity,¹ efficiency² and incidence (public finance views) (e.g., Allingham & Sandmo 1972; Spicer & Lundstedt 1976; Lewis 1982; Andreoni et al. 1998). Aspects of tax enforcement aspects, such as penalties and the probability

of detection, also relate to tax compliance, while other labour market factors, including an individual's wages and tax bracket, also contribute to tax compliance (Kirchler 2007).

Based on the definitions provided in previous studies, some keywords emerge that are widely and interchangeably used to define tax compliance. Examples include the words 'obey', 'ability' and 'willingness' (McBarnet 2001; Andreoni et al. 1998; Kirchler 2007; Song & Yarbrough 1978; IRS 2009; ATO 2009; IRB 2009). Other key phrases relevant in defining tax compliance include 'reporting all income' (Alm 1991; Jackson & Milliron 1986); 'act of filing tax returns' (Singh 2003); and 'declare the correct income' (IRS 2009; ATO 2009; IRB 2009). In addition, some authors also include 'timeliness' and 'right amount of tax' (Song & Yarbrough 1978; IRS 2009; ATO 2009; IRB 2009; Ming Ling et al. 2005) as part of their definitions of tax compliance.

The wider perspective of tax compliance is also illustrated in the definition provided by Andreoni et al. (1998), which includes the desired outcome as a result of obedience to tax laws such 'to obtain an economic equilibrium'; and that by Allingham and Sandmo (1972) and Spicer and Lundstedt (1976), who place emphasis on the ability to 'enjoy tax saving' or 'pay penalty'. Singh (2003) describes tax compliance as a voluntary action because it is performed 'without having to wait for follow up actions from tax authority'. Apart from the aforementioned definitions of tax compliance, Song and Yarbrough (1978) include some factors of compliance in their definition when stating that tax compliance is 'determined by ethics, legal environment and other situational factors'.

Since many empirical studies exist that attempt to define tax compliance, tax compliance is defined, for the purposes of the present study, as *the taxpayers' willingness to comply with tax laws; declare the correct income; claim the correct deductions, relief and rebates; and pay all taxes on time*, which is derived from various aforementioned definitions (IRS 2009, ATO 2009, IRB 2009, Alm 1991, Jackson & Milliron 1986; Kirchler 2007).

PREVIOUS RESEARCH-TAX COMPLIANCE DETERMINANTS

Economic Factors Economic factors, in relation to tax compliance, refer to actions that are associated with the costs and benefits of performing the actions (Loo 2006). Hasseldine (1993); Song and Yarbrough (1978); and Torgler and Schneider (2005) assume that taxpayers are rational economic evaders who will likely assess the costs and/or benefits of evasion (tax savings, see Allingham & Sandmo 1972). The taxpayers will attempt to minimise their tax liability, for example, by intentionally under reporting their income and will enjoy tax savings if they are not detected by the tax authorities. On the other hand, the taxpayers are willing to pay more, including a penalty, if they are caught (Song & Yarbrough 1978; Somasundram 2005; Torgler 2007). In the following subsections, tax compliance determinants associated with economic factors

(i.e., tax rates; tax audits; perceptions toward government spending; and the role of the tax authority; are explored in more detail.

Tax Rates Clotfelter (1983) claims that “reducing tax rates is not the only policy that has the potential to discourage tax evasion”, but the tax rate is an important factor in determining tax compliance behaviour, although the exact impact remains unclear and debatable (Kirchler 2007). Clotfelter also suggests that a significant relationship exists between tax rates and evasion, particularly since tax rates can be used as an instrument that can be manipulated for policy goals. To this end, raising marginal tax rates is likely to further encourage taxpayers to evade tax (Witte & Woodbury 1985; Ali et al. 2001; Torgler 2007), although lowering tax rates does not necessarily increase tax compliance (Trivedi et al. 2004; Kirchler 2007). This uncertainty and conflicting issue (for example, reducing tax rates to increase compliance) has attracted the attention of tax researchers attempting to uncover more certain and concrete evidence of the impact of tax rates on evasion. Allingham and Sandmo (1972) examine the existence of relationships between actual income, tax rates, penalties and investigation; and tax evasion using statistical modelling. They conclude that taxpayers may choose either to fully report income or report less, irrespective of tax rates. Tax rates appear to be insignificant in determining tax evasion. However, a study by Tanzi (1980), which uses an econometric model to analyse aggregate data in an effort to explain the relationship between marginal tax rates and evasion, finds that tax rates are positively correlated with tax evasion in the US.

However, other economic models of rational compliance decisions perceive tax rates as having a mixed impact on tax compliance or predict that increasing tax rates will increase compliance behaviour (Kirchler et al. 2008). In contrast with Allingham and Sandmo (1972), various studies find that increasing tax rates encourages non-compliant behaviour or produces mixed findings (see Pommerehne & Wech-Hannemann 1996; Park & Hyun 2003). Porcano (1988) claims that tax rates have no effect on tax compliance, while most experimental studies find that increasing tax rates leads to tax evasion (Alm et al. 1992; Friedland et al. 1978; Park & Hyun 2003). Since the impact of tax rates is debatable (positive, negative or no impact on evasion), Kirchler et al. (2008) and McKerchar and Evans (2009) suggest that the degree of trust between taxpayers and the government has a major role in ascertaining the impact of tax rates on compliance. A high tax rate can be perceived as unfair treatment in the eyes of taxpayers when trust is low and the same level of tax rate can be interpreted as a contribution to the community when trust is high (Kirchler et al. 2008).

In summary, evidence suggests that tax rates have a mixed impact on tax compliance. According to extant studies, decreasing tax rates will not necessarily increase compliance (Kirchler et al. 2008), while increasing tax rates will not necessarily decrease compliance (Allingham & Sandmo 1972).

Tax Audits Tax audits, audit rates and prior audit experience are ambiguously discussed in relation to tax compliance. Some studies claim that audits have a positive impact on tax evasion³ (e.g., Jackson & Jaouen 1989; Shanmugam 2003; Dubin 2004). These findings suggest that in self-assessment systems (SASS), tax audits can play an important role and their central role is to increase voluntary compliance. Audits rates⁴ and the thoroughness of the audits can 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 may be tempted to report less than their actual income and claim false deductions. Butler (1993) also finds that tax audits can change compliance behaviour from negative to positive. These findings complement the studies by Witte and Woodbury (1985) and Beron et al. (1988). Witte and Woodbury (1985) study of small proprietors and find that tax audits have a significant role in tax compliance. However, the study did not empirically test individual taxpayers, thus, leaving room to conduct research in this area. While Butler (1993) and Witte and Woodbury (1985) find significant results pertaining to the relationship between tax audits and tax compliance, Beron et al. (1988) finds a contradictory result. Beron et al. (1988) report that audits do not significantly correlate with evasion for all of the groups examined in the study. Audits are 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).

Dubin et al. (1987) estimate 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 Internal Revenue Service (IRS) for the period of 1977-1985. They find that higher audit rates often have a positive impact on income tax reporting, but audit rates are not always statistically significant. The study also finds that a spill over effect exists from tax audits. Taxpayers, who are not themselves audited, pay more in taxes when audit rates increase. From another point of view, Evans et al. (2005) examine the tax compliance of small and medium size enterprises (SME) in Australia. The objective of the study is to examine the relationship between the record keeping practices of SMEs and potential exposure to tax compliance problems. The study hypothesises that low tax compliance among SMEs might better encourage the tax authority to increase audits and investigations. The study involved 129 small business owners; and 130 tax practitioners and Australian Tax Office (ATO) auditors. Using mail surveys, the study finds that audit history (including frequency of audits), audit outcome and the type of audit of small business owners have a significant indirect impact on tax compliance (in terms of record keeping). The results also imply that the primary objective of small business owners when performing record keeping is tax compliance related rather than part of the management of their business.

Thus, as audits investigations increase, many SMEs will invest more effort in proper record keeping.

In summary, previous studies evidence that tax audits play an important role in increasing voluntary compliance. Audit rates and the thoroughness of the audits can potentially encourage taxpayers to be more prudent in completing their tax returns.

Perceptions toward Government Spending Studies on the relationship between specific aspects of actual government spending and tax compliance, particularly on tax evasion, are very limited. Logically, taxpayers, especially those who pay high amounts of tax, are sensitive to what the government spends their money on. Although limited empirical evidence exists, it is reasonable to assume that taxpayers will tend to evade tax if they perceive that the government spends tax money lavishly and unwisely. However, in most developed countries, such as the UK which has implemented a system allowing taxpayers to "Pay as You Earned (PAYE)", it is quite difficult to evade tax liability because deductions are made at the source for the majority of taxpayers' liabilities. Unlike the UK, taxpayers have greater opportunities to under report their income and, therefore, pay less tax in countries (for example, Malaysia and Singapore) where PAYE is not as extensively used. Lewis (1982) suggests that attitudes should be examined to the degree to which they are a product of myth and misperception. The argument presented is 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 not changed. Lewis (1982) also claims that misperceptions may play a major role in shaping fairness evaluations. Meanwhile, Roberts et al. (1994) also suggest that the attitude towards one's own tax evasion (tax ethics) and attitudes towards other people's tax evasion are very important. Therefore, if the government is wisely spending the national revenue for basic facilities, such as 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 things that are considered unnecessary or unbeneficial to them, then taxpayers will feel betrayed and attempt to evade.

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

Role (Efficiency) of the Tax Authority/Government A debate exists in the literature as to how the effective operation of the tax system by the tax authorities influences taxpayers' compliance behaviour. Researchers from different countries have been unable to achieve the agreement on this issue, which appears to differ from country to country. Therefore, different countries have proposed and developed different solutions for

the relationship between taxpayer compliance and the operation of the tax system. For instance, in the US, the IRS views the non-compliance with tax codes as a great challenge, particularly since the tax gap has increased tremendously in the last few decades. In 1976, an IRS report estimated income was \$75 to \$100 billion - about 7% to 9% of reported income (Clotfelter 1983). While the tax gap in 1976 was estimated to be higher than this figure, the tax gap in the US in 1993 was more than \$170 billion or a 70% to 126% increase compared to the IRS estimate in 1976 (Hasseldine & Li 1999).

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

The role of the tax authority in minimising the tax gap and increasing voluntary compliance is very important. Hasseldine and Li (1999) illustrate that placing the government and the tax authority as the main parties that need to be continuously efficient in administering the tax system is important in order to minimise tax evasion. The government plays a central role by designing the tax system itself, as well as the specific enforcement and collection mechanisms (Hasseldine & Li 1999). Furthermore, Roth et al. (1989) suggest that in order to increase compliance, maximise tax revenue and be respected by taxpayers, the government must first have an economical tax system which is practicable⁵; 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; and they should also have a good relationship with the international tax regime.

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

In summary, although previous studies do not provide conclusive results on the measurable impact of governmental efficiency on compliance, researchers from different countries discuss the issue and some authors describe the role of government in inducing tax compliance as important and relevant in SASS (see Richardson 2008; Hasseldine & Li 1999).

RESEARCH HYPOTHESES

The increase of compliance relative to the probability of being audited has received attention from many researchers. Allingham and Sandmo (1972) claim that

taxpayers will always declare their income correctly if the probability of detection is high. The probability of detection plays a significant role in reporting behaviour since 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 et al. (2001) investigate the relationship between the probability of being audited and taxpayers' response. The experiment⁶ indicates that taxpayers' behaviour varies in terms of level of income and the probability of being audited, which plays a significant role in determining taxpayers' evasion behaviour. However, the direction of the relationship (positive or negative) is not clearly stated by Slemrod et al. (1998). This result is also supported by Andreoni et al. (1998), who find that prior audit experience influences and increases compliance among taxpayers. Conversely, Young (1994) and Slemrod et al. (2001) find that the probability of being audited is negatively correlated with compliance behaviour. Following the above discussions, it is therefore hypothesised that:

H₁ The probability of being audited is positively correlated with tax compliance.

Studies on the relation between government spending and tax compliance, particularly concerning tax evasion, are very limited. Taxpayers, especially those who pay large amounts of tax, can be expected to be sensitive to how the government spends its money. Although limited empirical evidence exists on this topic, it is suspected that taxpayers will tend to evade tax if they perceive that the government spends tax money unwisely. If the government is spending the national revenue wisely for basic facilities, such as education, health, 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 may feel betrayed and attempt to evade. Therefore, following the above discussions, it is hypothesised that:

H₂ The positive perception of government spending is positively correlated with tax compliance.

A theoretical economic model introduced by Allingham and Sandmo (1972) indicates that tax audits have an impact on tax compliance (i.e., higher tax audits frequency discourages tax evasion). However, more complex models, such as the principal agent theory and game theory, suggest that tax audits and audit probability are difficult to portray in compliance models since the results are determined endogenously with tax cheating (Andreoni et al. 1998). Studies by Beck et al. (1991) and Becker et al. (1987) find that tax audit rates affect tax compliance. However, an experimental approach limits the environment to a narrow perspective compared to a real world or a national survey. Marrelli (1984), Wang and Conant (1988), Gordon (1990) and Marrelli and Martina (1988) find that tax audit rates have a negative association with evasion. In contrast, Virmani (1989) indicates that tax audit rates have a positive association with evasion,

meaning that higher rates will encourage people to cheat. Since previous studies indicate that tax audit rates affect tax compliance behaviour, the awareness of offences and tax audits are presumed to have a significant influence as well. If the taxpayers are aware of the offence and the consequences of non-compliance, they may not cheat. On the other hand, if taxpayers are unaware of the implications of being dishonest, they may cheat because they presume that they will not be detected and could save money. Therefore, following the above discussions, it is hypothesised that:

H₃ Tax rates are positively correlated with tax compliance.

No conclusive evidence exists concerning how tax authorities can influence taxpayers' compliance behaviour, as researchers from different countries are unable to reach agreement on this issue. The lack of consensus is due to the fact that each country has their own approach in ascertaining taxpayers' compliance behaviour. In the US, for example, the IRS views tax non-compliance as a big challenge and has dealt with the issue carefully since the tax gap has increased tremendously in the last decade. The role of the tax authority in minimising the tax gap and increasing voluntary compliance is very important. Hasseldine and Li (1999) consider the government and tax authority to be the main parties that need 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 & Li 1999).

Furthermore, Roth et al. (1989) suggest that in order to increase compliance, maximise tax revenue and be respected by taxpayers, a government must first have an economical tax system that is practicable⁷; and they must discourage tax evasion and induce honesty, while avoiding the tendency to dry up the source of the tax. In addition, the government 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 suggests 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:

H₄ The role (efficiency) of the tax authority is positively correlated with tax compliance.

RESEARCH METHOD

The data were collected through a national survey. 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 of 5,500 surveys were mailed to individual taxpayers throughout Malaysia. The taxpayers were selected at random from telephone

directories. Kasipillai and Baldry (1998) assert 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, since many low income earners are unlikely to lodge tax returns in the Malaysian SAS, their possible exclusion from the survey is not considered to be of major concern given that the focus is on taxpayers who have had direct experience with the SAS. Specifically, in Malaysia, an individual who earns less than RM 25,501 (USD 8,226) per annum does not have to lodge a tax return (IRB 2010). Secondly (and perhaps more importantly), in Malaysia, phone ownership is very high and no 'ex-directory' service is available, whereby numbers can be unlisted (as typical in the UK for example). Therefore, the employment of this sampling method in the Malaysian context should result in good randomisation with few limitations compared to other sampling approaches for this scale of survey⁸.

However, using a sample from a telephone directory approach limits one key output that may alter the results: the possible impact of the growth in mobile phone ownership, which has become significant in Malaysia. In early 2006, mobile penetration passed the 80 percent mark with subscriber numbers at the same time passing 20 million⁹. The statistics were a significant jump from 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, such that owning a landline is still considered necessary even in households which possess more than one mobile phone.

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

tax knowledge questions; tax compliance questions; and respondent backgrounds. A total of four tax compliance determinants (independent variables) were examined, as illustrated in Table 1: the probability of being audited (E1); perceptions toward government spending (E2); tax rates (E3); and the role of the tax authority (E4).

To test the hypotheses, the data is analysed using multiple regressions (Ordinary Least Squares, OLS). Equation 1 is used as the base regression model to test the hypotheses and establish the tax compliance determinants.

$$TC_i = \alpha + \beta_1 PROBAUDIT_i + \beta_2 GOVSPEND_i + \beta_3 RATES_i + \beta_4 ROLE_i + \varepsilon$$

where α = regression intercept,
 β = estimated coefficient,
 TC_i = tax compliance score,
 $PROBAUDIT_i$ = probability of being audited,
 $GOVSPEND_i$ = perception on government spending,
 $RATES_i$ = tax rates and enforcement, and
 $ROLE_i$ = role of tax authority, and
 ε = error term.

RESULTS

Out of 5,500 surveys distributed, 71 were returned to the researchers due to incomplete addresses; and because the intended respondents have moved or were deceased. Out of 1,106 complete surveys returned, 1,073 (19.51 percent of the total sample) were usable and further analysed. In terms of the number of surveys distributed, 5,500 surveys is a considerably smaller number than 2,198,914,¹⁰ which is the total population of individuals taxpayers in Malaysia in 2006 (IRB 2006). However, Loo (2006) shows that using such a number of questionnaires in distribution is large enough to represent individual taxpayers in Malaysia. In addition, Sekaran (2000) suggests that the optimum

TABLE 1. A Description of the variables

Variables	Symbol	Descriptions
Tax compliance (dependent variable)	TC	The total score is derived from a set of 26 questions. The minimum total score for each respondent is 26 (1 mark times 26 questions, where 1 = non-compliant) and the maximum total score is 130 (5 times 26 questions, where 5 = very compliant).
Probability of being audited (E1)	PROBAUDIT	The 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 on how the government spends taxpayers' money or redistributes the tax collection. The minimum score is 1 (non-complaint), and the maximum is 15 (very complaint).
Tax rates (E3)	RATES	Taxpayers' perception on the tax rates. The minimum score is 1 (non-complaint) and the maximum is 15 (very complaint).
The role of tax authority (E4)	ROLE	The role of the tax authority in administering the tax system (efficiency, refunds, response with complaints, customer services, etc). The minimum score is 1 (non-complaint) and the maximum is 15 (very complaint).

sample size for a total population of one million is 384 or 0.0384 percent. Knofczynski and Mundfrom (2008) provide some guidelines as to the minimum sample size needed for accurate predictions in multiple regressions and suggest that in order to obtain a valid and good prediction in multiple regressions, the number of sample is determined by the number of predictors in the multiple regression. Since the present study attempts to analyse nine predictors, Knofczynski and Mundfrom (2008) suggest that the number of the sample should be 900.

The respondents are comprised of 588 (55%) females and 483 (45%) males, while 2 respondents did not mention their gender. Since the present study emphasises individual taxpayers, a minimum age of 20 years old was considered reasonable. There were 8 age groups involved in the present study with a 5-year range in each group, with the exception of the 'above 56 years old' category. The largest group consists of 252 (24%) respondents aged between 26 and 30 years old, while the group of above 56 years old has the lowest number of 14 (1%) respondents. Cumulatively, respondents aged between 20 and 40 years old make up the largest portion with 749 responses (70%). A total of 768 (72%) respondents are married; 280 (26%) are single; and 20 (2%) are widows/ widowers.

Table 2 reports the Pearson correlation matrix for dependent and independent variables. It shows results that indicate that all of the independent variables are found to be significantly correlated with tax compliance (TC). The coefficient of correlation between each independent variable and TC was stable at between $r = .36$ to $r = .60$. The highest correlation was between TC and the taxpayer's perception of tax rates (RATES) ($r = .60$) followed by the probability of a taxpayer being audited (PROBAUDIT); the role of the tax authority (ROLE); and the taxpayer's perception of government spending (GOVSPEND). The significant correlations here suggest that all independent variables are significant determinants of tax compliance.

TABLE 2. Pearson correlation matrix for dependent (TC) and independent variables

	1	2	3	4	5
1. TC	1.000				
2. PROBAUDIT	.551**	1.000			
3. GOVSPEND	.358**	-.022	1.000		
4. ROLE	.394**	-.01388	.411**	1.000	
5. RATES	-.594**	.390	-.035	.036	1.000

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The results from multiple and stepwise multiple regressions that were reported in Table 3 indicated that tax compliance is influenced by all the four selected variables namely RATES, PROBAUDIT, ROLE and GOVSPEND. Stepwise multiple regression also suggests that RATES becomes the main factor with a beta coefficient of .442, followed by PROBAUDIT ($\beta = .388$), ROLE ($\beta = .272$) and GOVSPEND ($\beta = .270$). The estimated correlation coefficient (R) and estimated coefficient of determination (R^2) are estimated within the range of .825 and .680, respectively. The results in Table 3 also validate that when all variables are significant, no difference exists between the results of OLS and stepwise multiple regressions.

The results imply that taxpayers that have a high probability of being audited have a tendency to be more compliant. Subsequently, hypotheses H_1 (*probability of being audited is positively correlated with tax compliance*) is accepted. Apart from that, the positive perception of government spending and the efficient role played by the tax authority are also significant determinants that cultivate positive compliant behaviour among individual taxpayers in Malaysia. Again, hypotheses H_2 and H_4 are also accepted. Tax rates are also a negatively significant determinant in influencing tax compliance behaviour in Malaysia. The results indicate that high tax rates can potentially increase non-compliance behaviour as higher

TABLE 3. Results of multiple regression and stepwise multiple regression

Variables	Multiple regression		Stepwise multiple regression			
	Coefficient	t	VIF	Coefficient	t	VIF
(Constant)	26.872*	25.050		26.872*	25.050	
PROBAUDIT	1.500*	20.525	1.181	1.500*	20.525	1.181
GOVSPEND	.991*	14.136	1.207	.991*	14.136	1.207
ROLE	1.192*	14.245	1.208	1.192*	14.245	1.208
RATES	-1.665*	23.370	1.185	-1.665*	23.370	1.185
<i>Model fit:</i>						
R	.825		.825			
R^2	.68		.68			
Adjusted R^2	.679		.679			
Std. error	6.68		6.68			
F statistic	562.4		562.4			

Notes: Dependent variable – Tax compliance

* Significant at $p < 0.10$

** Significant at $p < 0.05$

*** Significant at $p < 0.01$

income earners will be more reluctant to comply because they will have to pay higher income tax. Subsequently, H_3 is also accepted.

SUMMARY AND CONCLUDING REMARKS

The present study examines factors affecting taxpayers' behaviour. Four potential determinants of tax compliance are examined in this study: the probability of being audited; the perceptions of government spending; tax rates; and the role of the tax authority. Using tax compliance (TC) as the dependent variable, the results suggest that tax compliance is influenced by the probability of being audited; perceptions of government spending; tax rates; and the role of the tax authority. Interestingly, tax rates (negative association) not only become another factor that affects tax compliance behaviour in relation to the SAS in Malaysia in the present study, but also the most significant determinant (refer to Table 3). Thus, hypothesis H_1 is accepted and the finding supports the results of Allingham and Sandmo (1972) and Eriksen and Fallan (1996). The second most significant determinant of tax compliance is the probability of being audited. The results of the present study suggest that a high probability of being audited will encourage tax compliance. Moreover, positive perceptions of how the government spends taxpayers' money will also potentially increase tax compliance.

With regards to the probability of being audited, previous studies (e.g., Allingham & Sandmo 1972; Jackson & Jaouen 1989; Shanmugam 2003; Dubin 2004; Riahi-Belkaoui 2004; Richardson 2006; Andreoni et al. 1998; Bergman 1998; Verboon & Van Dijke 2007; Eisenhauer 2008) find that a high probability of being audited or detected will encourage taxpayers to be more compliant (positive relationship). However, some other studies find contradicting result, concluding that a high probability of being audited will potentially decrease compliance creating a negative association (e.g., Young 1994; Slemrod et al. 2001; Braithwaite et al. 2009). In addition, Slemrod et al. (1998) does not clearly state the direction (either positive or negative). Therefore, since a high probability of auditing can encourage tax compliance, the tax authority should increase their number of audit samples so that tax compliance will increase; the tax gap will decrease; and the objectives of the SAS will be achieved.

With regards to the perceptions of taxpayers on government spending, those who engage in tax evasion often justify such behaviour by suggesting that the government wastes tax revenue and spends unwisely. Consequently, such a negative perception can decrease voluntary compliance in the long run (Braithwaite et al. 2009). It is expected that if the government spending of tax money is justifiable, voluntary compliance will increase. In contrast, if taxpayers perceive that the government spends too much on unnecessary and costly expenditures that are of little benefit to citizens, taxpayers may feel

betrayed and attempt to evade. In justifying one's own behaviour, a person has the tendency to blame and believe that the cause is due to external factors. 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 & Evans 2009). Therefore, to increase tax compliance among the taxpayers and thus the tax collection, the government should remove a possible cause for such behaviour by spending the taxpayers' money wisely.

The issue of perception, specifically perception of government spending, is really an issue which is beyond the direct control of the tax authorities because perception also depends on the personal opinions of taxpayers. Kirchler (2007) classifies this factor as a 'social psychological perspective' and outlines that this perspective is difficult to deal with in order to increase tax compliance. Despite the difficulty, the negative association between perception and tax compliance found in the present study mandates serious consideration by the Malaysian government. The government should respond positively by wisely spending taxpayers' money and fulfilling the nation's (taxpayers') basic needs, including infrastructure, medical allocations and education, in order to increase taxpayers' confidence in the government. Unnecessary expenditures by the government will cultivate tax non-compliant behaviour according to the results of the present study.

As such, to the IRB, low compliance rates and non-compliance influence the frequency of their tax audit activities and the practice of imposing penalties. However, previous literature (see Beck et al. 1991; Becker et al. 1987) suggests that taxpayers' compliance behaviour is not solely influenced by tax rates and the frequency of tax audits (although the present study did not find these factors to be significant), but also by the taxpayer's level of tax knowledge; attitudes and perceptions of the tax system, particularly in relation to the fairness of the system; and the inadequacy of the tax authority's enforcement strategies (Kirchler 2007; Torgler 2007; Richardson 2006). For example, the role of the tax authority in minimising the tax gap and increasing voluntary compliance is found to be very important as Hasseldine and Li (1999) consider the government to be the main influencing factor in relation to tax evasion. The government plays a central role in designing and enforcing the tax systems; and collecting taxes (Hasseldine & Li 1999). Spicer and Becker (1980), Andreoni et al. (1998) and Wenzel (2003) claim that if a specific group perceive their tax liability is higher than other groups, then tax evasion may occur among the group members. At the social level, tax compliance with regards to fairness is viewed as a national concern. If taxpayers perceive the tax system as unfair, tax evasion is more likely to occur (Allingham & Sandmo 1972; Baldry 1999).

The present study further contributes to the field by providing evidence of other key tax compliance determinants in a developing country, particularly in Asian countries that have been previously under researched.

These determinants may also affect tax compliance behaviour in other countries that have similar taxpayer backgrounds; culture; economic environments; and policies. Therefore, the findings of the present study may be useful for tax authorities in similar countries when developing their respective SAS plans.

It is acknowledged that the present study has a number of limitations. The use of a self-report survey may be less reliable, especially when the information sought on tax is sensitive; potentially incriminating; or embarrassing (Richardson 2008). The actual behaviour of the subjects may vary from the responses given. While acknowledging this constraint, it is believed that the research method employed 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 can be potentially embarrassing for respondents. Secondly, using telephone directories potentially limits responses by only facilitating contact with the head of households. Also, replies from landline telephone owners tend to include only the richer segment of the society. However, this issue is balanced by a high number of usable responses (1,073), which is relatively high compared to other similar tax studies. The area of tax compliance, particularly in regards to a SAS, offers opportunities for additional research. Instead of using a survey, other methods of data collection (for example, interviews or experiments) may provide different results. Future research could be conducted via a longitudinal study in which a comparison of more years might provide different results from the 'point in time' utilized in the present study. Using data from a 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 a tax authority are very slim.

ENDNOTES

- ¹ An effective tax system will be less equitable when the wealthy evade a larger share of taxes than the poor (Andreoni et al.1998).
- ² Any effort towards tax non-compliance affects tax efficiency and compliance costs. Unreported income distorts tax collection (Andreoni et al.1998; Lewis 1982).
- ³ Meaning that taxpayers who have been audited by a tax authority will be more compliant at some point following the audit.
- ⁴ Audit rates are calculated based upon the number of tax returns audited and divided by the number of tax returns accepted by a tax authority.
- ⁵ The government has suitable powers (assessment and collection) to administer the tax system.
- ⁶ Using taxpayers' tax returns for two years to compare the differences in reported income, deductions and tax liabilities. Random sampling was used.
- ⁷ The government has suitable powers (assessment and collection) to administer the tax system.
- ⁸ 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.

- ⁹ The 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).
- ¹⁰ This figure is based upon the total number of tax returns distributed to registered individual taxpayers.

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