Factors affecting tax compliance behaviour in self assessment system

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This paper attempts to provide results of a study on the importance of tax knowledge in determining tax compliance behavior in self assessment system (SAS) in Malaysia. SAS have become the key tax administrative approach in developed countries including the USA, UK and Australia. This approach emphasizes both the tax payers’ responsibility to report their income and to determine their own tax liability. One of the main facilitating factors to achieving these aims is the development of the level of tax knowledge among taxpayers. In addition, the introduction of SAS typically achieves further efficiency gains by means such as, reductions in the requirements to supply the supporting documents and proof of income and deductibles to the tax authority when submitting a tax return. The objective of this study is to investigate how these factors interact in the development of a suitable SAS. The study used recent cases of SAS introduction to explore these interactions – the case of individual self assessment in Malaysia. This commenced in year of assessment 2004 and therefore, has been operational now for seven tax years. Given appropriate time, we argued, to enable an exploration to the extent of which developments of tax knowledge and changes in compliant behavior are visible resulting from this change of tax administrative approach. This study will focus on the level of Malaysian individual taxpayers’ knowledge and how tax knowledge levels influence tax compliance behavior in a new SAS. Data were collected through a survey resulting in 1073 responses. Two stages were used to facilitate the analysis. Stage 1, using the t-test and ANOVA, focuses on the characteristics of taxpayers’ knowledge including gender, ethnic, educational level and income level. Stage 2 attempts to describe the relationship between tax knowledge and tax compliant using stepwise multiple regressions. In this model, tax knowledge was divided into seven sub-categories namely; taxpayers responsibilities’ and rights, knowledge about employment income, dividend and interest, personal relief, child relief, rebates and awareness on offence, penalty and fine. The results of this study suggest to policy makers further on the extent to which tax knowledge is important in a self assessment system and in what ways can it 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 understanding of taxpayers' behavior.

Key words: Tax compliance, tax knowledge, Malaysia, self assessment system.

INTRODUCTION

The exact meaning of tax compliance has been defined in various ways. For example, Andreoni et al. (1998) claimed that tax compliance should be defined as 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 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, 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).

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 behavior was influenced by a situation whereby taxpayers have to make a decision under uncertainty (see also Clotfelter, 1983) that is, 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.

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 that is, 'reporting all income' (Alm, 1991; Jackson and Milliron, 1986), 'act of filing tax returns' (Singh, 2003), 'declared 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 et al., 2005) as part of their definitions.

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 that is, 'determined by ethics, legal environment and other situational factors'. Since there have been many empirical study attempts that 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.

### Tax knowledge and compliance

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

The influence of knowledge on compliance behaviour has been proven in various researches (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 shown evidence 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 the evidence that tax knowledge affects understanding of taxpayers, an obvious issue that has been raised by previous researchers (Singh, 2003; Eriksen and Fallan, 1996; Harris, 1989) is whether enhancement of tax knowledge will increase tax compliance. Thus, the relationship between tax knowledge and tax compliance is described here.

Eriksen and Fallan (1996) claimed that 'knowledge about tax law is assumed to be of more importance 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 (Lewis, 1982).

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 behavior among individual taxpayers and thirdly, the research involves tax agents in order to determine their influence in determining taxpayers' behavior 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) attempted determining the relationship between the level of tax knowledge and attitudes toward taxation; whether specific tax knowledge influences attitudes in general (not only tax attitudes) and
investigates people's behavior 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 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 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 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').

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) and thus this will in turn increase compliance and reduce the inclination to evade taxes.

Collins et al. (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. (1992) found that tax knowledge and the level of education were negatively correlated with compliance behavior. In addition, knowledge about tax law is assumed by Collin et al. that (1992) 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 (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 that 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).

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 make the students more tax knowledge to as many taxpayers as possible in order to improve their tax ethics and perceptions of 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) and thus this will in turn increase compliance and reduce the inclination to evade taxes.

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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.”

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) could be achieved if taxpayers can complete the tax returns correctly and pay the right amount of taxes. Thus, to realize the objectives of SAS, taxpayers need to be informed, well educated (particularly 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.

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 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 heightened 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 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 the Income Tax Act 1967 as well as studies conducted by Harris (1989); Eriksen and Fallian (1996); Loo (2006); Loo and Ho (2005). To facilitate the data analysis process, two stages were involved; Stage 1 – examining the level of taxpayers’ knowledge and the profile of respondents; and Stage 2 – to explore the association between various aspects of tax knowledge (independent variables) and tax compliance based on hypothetical and direct questions. Data was analyzed predominantly by t-test, one-way analysis of variance (ANOVA), multiple regressions and stepwise multiple regressions.

Individual taxpayers are the main subject of this study and are particularly important in understanding tax compliance particularly in a self assessment system (DasGupta et al., 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 et al., 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).

Hypotheses developments

The influence of tax knowledge on compliance behavior has been described in various researches (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 Fallian, 1996). Previous studies have shown evidence that tax knowledge has a very close relationship with taxpayers’ ability in understanding the laws and regulations of taxation, and their ability to comply (Singh and Bhupalan, 2001). A question that has been raised by previous researchers (Singh, 2003; Eriksen and Fallian, 1996; Harris, 1989) is whether enhancement in tax knowledge will increase tax compliance. Eriksen and Fallian (1996) and Lewis (1982) suggested that lack of fiscal knowledge correlates with negative attitudes towards taxation and therefore tax behavior 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 Fallian 1996) and thus, this will in turn increase compliance and reduce inclination to evade taxes. Therefore, following Eriksen and Fallian (1996) and Lewis (1982), the following hypothesis was developed in relation to Stage 2:

H1: Tax knowledge is positively associated with attitude towards tax compliance behavior (Equations 1 and 2).

Equations 3 and 4 describe the relationship between tax knowledge and tax compliance to direct and hypothetical questions respectively.

\[
TCDIR_i = \alpha + \beta_1TNRES_i + \beta_2TNEMPLOY_i + \beta_3TNDIVINT_i + \beta_4TNPERSONREL_i + \beta_5TNCHILDREL_i + \beta_6TNREB_i + \beta_7TNAWARE_i + \beta_8TNTOTAL_i + \varepsilon_i \quad (Equation 1)
\]

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
- TNPERSONREL 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

\[
TCchyP = \alpha + \beta_1TNRES_i + \beta_2TNEMPLOY_i + \beta_3TNDIVINT_i + \beta_4TNPERSONREL_i + \beta_5TNCHILDREL_i + \beta_6TNREB_i + \beta_7TNAWARE_i + \beta_8TNTOTAL_i + \varepsilon_i \quad (Equation 2)
\]

Where:
Table 1. Results of stage 1: The levels of tax knowledge.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Findings (levels of knowledge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Most</td>
</tr>
<tr>
<td></td>
<td>Males</td>
</tr>
<tr>
<td>Age</td>
<td>Older taxpayers (more than 56 years old)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Malay</td>
</tr>
<tr>
<td>Income</td>
<td>Middle and high income ranged RM2,001 – 4,000 and RM 8,001 – 10,000</td>
</tr>
<tr>
<td>Location</td>
<td>Live in Kelantan</td>
</tr>
<tr>
<td>Attended tax course?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Findings (levels of knowledge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCHYP</td>
<td>Tax compliance score (hypothetical questions)</td>
</tr>
<tr>
<td>TCDIR</td>
<td>Tax compliance score (direct questions)</td>
</tr>
<tr>
<td>TNRES</td>
<td>Tax knowledge about responsibilities and rights</td>
</tr>
<tr>
<td>TNEMPL</td>
<td>Tax knowledge about employment income</td>
</tr>
<tr>
<td>TNDIV</td>
<td>Tax knowledge about dividend and interest</td>
</tr>
<tr>
<td>TNPERSR</td>
<td>Tax knowledge about personal relief</td>
</tr>
<tr>
<td>TNCHILD</td>
<td>Tax knowledge about child relief</td>
</tr>
<tr>
<td>TNPERS</td>
<td>Tax knowledge about rebates</td>
</tr>
<tr>
<td>TNAWARE</td>
<td>Tax knowledge about awareness offences, penalties and fines</td>
</tr>
<tr>
<td>TNTOTAL</td>
<td>Total tax knowledge score</td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

Stage 1: The levels of taxpayers’ knowledge - descriptive evidence

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. For Stage 1, the result suggested that the levels of tax knowledge were influenced by gender, ethnicity, income level, location and attending tax courses. Results also revealed that the most knowledgeable group of taxpayers were:

1) Males.
2) Malays (followed by Chinese and Indians).
3) Earned monthly income ranged RM 8,001 to 10,000 (£ 1,232 to 1,538) followed by RM 2,000 to 4,000 (£ 308 to 615).
4) Reside in north east of Peninsular Malaysia – Kelantan followed by Sabah/Labuan and Perlis/Kedah.
5) 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.

6) Older taxpayers aged more than 56 years old.

Table 1 summarizes the relationship between the research objectives and results of Stage 1.

Tax knowledge and tax compliance behavior

Table 2 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 = 0.347), TCHYP and TNCHILDREL (r = 0.182) and TCHYP and TNEMPL (r = 0.16). Correlations were also found (p<0.01) between TCDIR and TNCHILDREL (r =0.30), TCDIR and TNREB (r =0.237) and TCDIR and TNRES (r =0.15). Table 2 also gives evidence that independent and dependent variables were not all highly correlated (more than 0.8), hence, all dependent variables were included in the analysis.

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 3, 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, R² 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
Table 2. Stage 2: Pearson correlation ($r$) matrix for dependent and independent variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCHYP$^{40 : 60}$</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCDIR</td>
<td>-0.293**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNRES (B2)</td>
<td>-0.347**</td>
<td>0.150**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNEMPLOY (B3)</td>
<td>0.160**</td>
<td>0.028</td>
<td>-0.138**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNDIVINT (B4)</td>
<td>0.059</td>
<td>0.030</td>
<td>0.013</td>
<td>0.207**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNPERSREL (B5)</td>
<td>0.032</td>
<td>0.145**</td>
<td>0.059</td>
<td>0.145**</td>
<td>0.085**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNCHILDREL (B6)</td>
<td>-0.182**</td>
<td>0.300**</td>
<td>0.067*</td>
<td>-0.022</td>
<td>0.025</td>
<td>0.220**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNREB (B7)</td>
<td>-0.145**</td>
<td>0.237**</td>
<td>0.046</td>
<td>0.046</td>
<td>0.032</td>
<td>0.291**</td>
<td>0.445**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNAWARE (B8)</td>
<td>0.118**</td>
<td>0.054</td>
<td>-0.111**</td>
<td>0.125**</td>
<td>0.110**</td>
<td>0.152**</td>
<td>0.076*</td>
<td>0.134**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TNTOTAL (B1)</td>
<td>-0.034</td>
<td>0.258**</td>
<td>0.085**</td>
<td>0.453**</td>
<td>0.488**</td>
<td>0.620**</td>
<td>0.533**</td>
<td>0.536**</td>
<td>0.479**</td>
<td>1</td>
</tr>
</tbody>
</table>

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).

Table 3. Stepwise multiple regressions - tax knowledge and tax compliance direct questions (TCDIR).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>49.060</td>
<td>17.531</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6 – TNCHILDREL</td>
<td>0.413</td>
<td>5.327</td>
<td>0.000</td>
<td>0.677</td>
<td>1.478</td>
</tr>
<tr>
<td>B2 – TNRES</td>
<td>0.614</td>
<td>4.750</td>
<td>0.000</td>
<td>0.987</td>
<td>1.013</td>
</tr>
<tr>
<td>B7 – TNREB</td>
<td>0.314</td>
<td>2.756</td>
<td>0.006</td>
<td>0.670</td>
<td>1.493</td>
</tr>
<tr>
<td>B1 – TNTOTAL</td>
<td>0.067</td>
<td>2.510</td>
<td>0.012</td>
<td>0.593</td>
<td>1.687</td>
</tr>
</tbody>
</table>

Model fit:
- $R = 0.36$
- $R^2 = 0.13$
- Adjusted $R^2 = 0.126$
- Std. error $= 10.97$

The 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 multi-collinearity among the independent variables. Tolerance indexes were high between 0.59 and 0.99 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) It is calculated as 1 - $R^2$ (from each independent variable). Multi-collinearity exists when the tolerance value is low (the range is between 0 to 1) (Hair et al., 2006). Hair et al. (2006) suggested that common cut-off threshold is tolerance value 0.10 and thus VIF is 10.

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

Relationship between tax knowledge and tax compliance hypothetical questions ($TCHYP$)

In comparison to the previous results, these results indicate that independent variables that impact tax compliance behavior increased from four to five variables. It appears that knowledge about responsibilities, child
Table 4. Stepwise multiple regressions - tax knowledge and tax compliance hypothetical questions (TCHYP).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>23.184</td>
<td>22.901</td>
<td>0.000</td>
<td>0.963</td>
<td>1.038</td>
</tr>
<tr>
<td>B2 - TNRES</td>
<td>-0.532</td>
<td>-10.466</td>
<td>0.000</td>
<td>0.963</td>
<td>1.038</td>
</tr>
<tr>
<td>B6 - TNCILDREL</td>
<td>-0.119</td>
<td>-4.291</td>
<td>0.000</td>
<td>0.963</td>
<td>1.038</td>
</tr>
<tr>
<td>B3 - TNEMPLOY</td>
<td>0.106</td>
<td>4.028</td>
<td>0.000</td>
<td>0.963</td>
<td>1.038</td>
</tr>
<tr>
<td>B8 - TNAWARE</td>
<td>0.121</td>
<td>2.830</td>
<td>0.005</td>
<td>0.963</td>
<td>1.038</td>
</tr>
<tr>
<td>B7 - TNREB</td>
<td>-0.112</td>
<td>-2.757</td>
<td>0.006</td>
<td>0.963</td>
<td>1.038</td>
</tr>
</tbody>
</table>

Model fit:

- $R = 0.419$
- $R^2 = 0.176$
- Adjusted $R^2 = 0.172$
- Std. error = 4.24

Stage 2: Relationship between tax knowledge and compliance

Results suggest that tax knowledge had a significant impact on tax compliance both in direct and hypothetical questions, and consequently support the H2 hypothesis (**Tax knowledge is positively associated with attitude towards tax compliance behavior**). 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 behavior, thus, rejecting the null hypothesis.

Conclusions

Based on the analysis presented earlier, 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 indicated 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).

Previous studies have evidenced that tax knowledge is important in self assessment systems and the influence of knowledge on compliance behavior 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 (Mohamad Ali et al., 2007; Singh, 2003; Loo, 2006; Eriksen and Fallan, 1996; Harris, 1989), in other tax regimes, for example in Canada, 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).

In this study, Malaysia was chosen because a new self assessment system was introduced in 2004. Also, in particular conditions such as in Malaysia where it is a fact that it has significant cross cultural differences and is a complex multi-racial and multi-faith country, enables this research to contribute new evidence to the tax compliance literature in a unique developing country. This study hypothesized that ‘Tax knowledge is positively associated with attitudes towards tax compliance behavior. Results suggested that tax knowledge significantly affects tax compliance both in direct and hypothetical questions, consequently supporting H1. 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 behavior.

In line with Lewis (1982), Eriksen and Fallan (1996), Loo (2006) and Mohamad Ali et al. (2007), this result suggests that fiscal knowledge correlates with attitudes towards taxation and therefore, tax behavior can be improved by a better understanding of tax laws. ‘Tax attitudes can be improved through better tax knowledge’ (Eriksen and Fallan 1996) 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).

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. 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).

In line with McKerchar (2002) and Braithwaite et al. (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 Heady, 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).

REFERENCES


McBarnet D (2001). When compliance is not the solution but the problem: From changes in law to changes to attitude. Canberra: Australian National University, Centre for Tax System Integrity.


