

## Components of Tax Planning and Characteristics of Top Management Team (Komponen Perancangan Cukai dan Ciri-Ciri Pasukan Pengurusan Atasan)

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### ABSTRACT

*Tax planning activities can be detrimental to the welfare of a country's nations. Firms' tax planning strategies can be classified according to the activities' components, i.e. permanent, temporary and statutory tax rates differences. Upper echelons theory explains top management team (TMT) as corporate elite whose decisions can be predicted through its members' cognitive, value and perceptions. This study therefore attempts to examine the extent the characteristics of TMT members, in terms of age, tenure, education and gender, can explain tax planning strategies, consisting permanent, temporary and statutory tax rates differences. The sample is 216 Malaysian listed firms from 2008 to 2015. This study finds that tenure and education explain tax planning and permanent differences negatively. In contrast, tenure affects statutory tax rates differences positively. This study contributes to literature and practice by providing further evidence to support upper echelons theory in explaining the influence of TMT on tax strategies. This study also provides new evidence of tax strategies from a governance perspective. The findings suggest to the tax authority that TMT characteristics are additional factors to be considered in tax audit framework. The study also contributes to public by highlighting that TMT characteristics are useful to predict tax planning strategies.*

*Keywords: Tax planning; permanent differences; temporary differences; statutory tax rates differences; top management team*

### ABSTRAK

*Aktiviti perancangan cukai memberi kesan negatif kepada masyarakat sesebuah negara. Perancangan cukai korporat boleh diklasifikasikan mengikut komponen aktiviti tersebut iaitu perbezaan kekal, perbezaan sementara dan perbezaan kadar cukai berkanun. Teori upper echelons menerangkan bahawa pasukan pengurusan atasan (PPA) adalah elit korporat dan keputusan dibuat PPA boleh dijangka berdasarkan kognitif, nilai and persepsi ahli-ahli PPA. Justeru, kajian ini dilaksanakan untuk mengkaji sejauh mana ciri-ciri ahli PPA, iaitu umur, tempoh perkhidmatan, tahap pengajian dan jantina, dapat menerangkan strategi perancangan cukai yang terdiri daripada perbezaan kekal, perbezaan sementara dan perbezaan kadar cukai berkanun. Sampel kajian ini ialah 216 buah syarikat Malaysia yang tersenarai dari 2008 sehingga 2015. Dapatan kajian ini menunjukkan bahawa tempoh perkhidmatan dan tahap pengajian menerangkan perancangan cukai dan perbezaan kekal secara negatif. Walau bagaimanapun, tempoh perkhidmatan memberi kesan positif ke atas perbezaan kadar cukai berkanun. Kajian ini menyumbang kepada literatur dan praktikal melalui bukti yang menyokong teori upper echelons dalam menerangkan pengaruh PPA ke atas strategi cukai. Kajian ini juga mengetengahkan bukti baharu tentang strategi cukai daripada perspektif tadbir urus. Hasil kajian ini turut mencadangkan kepada pihak berkuasa percukaian bahawa ciri-ciri PPA adalah faktor tambahan yang perlu dipertimbangkan dalam rangka audit cukai. Kajian ini juga menyumbang kepada umum dengan menjelaskan bahawa ciri-ciri PPA adalah penting untuk menjangka strategi perancangan cukai syarikat.*

*Kata kunci: Perancangan cukai; perbezaan kekal; perbezaan sementara; perbezaan kadar cukai berkanun; pasukan pengurusan atasan*

### INTRODUCTION

Corporate taxation has consistently been the main contributor to the Malaysian government's direct taxation revenue, i.e. 57.9, 58.6, 52.3 percents of the total direct taxation respectively for 2016, 2015 and 2014 (IRBM, 2015; IRBM, 2016; IRBM, 2017a). Therefore, any corporate tax planning activities can reduce the government's tax collection and this can increase the country's tax gap. As there is an unclear line to separate the activities based on

their legality aspects and the spirit of the law, this study analyses tax planning without distinguishing the activities into avoidance and evasion. This is consistent with the assertion by researchers, regulators and professionals on the thin line to separate avoidance and evasion of which there are circumstances where what are acceptable by the taxpayers are, on the other hand, not acceptable by the authority (Neck, Wachter & Schneider 2012; Financial Times 2019; Ministry of Finance Malaysia 2019).

Tax gap is a term to explain the dispersion of tax actually collected from tax theoretically due. A large magnitude of a tax gap can subsequently and detrimentally affect public provisions. Malaysian current tax gap is at an alarming rate of 20 percent, which causes RM22.8 billion revenue loss to the government (New Straits Times 2017a). Similarly, the government has been serious in taking actions on firms that were identified to conduct tax avoidance, which together with the penalty can reinstate the government's revenue for additional more than RM2 billions (New Straits Times 2017b). Following this, the tax authority, Inland Revenue Board Malaysia (IRBM), has taken stern actions, including increasing the penalty from 45 percent to 100 percent of the undeclared income and revising the tax investigation scheme to include a scrutiny on a firm's governance (IRBM 2017b). The effects of tax planning are also detrimental to the development of domestic service of the country, in particular, when the tax planning spans cross-border transaction (The Malaysian Reserve 2017). Thus, it is important for the authority to identify firms' tax planning strategy when determining the action to combat tax planning to ensure effective remedial actions.

Theoretically, firms conduct tax planning due to its perceived benefits in terms of increased after-tax returns (Scholes & Wolfson 1992). However, consistent with "under-sheltering" puzzle arguments (Weisbach 2002), Malaysian public firms vary in their tax planning involvements (Abdul Wahab 2016). This signifies that there are other driving factors of firms' tax planning strategies, including characteristics of a firm top management team (TMT). The strategies of tax planning span different nature of tax saving, comprising permanent differences, temporary differences and statutory tax rates differences (Abdul Wahab & Holland 2015). Investigating the characteristics of TMT that can explain tax planning strategies is crucial to provide insights into preferences of tax planning strategies from a firm governance perspective. The available literature, however, is generally scarce in investigating the TMT's preference on varying types of tax planning strategies. Further, the evidence is also important to establish the extent of connection between Malaysian firms' tax planning and the TMT characteristics as the TMT members are those who set the tone at the top, which involves firms' tax position affairs. Thus, this study aims to investigate the extent the TMT characteristics, in terms of age, tenure, education and gender, can explain a firm's tax planning strategies, consisting strategies relating to permanent differences, temporary differences and statutory tax rates differences.

The sample of this study is 216 Bursa Malaysia public-listed firms from 2008 to 2015. Despite the existence of tax planning within non-listed firms, the sample of this study focuses on only listed firms as such firms are made mandatory by the Security Commission Malaysia to disclose the necessary data in annual report. The data includes tax and governance data which is not in machine readable format. In summary, this study finds TMT members' average firm tenure and education level explain firm tax planning engagement in a negative manner. In terms of tax planning components, while tenure and education level adversely affect permanent differences, the only TMT members' characteristic that can significantly affect statutory tax rates differences is the TMT tenure. Interestingly, the direction of the latter is positive, suggesting the preference towards tax planning through utilisation of multiple jurisdictions by members who possess higher education level. This study contributes to literature by providing further evidence on the relevance of upper echelons in taxation discipline. The findings of this study can be useful to the tax authority in gauging the priority areas of tax planning investigation and governance attributes that can relate to risks of tax planning. The findings can also be useful to shareholders in predicting firm tax planning engagement and strategies through the TMT demographic characteristics.

This paper proceeds as follows. The next section reviews relevant literature and discusses the hypothesis development. This is followed by research design and the section on results and discussions. Further tests are discussed in the fifth section and finally, the conclusion section concludes the paper.

## TAX PLANNING, ITS COMPONENTS AND TOP MANAGEMENT TEAM CHARACTERISTICS

Previous taxation studies refer book tax differences (BTD) as a proxy to explain a firm's tax planning level (Abdul Wahab & Holland 2015; Goh et al. 2016; Chen et al. 2019). BTD explain tax planning by way of dispersions of taxable income from accounting income. Segregating BTD into their components provides indications on preference of tax planning strategies, comprising permanent differences-, temporary differences- and statutory tax rates differences-related strategies (Abdul Wahab & Holland 2012; Abdul Wahab 2016).

Permanent differences signify a firm's strategic tax planning activities as the component exhibits a portion of BTD that is permanent in nature, hence implying permanent tax benefits (Goh et al. 2016; Zhou 2016). At an extreme positive continuum, permanent differences provide indications of aggressive tax planning (Gaertner, Laplante & Lynch 2016). On the contrary, temporary differences indicate reversal strategies of tax planning but despite its temporary nature, temporary differences component of tax planning is found by Gaertner et al. (2016) as significantly related to tax shelters in a parallel direction. This can be associated with persistent temporary differences, as persistency in temporary differences can generate permanent temporary tax savings because the reversed temporary differences are consistently replaced by the newly generated temporary differences across time (Abdul Wahab & Holland 2015). The nature of the third component of tax planning, i.e. statutory tax rates differences, is relatively similar to that of permanent differences except that the component is specifically applicable only to firms with foreign operations. Differences of statutory tax rates between countries result in statutory tax rates differences of which their magnitudes signify the extent the taxable income differs when the firms are subject to foreign jurisdiction's taxation and when it is otherwise. Tax planning through utilisations of various tax jurisdictions can cause base erosion and profit shifting.

As tax planning decision-making strategically involves secrecy and obfuscation, a firm preference on the extent of the activities can be unclear, hence, research on demographics of top management team (TMT) to explain the extent of a firm's involvement in tax planning is crucial. For example, Abdul Wahab, Holland and Soobaroyen (2015) find UK CEOs who were internally promoted engage in lesser tax planning than the external originated CEOs. Thus, a preference of tax planning strategies can be a reflection of firms' management attributes. Upper echelons (Hambrick & Mason 1984) is the theoretical stance of taxation studies that associate managerial characteristic perspectives with firm tax planning levels. Upper echelons theory predicts TMT demographic characteristics as the contributing factors to the decisions made by directors due to the influence of values, cognitive abilities and perceptions of TMT members (Carpenter, Geletkanyez & Sanders 2004). The demographic characteristics include age, tenure, education and gender. However, the evidence in linking TMT with tax planning strategies is limited as the available literature tends to relate the characteristics to other management decision-making contexts, for example, competitiveness (Mediavilla, Errasti & Mendibil 2015; Prasad & Martens 2015), ownership settings (Hoffmann, Wulf & Stubner 2016; Cirillo et al. 2017) and internationalisation agenda (Schmid, Wurster & Dauth 2015; Carney et al. 2017). Despite the strategic aspect of the focus of attention, the lack of attention on the effects of the characteristics on tax planning induces bias in deriving the conclusive evidence on factors that lead to firm strategic decision making as taxation is an area that is evident to be considered by top management when setting the tone at the top (Dyreg, Hanlon & Maydew 2010).

Age has been argued by literature to be negatively associated with risk preference, and positively with organisational inertia and status quo (Hambrick & Mason 1984). As age implies maturity (Tanikawa, Kim & Jung 2017), older directors possess more ability to predict benefits and risks of strategic decisions. However, more recent previous literature find inconclusive evidence on the relationship between age and several aspects of firm performance, for example, acquisition performance (Field & Mkrтчyan 2016) and corporate social responsibility performance (Harjoto, Laksmana & Lee 2015). Studies in investigating the effects of age of TMT members on the extent of firm tax planning activities, however, are limited. Positively, TMT with older directors may engage in more tax planning activities due to the members' cognitive ability in predicting tax planning benefits that can offset potential risks of the activities. However, as older directors are generally risk-averse (Hambrick & Mason 1984), the direction of the relationship between age and tax planning can be in a contradictory manner as older directors are expected to be associated with lesser tax planning engagement due to the activities' inherent risks, including reputational risks. Therefore, it is hypothesised in a non-directional form that there is a significant relationship between age of TMT members and the extent of firm tax planning activities as in hypothesis 1:

H<sub>1</sub> Top management team members' age is significantly related to firm tax planning level.

As tax planning consists of three components of BTD, i.e. permanent differences, temporary differences and statutory tax rates differences, investigating the observed relationship between TMT members' age and tax planning based on each component will allow for further analysis on the sources of the relationship between TMT members' age and the aggregated tax planning. Thus, hypothesis 1 is further examined for the effects of age on permanent differences, temporary differences and statutory tax rates differences through hypothesis 1a, hypothesis 1b and hypothesis 1c respectively:

H<sub>1a</sub> Top management team members' age is significantly related to firm permanent differences of tax planning.

H<sub>1b</sub> Top management team members' age is significantly related to firm temporary differences of tax planning.

H<sub>1c</sub> Top management team members' age is significantly related to firm statutory tax rates differences of tax planning.

Tenure of TMT members explains experience of the directors in serving the firms, implying directors' cognitive ability and knowledge on firms' resources and capacity. Long-tenured TMT members are associated by literature with value and cognitive bases for decision-making process which, upon implementation, can influence firm performance (Carpenter et al. 2004). As short-tenured directors are associated with difficulties in coordination due to frequent changes of appointments (Abdul Wahab et al. 2015), TMTs with short-tenured members are expected to have limited ability to gauge potential tax planning benefits and firms resources to offset potential risks, resulting into lesser engagement in tax planning activities. Although long-tenured TMT members can positively contribute to firm performance due to their knowledge and experience on firm internal affairs (Wertheim, Neill & Clements 2016), long-tenured directors can underperform firm achievements due to organisational inertia and status quo (Finkelstein & Hambrick 1990). Applying the mixed findings on the relationship between director tenure and firm performance in tax planning context, the direction of the TMT members' tenure and firm tax planning level can also be equivocal. TMT with long- (short-) tenured members may involve in more (lesser) tax planning as they have more (lesser) firm-specific knowledge and experience to gauge potential benefits of tax planning at the current level of firm resources. The direction, however, can be in the contrary as long- (short-) tenured TMT members are associated with higher (lower) extents of status quo and organisational inertia, hence demonstrating reluctance (keenness) to increased tax planning engagements. Therefore, it is hypothesised in a non-directional form that there is a significant relationship between tenure of TMT members and the extent of firm tax planning activities as in hypothesis 2:

H<sub>2</sub> Top management team members' tenure is significantly related to firm tax planning level.

To examine the sources of the observed relationship between tenure and tax planning, hypothesis 2 is further tested for the relationship between tenure and tax planning components, i.e. permanent differences, temporary differences and statutory tax rates differences. Hypothesis 2 is therefore subsequently examined for the effects of tenure on each component through hypothesis 2a, hypothesis 2b and hypothesis 2c respectively:

H<sub>2a</sub> Top management team members' tenure is significantly related to firm permanent differences of tax planning.

H<sub>2b</sub> Top management team members' tenure is significantly related to firm temporary differences of tax planning.

H<sub>2c</sub> Top management team members' tenure is significantly related to firm statutory tax rates differences of tax planning.

Education has been established to favourably affect several aspects of performance both at firm and personal levels (for example Wai 2013; Kuo, Wang & Yeh 2018) as education level reflects cognitive ability, creativity and talents (Bantel & Jackson 1989). Linking education and tax planning, however, can be more complicated as the relationship is depending on the perceived benefits and the costs of the activities (Scholes & Wolfson 1992). Positively, TMTs with educated members are expected to reap the benefits of tax planning, resulting into higher level of BTD. However, as tax planning entails tax and non-tax costs, the education level can adversely affect tax planning as educated directors can be more reluctant to conduct activities that can jeopardise firms' current and future reputations. Thus, education level of TMT members is expected to have the ability to explain firm tax planning engagement as hypothesised by hypothesis 3:

H<sub>3</sub> Top management team members' education level is significantly related to firm tax planning level.

Similar to hypothesis 1 and 2 on age and tenure of TMT members respectively, the relationship between TMT members' educational level and firm tax planning can be further examined based on permanent differences, temporary differences and statutory tax rates differences. This is hypothesised by hypothesis 2a, hypothesis 2b and hypothesis 2c for the relationship of TMT members' education level with permanent differences, temporary differences and statutory tax rates differences respectively:

H<sub>3a</sub> Top management team members' education level is significantly related to firm permanent differences of tax planning.

- H<sub>3b</sub> Top management team members' education level is significantly related to firm temporary differences of tax planning.
- H<sub>3c</sub> Top management team members' education level is significantly related to firm statutory tax rates differences of tax planning.

Gender has long been studied in psychology and also management disciplines (for example, Beyer 1990; Lundeberg, Fox & Puncoschar 1994; Barber & Odean 2001). Males vary than females in terms of their positive attitude towards risks (Watson & Robinson 2003), less autocratic and more negotiation in their leadership approach (Cuadrado et al. 2012). Although female directors are argued to be risk-averse, as their academic performance outweighs the males' performance following the former's high self-control (Duckworth et al. 2015), female TMT members can be related to high preference towards tax planning engagement due to their confidence level in reaping the benefits of the activities after considering that the potential risks of the activities can be controlled. Following the cautions and meticulous analyses, the successfulness of tax planning strategy implementations can then lead to increased firm after-tax returns. This is consistent with previous literature's findings on positive effects of female CEOs on firm financial performance (Jeong & Harrison 2017). As there are contradicting arguments on the influence of gender on performance, hypothesis 4 is predicting a significant relationship between TMT members' gender and firm tax planning level in a non-directional form:

- H<sub>4</sub> Top management team members' gender is significantly related to firm tax planning level.

Hypothesis 4 is examining the relationship between gender and aggregated tax planning. Investigating the observed relationship between TMT members' gender and components of tax planning, i.e. permanent differences, temporary differences and statutory tax rates differences, will allow for further analysis on the sources of the relationship between TMT members' gender and tax planning as observed through hypothesis 4. Thus, hypothesis 4 is further examined for the effects of gender on permanent differences, temporary differences and statutory tax rates differences through hypothesis 4a, hypothesis 4b and hypothesis 4c respectively:

- H<sub>4a</sub> Top management team members' gender is significantly related to firm permanent differences of tax planning.
- H<sub>4b</sub> Top management team members' gender is significantly related to firm temporary differences of tax planning.
- H<sub>4c</sub> Top management team members' gender is significantly related to firm statutory tax rates differences of tax planning.

In summary, upper echelons theorises that a firm strategic decision can be a reflection of its TMT members' characteristics. The evidence of the relationship in tax planning context, however, is generally scarce, both at aggregated and disaggregated tax planning measure. This study, therefore, attempts to investigate the extent TMT members' demographic characteristics can explain tax planning and its components.

## RESEARCH DESIGN

### MODELS AND MEASUREMENTS

This study defines TMT members as the Chairman and executive directors who sit on firms' board of directors. The baseline model in examining the relationship between TMT members' age, tenure, education and gender and tax planning is illustrated by model 1.

$$TP_{it} = \alpha_0 + \alpha_1 TAGE_{it} + \alpha_2 TTEN_{it} + \alpha_3 TEDU_{it} + \alpha_4 TGEN_{it} + \alpha_{4+j} \sum_j CONT_{it}^j + \varepsilon_{it} \quad (\text{Model 1})$$

Where  $TP$  is firm tax planning level measured using  $BTD$  (Abdul Wahab & Holland 2015).  $BTD$  is calculated using the dispersion of taxable income from book income. While the latter is directly available from firm annual report, the former is derived by grossing up the firm current tax expense plus the  $STRD$  disclosed in tax reconciliation. Thus, the larger the  $BTD$ , the lower the firm's tax expense, which can be inferred as higher tax planning.  $TAGE$  is TMT members' average age,  $TEDU$  is TMT members' average education level and  $TGEN$  is proportions of female members in TMT.  $CONT$  is a series of control variables that can explain firms' tax affairs and position, consisting capital intensity ( $CAPINT$ ) (Gaertner 2014; Lanis & Richardson 2015), earnings management

(*EM*) (Gaertner, 2014; Watson, 2015), firm leverage (*LEV*) (McGuire, Wang & Wilson 2014; Dyreng, Hoopes & Wilde 2016), auditor (*AUD*) (Donohoe & Robert Knechel, 2014), the extend of foreign sales (*FS*) (McGuire et al. 2014; Abdul Wahab 2016), and industry classification (*IND*) (Armstrong et al. 2015; Gallemore & Labro 2015).

To investigate the extent the characteristics affect tax planning components, *TP* in model 1 is subsequently replaced by series of disaggregated tax planning (*TPCOMP*), consisting permanent differences (*PD*), temporary differences (*TD*) and statutory tax rates differences (*STRD*) (Abdul Wahab & Holland 2015) as in model 2. Similar to *BTD*, a large *PD* indicates a high extent of tax planning through *PD* strategies of which the book and tax income differences are irreversible and also signify strategic tax planning activities, for example through classification of earnings. In contrast to *PD*, a large *TD* explains a high level of temporary tax saving secured by the firms, for example through the rate differences between the depreciation and capital allowance, of which the differences will be reversed in future years. The third component, *STRD*, explains tax planning by way of utilising the tax rate differences or treatment between domestic country and foreign countries.

$$\sum_1^3 TPCOMP_{it} = \alpha_0 + \alpha_1 TAGE_{it} + \alpha_2 TTEN_{it} + \alpha_3 TEDU_{it} + \alpha_4 TGEN_{it} + \alpha_{4+j} \sum_j CONT_{it}^j + \varepsilon_{it} \quad (\text{Model 2})$$

To control for size effects, all continuous variables (*TP*, *PD*, *TD*, *STRD*, *EM* and *LEV*) are deflated by total assets. Table 1 presents the variable measurements.

TABLE 1. Variable Measurements

Variable	Description	Measurement
TP	Tax planning	$BTD = (\text{Pre-tax income} - (\text{current tax expense/local statutory tax rates}) + \text{disclosed STRD}) / \text{Total assets}$
PD	Permanent differences	$(BTD - TD) / \text{Total assets}$
TD	Temporary differences	$(\text{Deferred tax expense/ local statutory tax rates}) / \text{Total assets}$
STRD	Statutory tax rates differences	$\text{Disclosed STRD} / \text{Total assets}$
TAGE	Age of TMT members	Average age of TMT members (in years)
TTEN	Tenure of TMT members	Average firm tenure of TMT members (in months)
TEDU	Education of TMT members	Average TMT members' education level of which education level is coded as 4 for PhD and equivalent, 3 for Master degree or equivalent, 2 for Bachelor degree or equivalent, 1 for certificate (both professional and academic) and 0 for others.
TGEN	Gender of TMT members	Percentage of female members in TMT
CAPINT	Capital intensity	$\text{Gross plant and machinery} / \text{Total assets}$
EM	Earnings management	$(\text{Pre-tax income} - \text{cash flow from operation}) / \text{Total assets}$
LEV	Leverage	$\text{Long-term debt} / \text{Total assets}$
AUD	Auditor	Coded as 1 if big-four and 0 otherwise
FS	Foreign sales	$\text{Percentage of foreign sales over total assets}$
IND	Industry	Coded as 1 for each industry and 0 otherwise

#### SAMPLE SELECTION AND DATA SOURCE

The sample of this study is drawn from firms listed in the main market of Bursa Malaysia from 2008 to 2015. Year 2008 is to control for bias of Malaysian corporate tax reform from imputation to single tier system. Year 2015 is to reflect the most current available data during the period of data collection. All firms listed throughout the period are included for initial sampling process purpose. This includes firms across industries and ownership. The sample is then filtered for persistent profit-makers to control for strong ability to conduct tax planning. Non-financial firms are also filtered from the sample to control for bias in reporting regulation. These result in 2,704 firm-years. To control for bias of reporting period, 40 firms (320 firm-years) that changed their accounting year-end during the sample period are excluded from the sample. Firms with missing annual reports (40 firm-years) are also filtered to ensure balanced panel data, resulting into 2,344 firm-years. To control for bias of non-recurring items, 36 firms (288 firm-

years) are filtered due to extreme effective tax rates ( $ETR > |1|$ ). The initial sample of this study is 257 firms (2,056 firm-years).

As tax and governance data is not in machine readable format, it is manually collected from firm annual reports. Other financial data is collected from *Thomson Reuters Datastream*. Industry classification data is collected from Bursa Malaysia.

## RESULTS AND DISCUSSIONS

### DIAGNOSTIC TESTS

Prior to the data analysis, the data is tested for outliers, multicollinearity and heteroscedasticity. To test for the outliers, the influential firm-years are identified using studentized residual  $> |2|$  and subsequently filtered from the initial sample (Hair et al. 2006). This results in 1,728 firm-years (216 firms). The data is further diagnosed for multicollinearity using Pearson correlation, variance inflation factor (VIF) and condition indices (Belsley, Kuh & Welsch 1980; Hair et al. 2006). Table 2 presents the bivariate correlation coefficients between the variables, in which all coefficients are below the threshold level of 0.9, indicating insignificant initial multicollinearity. This is in line with the VIF values of model 1 and 2 of which the mean overall VIF is 1.56 with the highest VIF component of 3.56 for industrial product industry. The condition indices and variance-decomposition proportions, however, indicate significant multicollinearity between *TAGE* and constant of the models, i.e. condition indices of 36.61 and variance-decomposition proportions of 0.95.<sup>1</sup> Following this, *TAGE* is centred using its mean value (Aiken & West 1991). To test for heteroscedasticity, the models are analysed using White and Breusch-Pagan tests (Breusch & Pagan 1979; White 1980). The heteroscedasticity tests are significant at 1% level as disclosed in table 4. The models are therefore estimated using robust standard errors.

### DESCRIPTIVE STATISTICS

The sample of this study is from nine industries with majority of the firms in industrial product (27.78 percent) and followed by trading and services at 22.69 percent. Slightly lower than trading and services is consumer product at 20.83 percent and this is followed by properties at 12.96 percent. The distribution of the sample across the remaining industries is (in descending order) plantation (7.87 percent), construction (6.02 percent), infrastructure (0.93 percent), technology (0.46 percent) and hotel (0.46 percent).

Table 3 presents the descriptive statistics of the sample. The mean of *TP* is positive, signifying lower taxable income compared to accounting income. The sources of *TP* are mainly contributed by firstly, *PD*, secondly, *TD* and finally, *STRD*, suggesting that Malaysian listed firms utilise *PD* relatively more than other *TP* components. With a minimum and maximum of 37 years and 90 years respectively, the average age of the TMT members is 57 years. The exit tenure of the TMT members is 10 years and this can be up to a maximum of 34 years. With a standard deviation lesser than 1, the average TMT members' education level is at bachelor degree or equivalent level. In terms of gender composition, averagely, the TMTs of the sample are composed of nine percent of female directors, suggesting male directors are the majority across the TMTs. From the financial perspective, on average, 24 percent of the firm total assets are plant and machinery. With a positive *EM*, the firms involve in earnings management through accruals. The firms finance eight percent of their total assets through long-term debts. The extent of the firms' involvement in international transactions is at 19 percent of the total sales.

TABLE 2. Pearson Correlation

	TP	PD	TD	STRD	TAGE	TTEN	TEDU	TGEN	CAPINT	EM	LEV	AUD	FS
TP	1.0000												
PD	0.7766***	1.0000											
TD	0.3885***	-0.2789***	1.0000										
STRD	0.2508***	0.2767***	-0.0224	1.0000									
TAGE	-0.0227	-0.0458*	0.0324	0.0094	1.0000								
TTEN	-0.0618**	-0.0722***	0.0114	0.0490**	0.3150***	1.0000							
TEDU	-0.0686***	-0.0627***	-0.0129	-0.0021	-0.0217	-0.1254***	1.0000						
TGEN	-0.0098	-0.0059	-0.0062	0.0081	-0.1467***	0.0091	-0.1556***	1.0000					
CAPINT	0.2263***	0.2195***	0.0239	0.0238	0.0131	0.0072	0.0269	-0.0548**	1.0000				
EM	-0.0011	-0.0300	0.0422*	-0.0124	-0.0257	-0.0462*	-0.0122	-0.0106	-0.2938***	1.0000			
LEV	-0.0414*	-0.0857***	0.0623***	-0.0052	0.0135	-0.0504**	0.1341***	-0.0125	-0.1317***	0.0427*	1.0000		
AUD	-0.0012	0.0112	-0.0183	-0.0411*	0.1150***	-0.0428*	0.1434***	-0.0433*	0.1041***	-0.0548**	0.1274***	1.0000	
FS	0.1536***	0.1775***	-0.0255	0.3661***	-0.0068	0.0077	-0.0016	-0.0438*	0.1585***	-0.0993***	-0.0080	-0.0945***	1.0000

\*\*\*, \*\*, \* denote significance at 1%, 5%, 10% respectively.

TABLE 3. Descriptive statistics

	n=1,728	Mean	Minimum	Maximum	Standard deviation
TP		0.0055	-0.0700	0.1170	0.0256
PD		0.0050	-0.1432	0.1187	0.0246
TD		0.0005	-0.1216	0.1329	0.0168
STRD		0.0005	-0.0037	0.0171	0.0019
TAGE		56.9825	37.0000	90.0000	6.2820
TTEN		122.8286	4.0000	405.0000	75.8507
TEDU		1.6065	0.0000	4.0000	0.8148
TGEN		8.6122	0.0000	100.0000	17.1030
CAPINT		0.2449	0.0000	1.9685	0.2445
EM		0.0105	-0.2820	0.3690	0.0664
LEV		0.0808	0.0000	0.6452	0.1100
FS		19.3354	0.0000	100.0000	25.8025



MULTIVARIATE RESULTS

Table 4 presents the multivariate results of models 1 and 2. Columns 2, 3, 4, and 5 are the results when the independent variables are regressed on *TP*, *PD*, *TD* and *STRD* respectively. This study finds limited evidence of the significant relationship between TMT members' average age (*TAGE*) and *TP*, and all *TP* components.  $H_1$ ,  $H_{1a}$ ,  $H_{1b}$  and  $H_{1c}$  are therefore not supported.

In terms of TMT's average tenure, *TEN* is found significant in explaining the variations of *TP* in a negative manner, suggesting TMT with higher (lesser) firm tenure is likely to engage in lesser (higher) tax planning. The result supports  $H_2$  in predicting a significant relationship between tenure and tax planning level. This could be due to ineffective coordination between short-tenured directors (Abdul Wahab et al. 2015) to agree on the gauged risks of the activities, thus showing preference on tax planning despite the activities' inherent risks. As long-tenured directors are associated with value and cognitive bases in a firm-specific manner (Carpenter et al. 2004; Wertheim et al. 2016), the knowledge on firm resources that the directors have reduces their preference towards tax planning. Therefore, the longer the TMT members serve the board, the lesser the firm tax planning activities are. This relationship can be further explained by *PD* and *STRD* of which both *TP* components are found significantly related to *TEN*.  $H_{2a}$  and  $H_{2c}$  are therefore supported. The source of the relationship between *TEN* and *TP* is predominantly contributed by *PD* of which higher (lesser) tenure is associated with lesser (higher) permanent differences components of tax planning. *STRD*, however, reduces the strength of the negative relationship between *TEN* and *TP*. This signifies the preference of long-tenured directors to strategise the firm tax planning through multiple jurisdictions compared to other components. In contrast, despite permanent tax saving generated through *PD* (Goh et al. 2016), long-tenured directors are inclined to reduce tax planning through permanent differences strategies. This could be due to the association of extreme *PD* with tax aggressiveness (Gaertner et al. 2016), hence any significant engagement in *PD* can attract authorities' stringent scrutiny.

The relationship between education level and tax planning is also similar to the *TEN-TP* relationship. *TEDU* is found significantly related to *TP* and *PD* in a negative manner. The results therefore support  $H_3$  and  $H_{3a}$ . As tax planning involves obfuscations and secrecy, educated directors can accurately gauge the risks of the activities as they possess cognitive ability, creativity and talents (Bantel & Jackson 1989) to analyse the offsets between tax and non-tax costs of the activities, and their perceived benefits. They therefore show less preference towards tax planning activities. Although *PD* can generate permanent tax savings (Goh et al. 2016), educated TMT members are also cautious in strategising tax planning activities through permanent differences as the activities can negatively affect shareholders' valuation (Abdul Wahab & Holland 2012) which in turn can detrimentally affect firm reputation. Thus, educated directors are less likely to agree on the decisions to increase firm after-tax returns through tax planning activities. In terms of TMT's gender composition, this study finds limited evidence to support  $H_4$   $H_{4a}$   $H_{4b}$  and  $H_{4c}$  in predicting the relationship between gender and tax planning, and its components. This could be due to limited proportion of female members compared to the male members.

Across industries, it can be concluded that, except *TD* and *STRD*, the firms' involvement in specific industry explains tax planning strategies differently. At the aggregate level, firms in industrial product, hotel and technology, and plantation indicate positive relationship with *TP*. At the disaggregated level, all industries, except infrastructure, engage in tax planning through *TD*. At the other extreme, all industries are not significant in their relationships with *STRD*. In terms of *PD*, despite their significant relationships with the permanent tax saving strategy, the nature of the relationships differs. In specific, firms in trading and services are inclined to have lesser *TD* while firms in hotel and technology tend to prefer higher *TD* as their tax planning strategy. The differences in the industries' relationships with tax planning level and its component are in line with industry policy hypothesis of tax burden (Derashid & Zhang 2003).<sup>2</sup>

TABLE 4. Multivariate results

Dependant variable:	TP	PD	TD	STRD
TAGE	-0.0001 <i>-0.25</i>	-0.0002 <i>-1.02</i>	0.0001 <i>1.05</i>	-0.0001 <i>-0.99</i>
TTEN	-0.0001** <i>-2.21</i>	-0.0001** <i>-2.87</i>	0.0001 <i>0.41</i>	0.0001* <i>1.82</i>
TEDU	-0.0031** <i>-2.27</i>	-0.0028** <i>-2.28</i>	-0.0002 <i>-0.31</i>	0.0001 <i>0.26</i>
TGEN	-0.0001 <i>-0.39</i>	-0.0001 <i>-0.66</i>	-0.0001 <i>-0.03</i>	-0.0001 <i>-0.99</i>
CAPINT	0.0182*** <i>3.92</i>	0.0164*** <i>3.76</i>	0.0026 <i>1.06</i>	0.0005 <i>1.05</i>
EM	0.0335*** <i>3.34</i>	0.0188** <i>2.19</i>	0.0145 <i>1.49</i>	0.0001 <i>0.02</i>
LEV	0.0160 <i>1.23</i>	0.0005 <i>0.06</i>	0.0141 <i>1.53</i>	-0.0005 <i>-0.92</i>
AUD	-0.0003 <i>-0.13</i>	0.0015 <i>0.83</i>	-0.0016 <i>-1.42</i>	0.0001 <i>0.93</i>
FS	0.0001 <i>1.51</i>	0.0001*** <i>3.54</i>	-0.0001** <i>-2.35</i>	0.0001*** <i>3.68</i>
Constant	0.0038 <i>0.37</i>	0.0062 <i>1.69</i>	-0.0049 <i>-1.61</i>	-0.0003 <i>-0.92</i>
Industry dummy	Yes	Yes	Yes	Yes
Wald Chi-squared	91.99***	103.13***	40.06***	56.90***
R-squared	26.22%	27.83%	7.88%	28.36%
Breuch-Pagan	18.17***	24.52***	14.04***	259.89***
White	253.02***	170.79***	248.06***	419.37***
n	1728	1728	1728	1728

\*\*\*, \*\*, \* denote significance at 1%, 5% and 10% respectively.  
 Italicised figures are Huber-White adjusted t-statistics.

#### FURTHER TESTS

The results presented by Table 4 are from panel regressions using random effects. To test the sensitivity of the results with firm-fixed effects, the models are re-estimated with firm-fixed effects specification. The initial result of *TAGE* and *TEDU* of model 1 are robust upon the specification. *TTEN*, however, is no longer significant, suggesting that TMT members' tenure is sensitive when the sample is individually clustered. The results when the independent variables are regressed on the components of TP (*PD*, *TD* and *STRD*) using firm-fixed effects are qualitatively similar to the initial results, suggesting that the initial results derived from model 2 are robust upon the regression specifications.

To test for the sensitivity of the initial results upon year-fixed effects, models 1 and 2 are re-estimated with inclusions of year dummies. Except *TAGE*, the results are sensitive upon the re-estimation when the independent variables are regressed on *TP* of which *TTEN* and *TEDU* are no longer significant. In terms of the components, the initial results of model 2 hold for *TD* and *STRD*. Except *TTEN*, the results upon year-fixed effects are also qualitatively similar to the initial results.

In addition, the initial results are also tested for endogeneity using one year lag of *TEDU* and *TGEN* as the instrumental variables.<sup>3</sup> The results from the estimations indicate qualitatively similar results with the initial results for both model 1 and model 2. This suggests that the results are robust upon the re-estimations.

To test the robustness of the initial results based on the magnitude of TMT age and education, the models are re-estimated using a split sample of *TAGE* and *TEDU* based on their mean values, i.e. 57 years and bachelor degree, respectively. The proportion of TMT members with 57 years or more is equivalent to the other counterpart, i.e. 50 percent. The proportion of TMT members' education, however, is skewed towards "lower than bachelor degree" category, i.e. 58 percent. Results of *TAGE* are qualitatively similar to the initial results except for the sub-sample of TMT members that possess lower education background and the sub-sample of "lower than average age". Results of *TAGE* for TMT members that possess lower education background is now negatively related with *TP*, and positively related with *TD* within the sub-sample of "lower than average age". Results on *TGEN* are qualitatively similar with the initial results within the sub-sample of "lower than bachelor degree" for *TP* and *PD*, within the sub-sample of "lower than average age" for *PD*, and in all cases for *TD*. In terms of *TEDU*, the initial results hold across all sub-samples for *TP* and its components. Similarly, for *TGEN*, the initial results hold across all sub-samples for *TP* and its components, except within age sub-samples of which *TGEN* is now significant and negative in explaining the relationship between *TGEN* and *TP* within both sub-samples, and *TD* within the "higher than average age" sub-sample. This indicates that the magnitudes of age and education level, to some extent, play important role in affecting tax planning strategies.<sup>4</sup>

## CONCLUSION

This study investigates the extent the firm tax planning strategies can be explained by TMT characteristics. In specific, TMT members' age, tenure, education level and gender are hypothesised as to have significant relationships with tax planning and its components, comprising permanent differences, temporary differences and statutory tax rates differences. While TMT members' tenure and education level adversely affect firm tax planning engagement, at the disaggregated level, the evidence holds only on permanent differences, signifying the firms' preferences on tax strategies through permanent nature of tax saving when the TMT members are lower in their tenure and education level. Tax planning through statutory tax rates differences, in contrast, increases when the tenure is longer.

The findings of this study provide further evidence on tax planning and its aggregated measure from the governance perspective to the corporate governance and taxation literature, in particular, in providing further evidence to support the relevance of a governance theory, i.e. upper echelons, in taxation area. Practically, the findings contribute to the policy by providing evidence to the tax authority on potentials of top management characteristics in predicting firm tax planning strategies and preference. In particular, the findings could assist the authority by prioritising their tax audit and investigation on firms with a high level of TMT tenure because such firms tend to conduct tax planning through multiple jurisdictions to reap the tax benefits when the tax treatments differ across jurisdictions. The authority may also focus on firms with low level of TMT education and tenure when investigating the cases related to strategic tax planning captured by *PD*, which the magnitude implies the levels of firms' irreversible tax saving. In addition to the authority, firm shareholders and future investors can also be benefited from the findings in assessing firm potential reputational risks due to tax affairs through TMT characteristics. As this study focuses only on large quoted firm, generalising the findings to other categories of firms can be limited. As a way forward, future studies can be conducted by replicating this study using different settings, including at institutional levels and using multiple ownership settings, for example, family, government and foreign owned firms, to provide further evidence on the extent the tax planning strategies differ between countries and across ownership continuums.

## ENDNOTES

- <sup>1</sup> The threshold level of the condition indices is 30 with variance-decomposition proportions of at least 0.50 (Belsley et al., 1980).
- <sup>2</sup> In the interest of economy, the results are not tabulated but are available from authors upon request
- <sup>3</sup> The instruments are determined based on Hansen-Sargan overidentification statistics of which only lag variables of *EDU* and *GEN* satisfy the hypothesis with Chi-squared of 34.67 and p-value of 0.26.
- <sup>4</sup> The tabulated results are available from the author upon request.

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