Tax climate manipulation on individual tax behavioural intentions

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Tax climate manipulation on individual tax behavioural intentions

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Abstract

Purpose – The purpose of this paper is to extend the slippery slope framework by exploring different dimensions of compliance quality and tax minimisation under different tax climate manipulation by groups.
Design/methodology/approach – The authors run a random assignment of tax climate manipulations through questionnaire with 301 usable data collected from the full-time postgraduate students, employed individuals and self-employed individuals. Manipulation check and results are generated via multivariate analysis of variance.
Findings – The results confirm the biggest impact of synergistic climate on voluntary compliance, and small to medium impact of antagonistic climate on tax evasion across three groups.
Research limitations/implications – The manipulation of this research is constrained with two treatments in addition to the common pitfall of social desired responses of self-report.
Practical implications – Theoretically, this study empirically explores tax minimisation dimensions and provides new insights that only illegal tax minimisation is at maximum under the prevailing negative antagonistic climate, but not for legal tax minimisation. Second, the effect of tax climate represented by trust and power on enforced compliance is minimal, as compared to the strong effect of positive synergistic climate on voluntary compliance. As for policy implications, possible guidelines and interventions are outlined to policy makers which would lead to a better quality of compliance behaviour.
Originality/value – This study operationalises and manipulates tax climate from perceptions of trust, legitimate power and coercive power. It also further affirms the prior inconsistent findings in respect of tax behavioural intentions due to sampling group and cultural differences.
Keywords Compliance quality, Legality, Tax climate, Tax minimization
Paper type Research paper

Introduction

Tax is for national development by means of the infrastructure, disaster relief, security, education and so forth (Poesoro, 2015). In fact, Song and Yarbrough (1978) defined tax as "a compulsory levy by the government on the people's income or wealth without a direct quid pro". However, for decades, tax non-compliance which includes aggressive tax avoidance has remained a worldwide problem (Payne and Raiborn, 2018).

The classic economic models (i.e. A–S Model by Allingham and Sandmo, 1972; Theory of Crime by Becker, 1968) theorise that tax compliance behaviour depends on expected utility and authorities' deterrent actions, such as probability of detection and fines. However, the implications of pure economic factors are narrow (Alm *et al.*, 2012), neglecting social norms (Glaeser *et al.*, 2003) and other socio-psychological factors (Kirchler *et al.*, 2008). For instance,

an individual's criminal behaviour is not solely due to his/her individual decision under risk, but also depends on his/her peer's criminal behaviour, which is known as social influences. In the article "The theory of tax evasion: a retrospective view" written by Sandmo (2005) three decades after the A–S Model, he agreed that one's tax evasion behaviour is affected by the perceived tax behaviour of others. If tax evasion behaviour is perceived as being socially acceptable, then the subjective probability of detection will decrease with lower tax compliance. More crucially, Frey and Torgler (2007) commented that people are in fact more honest than the deterrence model expects.

In view of these gaps, the slippery slope framework was integrated with the fundamental economic and socio-psychological elements (Kirchler, 2007; Kirchler *et al.*, 2008). It recommends that tax collection can be increased by enhancing trust in authorities and power of authorities, with different types of compliance quality, either voluntary or by force. In fact, the "slippery slope" implies the reciprocal influences of trust and power (Kirchler *et al.*, 2014). Thus, perceptions vary depending on different dimensions of tax climate, either synergistic or antagonistic (Wahl *et al.*, 2010). A synergistic tax climate prevails when citizens trust that the authorities wisely manage the redistribution of tax collections for the benefit of the community. As a result, they trust and perceive the power exercised by the authorities, especially in deterring under-declared tax as legitimate instead of coercive. Conversely, an antagonistic climate prevails when low trust is maintained between the citizens and the authorities. Consequently, subjective probability of detection exists as citizens tend to be calculative and opportunistic. Furthermore, they perceive that the enforcement actions carried out by the authorities as coercive. As a result, they are prone to minimise their tax liabilities by exploiting tax law strategically (Kirchler *et al.*, 2008). However, it is rather ambiguous in the literature as to whether strategic tax behaviour or tax minimisation behaviour refers to tax avoidance, tax evasion or even tax mitigation. Therefore, this study endeavours to examine the effect of tax climate on tax minimisation in addition to compliance quality, which comprises legal tax mitigation and illegal avoidance and evasion. In addition to the treatments of tax climate manipulation, this study examines the previously unexplored relationship and processes by justifying ground predictions with existing model.

On top of that, despite the development of the slippery slope framework has led to critical clarification in achieving compliance and reducing illegal minimisation, mixed findings were concluded in the past empirical studies due to various sample groups (Wahl *et al.*, 2010; Kogler *et al.*, 2013) and cultural differences (Chong *et al.*, 2016; Richardson, 2008). Hence, this study conducts an experimental survey to three different sample groups, comprising the postgraduate student, employed and self-employed individuals.

This paper is organised as follows: tax literature focusses on the slippery slope framework and its past empirical studies are elaborated. Then, the experimental survey design is explained, followed by the results and implication. Finally, limitations of this study are revealed with future recommendations.

Related literature and empirical support
Tax climate and compliance quality
This study mainly adapts Kirchler *et al.*'s (2008) pioneering work of the slippery slope framework and operationalises trust and power dimensions into tax climate. A synergistic climate is operationalised from perceived trust in the authorities and the perceived legitimate power of the authorities (Kirchler *et al.*, 2008). Under such a prevailing tax climate, trust is mutually tied between the citizens and the authorities: taxpayers trust that their authorities are fair in discharging their responsibilities at one end, while the authorities trust that the taxpayers are honest in their tax affairs at the other end (Kirchler *et al.*, 2014). In addition, the power exercised by authorities is perceived to be legitimate with confidence that the minority tax evaders will be penalised for the good cause for the society (Kastlunger *et al.*, 2013).

Conversely, an antagonistic climate is operationalised from perceived untrustworthy authorities and the perceived coercive power of the authorities (Kirchler *et al.*, 2008). Under such a prevailing tax climate, there is low mutual trust between the citizens and the authorities: taxpayers do not trust that the authorities would act upon the community interest at large, while the authorities employ the "command and control" approach, which is costly to monitor taxpayers (Kirchler *et al.*, 2014). Therefore, taxpayers perceive negatively that the authorities execute their deterrent power mainly to coerce them (Kirchler *et al.*, 2008).

It has been empirically proven that trust increases compliance across countries regardless of different cultural backgrounds (Murphy, 2004; Cummings *et al.*, 2006; Richardson, 2008; Hammar *et al.*, 2009). However, the compliance quality of the relationship was unknown. Also, in Malaysia, Sia (2008), Hamid (2014) and Chong *et al.* (2016) found that power increases tax compliance, but whether it was legitimate or coercive power was not tested. However, in Australia, Devos (2008) found that power is only significant in increasing non-evaders' compliance behaviour, and it is insignificant to the tax evaders' behaviour. In addition, Slemrod *et al.* (2001) concluded that coercive power significantly increases compliance for middle-income taxpayers and below, but significantly reduces compliance for the high-income taxpayers.

According to the slippery slope framework, tax compliance quality differs under different prevailing tax climates (Lozza and Castiglioni, 2018). The positive synergistic tax climate, which is mainly formed by perceived trust in the authorities and the legitimate power of the authorities, attracts voluntary tax compliance, whereby antagonistic tax climate, which is mainly formed by the perceived untrustworthiness in the authorities and the coercive power of the authorities, attracts enforced tax compliance (Gangl *et al.*, 2015). Voluntary compliance refers to the positive tax compliance behaviour, where taxpayers declare their income honestly, file their tax returns on time and make accurate tax payments willingly. On the other hand, enforced compliance refers to the negative tax compliance behaviour, where taxpayers are forced to fulfil their tax obligations in order to prevent themselves from the deterrence actions imposed by the authorities (Kirchler *et al.*, 2014). In fact, the slippery slope framework adapted two motivational postures from Braithwaite's (1995) motivational posturing theory. Voluntary compliance was operationalised by the commitment posture, whilst enforced compliance was operationalised via the resistance posture.

Tax climate and minimisation behaviour

Tax evasion is commonly studied in the tax literature. It arises due to corruption (McGee, 2012), dissatisfaction with the government (Andreoni *et al.*, 1998), low trust (Richardson, 2008) and coercive power (Frey, 1992). Similarly, McGee (1999) posited that low legitimate power due to the lack of a suitable mechanism for tax collection, and low trust in government increases tax evasion. This is mainly because citizens feel that it is not their moral obligation to pay taxes (McGee, 2012). Interestingly, Devos (2008) found that power is not significant in reducing tax evasion for tax evaders, but significant in reducing evasion for non-evaders.

Based on the slippery slope framework, a synergistic or antagonistic climate would lead to different levels of strategic tax behaviour in addition to voluntary and enforced compliance. Specifically, an antagonistic tax climate leads substantial tax minimisation (Lisi, 2012). This is because citizens do not perceive trust in authorities, while power exercised by the authorities is negatively regarded as coercive (Kirchler *et al.*, 2008). As mentioned, the slippery slope framework is lacking in terms of addressing strategic tax behaviour to minimise tax. Therefore, this study attempts to probe the tax minimisation dimensions, namely, tax mitigation, tax avoidance and tax evasion. Note that tax evasion is absolutely illegal, while tax mitigation is completely legal. On the other hand, tax avoidance, which used to lie between the grey areas of legality, is considered to be illegal in this study (Payne and Raiborn, 2018; Bătrâncea *et al.*, 2014).

As opposed to the view that it is the citizens' right to avoid but not to evade tax which is illegal and unacceptable (Chan *et al.*, 2016), tax avoidance, which is also known as aggressive tax planning, is no longer deemed legal under the general anti-avoidance rules (GAAR). GAAR have been implemented in countries including but not limited to Malaysia in 1967, New Zealand in 1974, Australia in 1981, Singapore in 1988 and China in 2008. It must be noted that both tax avoidance and evasion reduce the government revenue in unintended or unfavourable ways. On the contrary, tax mitigation is legal within the tax system to enhance the country's competitiveness, and ultimately attract more revenue in the long run (Yusof *et al.*, 2014; Dittmer, 2012). Furthermore, tax mitigation is granted by the government as a concession for individual taxpayers to spend their disposable income on those aspects that are beneficial to them and society. According to the UK tax jurisdiction, a tax minimisation transaction is considered as tax avoidance if it is an artificial transaction that bends the rules. In that it is not within the spirit of law, thus it is considered as non-compliant (HM Revenue and Customs, 2018). In Malaysia's tax jurisdiction, such a transaction would be disregarded or varied at the discretion of the Director General (Income Tax Act, 1967, Section 140 (1)). Conversely, if a transaction is with commercial substance, it is completely legal and regarded as tax mitigation (Naban and Kumar, 2016). From both academic and practical aspects, it is therefore interesting to explore empirically whether tax climate affects each tax minimisation dimension.

Prior empirical studies
Upon the development of the slippery slope framework (Kirchler, 2007; Kirchler *et al.*, 2008), empirical research pertaining to the framework has been considerable. The first empirical study was conducted in the USA by Wahl *et al.* (2010) via a laboratory experiment on 120 students who were randomly assigned to four hypothetical tax environments. This was followed by a replication through an online survey of 127 self-employed taxpayers. Specifically, these experimental subjects and survey respondents were randomly assigned to one of the four hypothetical tax environments in a fictitious country called Varosia, with different indications of low or high trust and power: trustworthy and powerful; untrustworthy and powerless; untrustworthy and powerful; and trustworthy and unpowerful. Both research designs found similar results in that tax payment has a positive relationship with power and trust. Additionally, enforced tax compliance can be significantly achieved with high power and low trust. In terms of voluntary compliance, it has a positive relationship with both power and trust in the experimental design. However, the participants in the survey setting, who were self-employed taxpayers instead of students who were involved in the preceding experiment, achieved the highest voluntary compliance with low power and high trust. The study was extended to test the strategic tax behaviour of the survey respondents who were experienced taxpayers. It was found that there are significant interactions between trust and power, while strategic tax behaviour increases with high power and low trust. An important implication observed from the study of Wahl *et al.* (2010) is that the student sample and the self-employed sample perceive power differently. Nevertheless, it should be noted that the dimensions of power and strategic tax behaviour were not established at that point in time. The power dimensions were later operationalised and tested in the study of Kastlunger *et al.* (2013), while strategic tax behaviour, which is known as tax minimisation behaviour, will be tested in this current study.

The same year in 2010, Kirchler and Wahl conducted a survey and an experiment with four scales of inventory in Austria: voluntary tax compliance, enforced compliance, tax avoidance and tax evasion. In Part 1, they appointed a market research institute to collect data via an online questionnaire to a representative pool of self-employed taxpayers totalling 310 respondents. The results showed that voluntary compliance is not correlated with enforced compliance, and is negatively correlated with tax evasion. Second, enforced

compliance has no relationship with tax evasion, but a positive relationship with tax avoidance. Third, tax evasion has no relationship with tax avoidance.

In Part 2, they replicated the inventory scales targeting 60 social science students. They were instructed to imagine themselves as self-employed who paid taxes and responded to the same questions. It was concluded that compliant behaviour is positively related to intended voluntary compliance and negatively related to intended tax avoidance and evasion; and otherwise for non-compliant behaviour. Besides that, enforced compliance is insignificantly related to both compliant and non-compliant behaviour. Again, this study ascertained different perceptions between the student and self-employed samples.

Kogler et al. (2013) empirically tested the slippery slope framework across four countries, namely, Austria, Romania, Hungary and Russia. Besides including real geographical and demographic information, they measured the perceived similarity between the fictitious country, Varosia, and the respondents' respective home country. The results were consistent with the experiment of Wahl et al. (2010), except for the strategic tax behaviour. In the experiment conducted by Kogler et al. (2013), low trust low power led to strategic taxpaying instead of low trust high power in the preceding experiment. This was probably due to the different samples used. The preceding experiment with self-employed taxpayers was likely to reflect more reliable results than the latter one using university students with minimal experience of paying taxes.

Also, Kastlunger et al. (2013) further developed the framework to include legitimate and coercive power dimensions. An online questionnaire was conducted on 389 self-employed and entrepreneurs in three Italian regions. They concluded that voluntary tax compliance is positively related to trust and legitimate power, whilst negatively related to tax evasion and coercive power. Apart from that, enforced compliance is led by coercive power and leads to increased tax evasion, yet could be positively influenced by legitimate power to a better quality.

Next Kasper et al. (2015) adapted the formal framework by applying an experimental survey to 487 employed individuals in Austria. Interestingly, trust and power manipulations were modified in accordance with the relevant excerpts from newspaper coverage on tax issues in Austria. It was concluded that trust is perceived in the high trust and high power conditions, whereas power is merely perceived in the high power condition. In line with Wahl et al.'s (2010) studies, high trust and high power increase the intended tax compliance.

Same year in 2015, Kaplanoglou and Rapanos applied the framework by conducting an experimental survey to 320 undergraduate students in Greece. It was found that power does not significantly related to voluntary compliance under the high trust condition, while power significantly reduces voluntary compliance under the low trust condition. Although power dimensions were not tested in this research, the plausible explanation is that the former is perceived as legitimate, and the latter is perceived as coercive (Kastlunger et al., 2013). Note that, Kaplanoglou and Rapanos (2015) classified strategic tax behaviour as "light tax evasion" and "heavy tax evasion" in their studies. They confirmed that trust significantly increases voluntary compliance and decreases strategic tax behaviour.

Recently, Lozza and Castiglioni (2018) compared tax climate between Italy and the Canton of Ticino (Switzerland) through a lexicographical analysis with T-LAB on the tax-related newspaper articles in between 2010 and 2016. It was confirmed that antagonistic climate prevails in Italy, while synergistic climate prevails in the Canton of Ticino. An important finding detected via the text analysis was the shift from the discussions on tax system to tax enforcement strategies in the Italian news starting from 2015. Unfortunately, antagonistic climate persists in that such power is perceived as coercive.

A great progress of the slippery slope studies is evidenced in the west since the first empirical study in 2010. Although there are growing empirical studies, these are very limited in Malaysia with inconsistent findings. With regard to that, it deserves more attention and robust empirical studies. In fact, Chong et al. (2016) adapted the framework via a survey

questionnaire of 340 respondents comprising university students, employed and self-employed individuals. They found that both trust and power increase voluntary compliance and enforced compliance. However, dimensions of power were not investigated in their study. Later, Faizal *et al.* (2017) conducted a survey of 214 academicians with the power dimensions. They discovered inconsistent findings that neither the coercive nor legitimate power was significant to the compliance quality. In addition, they confirmed that trust increased voluntary compliance, yet it was not tested on enforced compliance. To add on, Choo *et al.* (2016) from the UK had empirical proven significant differences among groups. They discovered that the self-employed group was not responsive towards enforcement strategies. Conversely, the employed group was with a slight significant positive reaction, while the student group was with a very significant positive reaction. Therefore, this research is motivated to study different sample groups for better insights and inferences. Despite that, this study attempts to simplify the treatments of trust and power into a single tax climate manipulation which could be distinguished more easily among the targeted survey participants. In short, the following research question is explored:

RQ1. Does tax climate have an impact on compliance quality and minimisation behaviour across groups?

Methodology
In that taxpayers' data are kept strictly confidential to the external stakeholders including academic researchers due to the sensitive nature of tax affairs (Loo *et al.*, 2010), it was not possible to randomly access the tax registrants with or without obligations to pay tax. More crucially, as revealed by the tax authorities, only a 7 per cent minority in Malaysia are paying taxes, and it is supposed that there should be more from the 32m population which remains unknown and undetected (*New Straits Times*, 2017). Nevertheless, the issue of random sampling of taxpayers should not be a major concern in this study that focusses on individual tax behavioural intentions. It is argued that tax intentions can be reasonably reflected via probing both non-taxpayers and taxpayers' perceptions. A non-taxpayer can be a tax registrant or a non-registrant who has not exceeded the tax bracket to pay tax; or a citizen who is out of the labour force, such as retiree; or a citizen who does not declare income which is illegal, especially for the one who performs contractual works with cash considerations. The above possible non-taxpayers being identified are indeed influential to their peers who are taxpayers. Thus, it is very important to include them in research to explain tax behaviour. Furthermore, it is common to conduct tax behavioural study with university students (Kogler *et al.*, 2013; Kaplanoglou and Rapanos, 2015; Chong *et al.*, 2016). Therefore, quota sampling was employed in this study with three groups, comprising the full-time postgraduate student, employed individuals and self-employed individuals. Self-employed group in particular comprises business owners of the small and medium enterprises in Malaysia.

The data collection exercise of this study was carried out in the public and private universities, as well as commercial and business centres located in Klang Valley from mid-June 2017 to mid-December 2017. The experimental treatments adapted from the slippery slope framework were randomly assigned throughout the distributions of survey questionnaires. The data collection phase ended when 301 usable samples had been successfully collected out of 1,344 surveys distributed. Briefly, with 22 per cent response rate, 100 usable data were collected from the self-employed and employed group, respectively ($n_{synergistic} = 50$; $n_{antagonistic} = 50$), and 101 usable data were collected from the postgraduate group ($n_{synergistic} = 50$; $n_{antagonistic} = 51$).

Initially, survey respondents were instructed to imagine that they were working and paying tax in a fictitious country, Varosia, in which the tax climate was manipulated. Experiment treatments as mentioned below outline the tax climate treatments in accordance

with real geographical and demographic information. Based on the tax climate manipulated, respondents were required to choose the closest answer that describes their perception about the fictitious country, followed by their perceptions of compliance quality and minimisation behavioural intentions.

Experiment Treatment 1
Please read the following description of a country:

In the last census of population in December 2016, Varosia had 30m inhabitants and the territory of Varosia occupies $330,000 \text{ km}^2$.

Since Varosia's autonomy, it has been marked with a high political stability and a democratic government.

The government enjoys good reputation which can be evidenced from the opinion polls that 70 per cent of the citizens are satisfied with the current government.

Varosia's legislation is transparent and the government offers the opportunity of free counselling on judicial subjects and tax issues in the information centres. Furthermore, Varosia's tax authorities are very service oriented and interested in supporting Varosia's citizens.

The budget expenditures of the state are traceable for Varosia's citizens, because they are regularly informed about the use of tax money. In an opinion poll in October 2016, 78 per cent of Varosia's citizens indicated to have the impression that their tax money is used reasonably.

Besides that, little tax money is embezzled by politicians. According to an international corruption index (CPI), Varosia is one of the countries with the lowest perceived corruption.

All these factors cause the citizens of Varosia to trust their government a lot.

On the other hand, the prosecution of illegal tax evaders is very effective with qualified tax inspectors. This is because the tax legislation is clear for the government to conduct audits on its citizens and therewith to chase tax evaders.

Therefore, many of the committed tax offences can be detected. Moreover, the fines for illegal tax evasion are very severe in Varosia.

Experiment Treatment 2
Please read the following description of a country:

In the last census of population in December 2016, Varosia had 30m inhabitants and the territory of Varosia occupies $330,000 \text{ km}^2$.

Since Varosia's autonomy, it has been marked with a low political stability and an oligarchic (authority of few) government.

The government has bad reputation which can be evidenced from the opinion polls that 70 per cent of the citizens are not satisfied with the current government.

Varosia's legislation is not transparent and the government offers little opportunity of free counselling on judicial subjects and tax issues in the information centres. Furthermore, Varosia's tax authorities are generally not service oriented and are not interested in supporting Varosia's citizens.

The budget expenditures of the state are not traceable for Varosia's citizens, because they are not regularly informed about the use of tax money. In an opinion poll in October 2016, 78 per cent of Varosia's citizens indicated to have the impression that their tax money is not used reasonably.

Besides that, a lot of tax money is embezzled by politicians. According to an international corruption index (CPI), Varosia is one of the countries with the highest perceived corruption.

All these factors cause the citizens of Varosia to trust their government a little.

On the other hand, tax law in Varosia is ambiguous, thus, tax audits are ineffectively carried out on taxpayers on random basis instead of targeting on potential tax evaders.

"Cop-and-robber" approach is adapted by the tax inspectors with very high probability of detection and severe penalty even on unintentional errors.

All these factors cause the citizens of Varosia to perceive their government as very powerful.

As the tax climate manipulation in this study is formulated as an independent variable, manipulation checks are necessary to ensure that a specific treatment represents an independent variable. According to the conceptual definition in the previous section, a synergistic climate (i.e. Experiment Treatment 1) is derived from high trust, high legitimate power and low coercive power, while an antagonistic climate (i.e. Experiment Treatment 2) is derived from low trust, high coercive power and low legitimate power. Specifically, nine statements were in the form of six-point Likert scale on trust in authorities, legitimate and coercive power of authorities – adapted from Kastlunger *et al.* (2013). Similarly, compliance quality dimensions were adapted from Kastlunger *et al.* (2013), which originated from Wahl *et al.* (2010), while minimisation dimensions were adapted from Kirchler and Wahl (2010). Specifically, ten statements were in the form of five-point Likert scale on tax mitigation, tax avoidance and tax evasion, followed by nine statements in the same form on voluntary and enforced compliance.

Results and implication
Manipulation check
A one-way between-groups multivariate analysis of variance (MANOVA) using SPSS was carried out for tax climate manipulation check. The independent variable was tax climate, with the means of manipulation check items for trust, legitimate power and coercive power set as dependent variables. There was a statistically significant difference between synergistic climate and antagonistic climate for the combined manipulation check variables, $F(3, 297) = 400.722$, $p < 0.001$; $\lambda = 0.198$; $\eta^2 = 0.802$. When the results for the dependent variables were considered separately, all manipulation check variables reach statistical significance, being: trust, $F(1, 299) = 1,154.794$, $p < 0.001$, $\eta^2 = 0.794$; legitimate power, $F(1, 299) = 303.446$, $p < 0.001$, $\eta^2 = 0.504$; coercive power, $F(1, 299) = 130.574$, $p < 0.001$, $\eta^2 = 0.304$. An inspection of the mean scores indicated that synergistic climate reported higher levels of perceived trust ($M = 4.967$, SD = 0.750) and perceived legitimate power ($M = 4.813$, SD = 0.868) than antagonistic climate ($M_{trust} = 1.874$, $SD_{trust} = 0.827$; $M_{legitimate\ power} = 2.804$, $SD_{legitimate\ power} = 1.117$). Conversely, antagonistic climate reported higher levels of perceived coercive power ($M = 4.129$, SD = 1.268) than synergistic climate ($M = 2.520$, SD = 1.173).

Tax climate, compliance quality and minimisation behaviour by groups
Followed by the tax climate manipulation check, a MANOVA was performed to explore the effects of tax climate on compliance quality dimensions and tax minimisation dimensions by groups. Tax climate was set as an independent variable, whereas voluntary compliance, enforced compliance, tax mitigation, tax avoidance and tax evasion were set as dependent variables. There were statistically significant differences between synergistic climate and antagonistic climate for the combined manipulation check variables for the postgraduate group, $F(5, 95) = 8.900$, $p < 0.001$; $\lambda = 0.681$; $\eta^2 = 0.319$; employed group, $F(5, 94) = 30.698$, $p < 0.001$; $\lambda = 0.380$; $\eta^2 = 0.620$; and the self-employed group, $F(5, 94) = 19.611$, $p < 0.001$; $\lambda = 0.489$; $\eta^2 = 0.511$. When the results for the dependent variables were considered separately, dependent variables reaching the statistical significance varied among groups (refer to Table I). A further inspection of the descriptive statistics of dependent variables by tax climate and groups is listed in Table II. Along the discussions of the tests of between-subject effects via MANOVA, the relevant mean scores (M) and standard deviations (SD) will be reported.

For the postgraduate group, there were significant differences between synergistic climate and antagonistic climate on voluntary compliance, $F(1, 99) = 36.807$, $p < 0.001$, $\eta^2 = 0.271$; enforced compliance, $F(1, 99) = 5.005$, $p = 0.028$, $\eta^2 = 0.048$; and tax evasion, $F(1, 99) = 5.151$, $p = 0.025$, $\eta^2 = 0.049$. Specifically, synergistic climate had significantly higher voluntary compliance ($M = 4.029$, SD $= 0.748$) and enforced compliance ($M = 3.920$, SD $= 0.917$), whereas antagonistic climate had a significantly higher tax evasion behavioural intention ($M = 3.373$, SD $= 1.232$).

For the employed group, there were significant differences between synergistic climate and antagonistic climate on voluntary compliance, $F(1, 98) = 137.413$, $p < 0.001$, $\eta^2 = 0.584$; tax avoidance, $F(1, 98) = 19.820$, $p < 0.001$, $\eta^2 = 0.168$; and tax evasion, $F(1, 98) = 15.971$, $p < 0.001$, $\eta^2 = 0.140$. An inspection of mean scores indicated that synergistic climate reported a much higher level of voluntary compliance ($M = 4.116$, SD $= 0.686$), whereas antagonistic climate reported a higher levels of tax avoidance ($M = 4.000$, SD $= 1.061$) and tax evasion ($M = 3.700$, SD $= 1.080$).

Similarly, for the self-employed group, there were significant differences between synergistic climate and antagonistic climate on voluntary compliance, $F(1, 98) = 92.342$, $p < 0.001$, $\eta^2 = 0.485$; tax avoidance, $F(1, 98) = 5.364$, $p = 0.023$, $\eta^2 = 0.052$; and tax evasion, $F(1, 98) = 8.825$, $p = 0.004$, $\eta^2 = 0.083$. As expected, voluntary compliance was at maximum ($M = 4.180$, SD $= 0.600$) under the prevailing synergistic climate, while tax avoidance ($M = 3.747$, SD $= 0.900$) and tax evasion ($M = 3.600$, SD $= 0.999$) were at maximum in the antagonistic climate.

| | Postgraduate | | | Employed | | | Self-Employed | | |
	$F(1, 99)$	p-value	η^2	$F(1, 98)$	p-value	η^2	$F(1, 98)$	p-value	η^2
Voluntary compliance	36.807	0.000	0.271	137.413	0.000	0.584	92.342	0.000	0.485
Enforced compliance	5.005	0.028	0.048	0.028	0.868	0.000	0.201	0.655	0.002
Tax mitigation	3.815	0.054	0.037	0.395	0.531	0.004	0.784	0.378	0.008
Tax avoidance	2.754	0.100	0.027	19.820	0.000	0.168	5.364	0.023	0.052
Tax evasion	5.151	0.025	0.049	15.971	0.000	0.140	8.825	0.004	0.083

Table I.
MANOVA by groups

| | | Survey ($n = 301$) | | | | | |
| | | Postgraduate ($n = 101$) | | Employed ($n = 100$) | | Self-employed ($n = 100$) | |
Dependent variable	Tax climate	Mean	SD	Mean	SD	Mean	SD
Voluntary compliance	Synergistic	4.029	0.748	4.116	0.686	4.180	0.600
	Antagonistic	2.918	1.063	2.196	0.933	2.604	0.993
Enforced compliance	Synergistic	3.920	0.917	3.480	1.149	3.687	0.979
	Antagonistic	3.451	1.172	3.440	1.244	3.593	1.101
Tax mitigation	Synergistic	4.020	0.869	4.010	0.901	3.860	0.857
	Antagonistic	3.647	1.041	3.890	1.007	3.700	0.948
Tax avoidance	Synergistic	3.193	1.125	3.040	1.096	3.240	1.258
	Antagonistic	3.582	1.224	4.000	1.061	3.747	0.900
Tax evasion	Synergistic	2.833	1.153	2.833	1.088	2.987	1.065
	Antagonistic	3.373	1.232	3.700	1.080	3.600	0.999
		$n_{\text{synergistic}} = 50$		$n_{\text{synergistic}} = 50$		$n_{\text{synergistic}} = 50$	
		$n_{\text{antagonistic}} = 51$		$n_{\text{antagonistic}} = 50$		$n_{\text{antagonistic}} = 50$	

Table II.
Descriptive statistics of dependent variables by tax climate and groups

Implication
Partial η^2, which explains the percentage of variance, is mainly used for the following discussion (Pallant, 2013). Small effect size is considered to be achieved when η^2 reaches 1 per cent but less than 6 per cent, whereas a medium size is achieved when η^2 is between 6 and 13.8 per cent. Hence, η^2 of 13.8 per cent and above indicates a large effect size.

To summarise, synergistic climate of the postgraduate group had a large positive effect on voluntary compliance ($\eta^2 = 27$ per cent) and a small positive effect on enforced compliance ($\eta^2 = 5$ per cent). On the other hand, antagonistic climate had a small positive effect on tax evasion ($\eta^2 = 5$ per cent). No significant effects of tax climate on tax mitigation and tax avoidance were detected. Next, for the employed group, synergistic climate had a large positive impact on voluntary compliance ($\eta^2 = 58$ per cent), followed by medium negative effects on tax avoidance ($\eta^2 = 17$ per cent) and tax evasion ($\eta^2 = 14$ per cent). Similarly, for the self-employed group, synergistic climate had a large positive impact on voluntary compliance ($\eta^2 = 49$ per cent), followed by a medium negative effect on tax evasion ($\eta^2 = 8$ per cent); and a small negative effect on avoidance ($\eta^2 = 5$ per cent), with no significant effect on enforced compliance and mitigation.

It is observed that there is no statistical significance between tax climate and tax mitigation across groups. It seems that the overall participants are either having limited knowledge and understanding on tax mitigation, or that the intention of tax mitigation is not very much depending on the prevailing climate. Second, tax climate only significantly affects enforced compliance among the full-time postgraduate students, but not for the employed and self-employed groups. Third, the postgraduate group demonstrates the least effects of relationships between variables as compared to the other two groups.

Overall, the full-time postgraduate students were evidenced to possess higher compliance behaviour under the positive synergistic climate very much out of their willingness and intrinsic value (Kirchler *et al.*, 2008; Lozza and Castiglioni, 2018), plus a small extent of fear towards the legitimate power exercised by authorities, such as audit probability and fines (Choo *et al.*, 2016). Unexpectedly, their tax mitigation and avoidance behaviour are not affected by tax climate. Generally, postgraduate group differed from the other groups in terms of the education level and tax experience. On average, they were likely to be more highly educated than the employed and self-employed groups, yet less responsive to tax matters particularly on illegal tax minimisation. The plausible explanation is that, with the entitlement of tax relief on the tuition fees, these full-time postgraduate students were probably out of the tax bracket that requires the payment of tax, even with their minimal part-time income. In that they are not very much involved in filing tax return in reality, they are not sensitive to the legality issues across mitigation and avoidance as compared to tax evasion, which is obviously illegal. Hence, their tax avoidance behavioural intention is not depending on the perceived tax climate.

On the other hand, very similar findings have been proven for both employed and self-employed groups: it is within the prediction that a positive and trustworthy synergistic climate will lead to higher voluntary compliance with minimum illegal tax minimisation including tax avoidance and evasion behavioural intentions, or otherwise (Wahl *et al.*, 2010; Kogler *et al.*, 2013). These results are very much in line with Malaysian studies, in that Chong *et al.* (2016) and Faizal *et al.* (2017) confirmed that trust (in particular), which is the key component to form a synergistic climate, increases voluntary compliance. However, enforced compliance is not significantly affected by tax climate in contrast to the western empirical findings derived from the slippery slope framework (Wahl *et al.*, 2010; Kogler *et al.*, 2013; Kastlunger *et al.*, 2013). Having said that, it is relatively in line with a Malaysian study (Faizal *et al.*, 2017), where neither the coercive nor legitimate power affects enforced compliance. Furthermore, Choo *et al.* (2016) discovered that enforcement strategies are insignificant towards self-employed group, with slight positive influence to the employed

group, as well as a very significant impact on the student group. It seems that self-employed individuals are not bothered about complying forcefully in accordance with the tax climate they perceive. This could be due to the opportunities to conceal or under-declare income through manipulation of their business accounts. Therefore, ensuring legitimate power and fostering trust should be the focus of authorities in addition to stringent enforcements.

In conclusion, the inferences made in this study provide theoretical and policy implications. It reinforces the different reactions of tax behavioural intentions due to sampling group (Wahl *et al.*, 2010; Kogler *et al.*, 2013) and cultural differences (Chong *et al.*, 2016; Richardson, 2008). Notably, stringent enforcements are only effective in enhancing voluntary compliance and reducing illegal tax minimisation when trust is maintained, and power is perceived as legitimate. Tax authorities and the government should put more effort into building trust and acting fairly upon tax administration and the redistribution of tax collection with due care. In general, taxpayers should be commonly expected to comply via tax education with the main motive to support the democracy of the regulatory system. Restorative justice and deliberative democracy can be additional institutional arrangements.

Limitations and future recommendations

There are limitations in this study mainly due to several constraints. In the process of data collection, difficulties were faced in obtaining willing respondents, particularly from the self-employed individuals due to the perceived sensitivity of the subject matter. Furthermore, survey design with quota sampling method employed by this study might be deficient with social desired responses and generalisability issues. In addition, there were only two treatment manipulations that fixed the tax scenarios as either a synergistic or antagonistic climate. This might constrain other possible inferences of a behavioural study.

The following recommendations for future research are suggested to overcome these pitfalls: a laboratory experiment or a multi-method approach including both experimental and survey design can be considered to enhance internal validity and generalisability of the framework. More complex manipulations and even multi-level models are encouraged. Finally, a comparison of tax behavioural intentions across countries such as Malaysia and Singapore would be notable.

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