Taxpayers' attitudes toward tax compliance in developed and developing countries: a critical review of the literature

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Abstract

Objectives and contributions. The main objective of this research was to provide a review and synthesis of the published literature concerning taxpayers' attitudes toward tax compliance in developed and developing countries. This study has made an important contribution to tax attitude literature. In particular, this study has helped to clarify the relationship between determinants and tax compliance attitudes, highlighting gaps in the existing literature, thereby providing direction for future researchers. ***Findings.*** The findings of this study reveal that some determinants have significant impacts on tax compliance attitudes in both developed and developing countries such as socio-demographic factors (marital status and occupational status); economic factors (tax rate and probability of detection); reciprocity (trust in government and fairness); peer influence and culture. Some determinants have generally been found to have a positive correlation between tax compliance attitudes in developed countries such as age, gender and direct democracy; however, these determinants have been shown to have no significant effects on tax compliance attitudes in developing countries. Some determinants such as tax knowledge only influence tax compliance attitudes in developing countries. Determinants such as income level have produced very mixed results and remain uncertain in both developed and developing countries. Some determinants such as national pride and religiosity have been found to have a positive correlation with positive attitudes toward tax compliance in developed countries; however, there are lack of studies on the impact of these determinants in developing countries. ***Conclusion.*** The findings suggest that in order to improve the willingness of taxpayers to comply with tax laws, the tax authorities should monitor more closely those who may not perceive fairness and trustworthiness in the tax laws. Based on the analysis above, taxpayers who are singles and self-employed, those who have not been audited in the past, those whose perceive the tax rate as too high and those who comes from countries that have a higher level of uncertainty avoidance and a lower level of individualism should be the focus of efforts to improve their tax compliance attitudes. The results also suggest that to improve tax compliance attitudes the tax revenue authorities should target taxpayers those who are younger, male and do not perceive direct democracy in developed countries, as well as taxpayers who have a low level of tax knowledge in developing countries.

Keywords: tax compliance attitudes, tax morale, tax compliance, developed and developing countries

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Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning except where due acknowledgement is made in the acknowledgements."

Signed: ______________________________ (Jie, Ma)

Date: _______________

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Chapter 1 Introduction

1.1 Background

Tax noncompliance represents a prevalent phenomenon that happens in almost all societies and economic systems, whether they are developed or developing countries. The Internal Revenue Service (IRS) in the US estimated that the extent of the tax shortfall as a result of noncompliance was USD 458 billion of the gross tax gap for the tax year 2009-2010 time frame (IRS, 2016). The HM Revenue and Customs (HMRC) estimated the tax shortfall because of noncompliance was GBP 36 billion in the UK for the tax year 2014-2015, or 6.5 percent of the UK's theoretical tax liability (HMRC, 2017). Tax noncompliance is also severe in developing countries. In China, the losses of tax revenue by tax noncompliance are found to be significant. The Chinese State Administration of Taxation (SAT) estimated in 2009 that the tax shortfall as a result of noncompliance was USD 19.8 billion (Chan, Chau & Leung, 2013). Furthermore, the SAT reported that there were 212,000 tax audit/investigation cases in China, with USD 15.39 billion in taxes lost through noncompliance in 2011 (Chan el al., 2013).

Thus, the question of how to encourage taxpayers to comply with the tax laws has attracted the attention of both governments and academics in developed and developing countries. To answer this question, a number of scholars suggest that individual taxpayers' actual tax compliance decisions and behaviours are made based on their attitudes (Ajzen & Fishbein, 1980; Bobek & Hartfield, 2003; Chan Troutman & O' Bryan, 2000; Dornstein, 1976; Fischer, Wartick & Mark, 1992; Groenland & Veldhoven ,1983; Jackson & Milliron, 1986; Kinsey, 1986; Lewis, 1982; Orviska & Hudson, 2002; Porcano, 1988; Roberts, 1998; Spicer, 1974; Trivedi, Shehata & Lynn, 2003; Vogel, 1974; Wahlund,1992; Wallchutzky,1984, Yizhaki, 1974). Their findings strongly support the premise that an individual's tax compliance is significantly correlated with his/her attitude. In particular, a taxpayer who perceives tax compliance positively is expected to be more compliant compared to a taxpayer who judges tax compliance negatively. That is, a more positive attitude towards tax compliance encourages taxpayers to comply with the tax laws. Thus, a better understanding of taxpayers' attitudes is a key element in improving tax compliance.

1.2 Objective of this study and research questions

The objective of this research is to provide a review and synthesis of the published literature concerning taxpayers' attitudes toward tax compliance in developed and developing countries. In particular, this study collates the findings and identifies those areas most in need of research attention in the future. In order to achieve the research objective, the study investigates the following three main questions:

1. Why is the study of taxpayers' attitudes important?
2. What are the determinants of taxpayers' attitudes that influence tax compliance in developed and developing countries?
3. What are the methodological issues and limitations emerging from existing studies that focus on taxpayers' attitudes toward tax compliance?

1.3 Importance of this study

As shown in Tables 1 and 2, since 2000, there has been much studies done regarding tax compliance attitudes in both developed and developing countries. However, no comprenhensive review has been done since 2000 (Richardson & Sawyer 2001). Since technological advances have impacted significantly on tax compliance over last 15 years, therefore by building on prior literature reviews and the present study aims at filling this gap in the literature. In particular, an update of prior reviews provided in the current study is a valuable information for two main groups of people – first, policy makers and tax administrators; secondly, future researchers. In terms of policy makers and tax administrators, the findings of this research contribute to a better understanding of why taxpayers have positive/negative attitudes toward tax compliance; thus, this should then allow policy makers and tax administrators to improve tax compliance by identifying strategies which will improve taxpayers' compliance attitudes. In relation to future researchers, this review enables researchers to synthesize this topic so as to help them identify gaps in the existing literature and consider directions for future study.

1.4 The concept and definition of tax compliance

Tax compliance has always been a major issue for both developed and developing countries. The question is, what is the meaning of tax compliance? The exact meaning of tax compliance has been defined in many empirical studies (e.g., Alm, 1991; Jackson & Milliron, 1986; Kirchler, 2007); however, the definition of tax compliance is provided by Roth, Scholtz and Witte (1989) is one of the most commonly cited as follows:

> Compliance within reporting requirements means that the taxpayer files all required tax returns at the proper time and that the returns accurately report tax liability in accordance with the Internal Revenue Code, regulations and court decisions applicable at the time the return is filed. (p.142)

The study by McBarnet (2001) further distinguished between different forms of compliance. She drew an important distinction between taxpayers who voluntarily comply with the law and taxpayers who comply with the law because of enforcement activities. She then categorized taxpayers into three major groups: taxpayers who show committed compliance are those who are willing to pay taxes without complaint; taxpayer who show capitulated compliance are those who reluctantly pay taxes; and taxpayers who show creative compliance are those who seek to reduce taxes by taking advantage of opportunities to redefine income and deduct expenditures within the bracket of the law (McBarnet, 2001). That is, creative compliance involves cases where taxable income is designed without taking into consideration the spirit and purpose of the law, resulting in tax circumvention and tax flight, and ending in deliberately illegal actions, thereby defining the other pole of tax evasion (James & Alley, 2002)

Roth et al.'s (1989) definition of compliance is adopted for the purpose of this study. However, many of the studies selected for this research did not necessarily embrace this definition. Some of the studies failed to provide a definition of tax compliance at all, while other studies focused solely on creative compliance. This failure to adopt a standard definition of compliance across studies made it difficult for this study to synthesize the research findings, and may have partially contributed to some of the conflicting results found.

1.5 Overview of this study

This study is divided into six chapters, including the introduction. Chapter 2 identifies the research methods and process. Chapter 3 discusses why the study of tax attitude is important. In Chapter 4, the study reviews and discusses the recent findings on 15 determinants that influence taxpayers' attitudes toward tax compliance in developed and developing countries.

In Chapter 5, methodological issues in recent research are identified and discussed. The final chapter includes the limitations associated with this study, and provides a summary of the findings. In addition, suggestions are made concerning avenues for future study.

Chapter 2 Research Methodology

This chapter identifies the research method used in this study and then outlines the research process.

2.1 The research method

In order to achieve the objective of this research, the critical review method was adopted. The critical review method goes beyond the mapping and description of scoping or rapid reviews, to include “analysis and conceptual innovation” (Grant & Booth, 2009, p. 93). Many researchers have utilized the critical review method to develop existing, or produce new, hypotheses or models. In particular, for this study, critical review was used to evaluate existing literature and competing ideas, and to provide a “launch pad” for conceptual development and “subsequent testing” (Grant & Booth, 2009). In addition, due to the time and financial budget limitations, the critical review method was felt to best suit this study best. The critical review method does not require prior approval from Auckland University of Technology Ethics Committee (AUTEC) as this research method does not involve the study of people, and therefore it allows the researcher has sufficient time to complete the study in the required time frame.

2.2 The research process

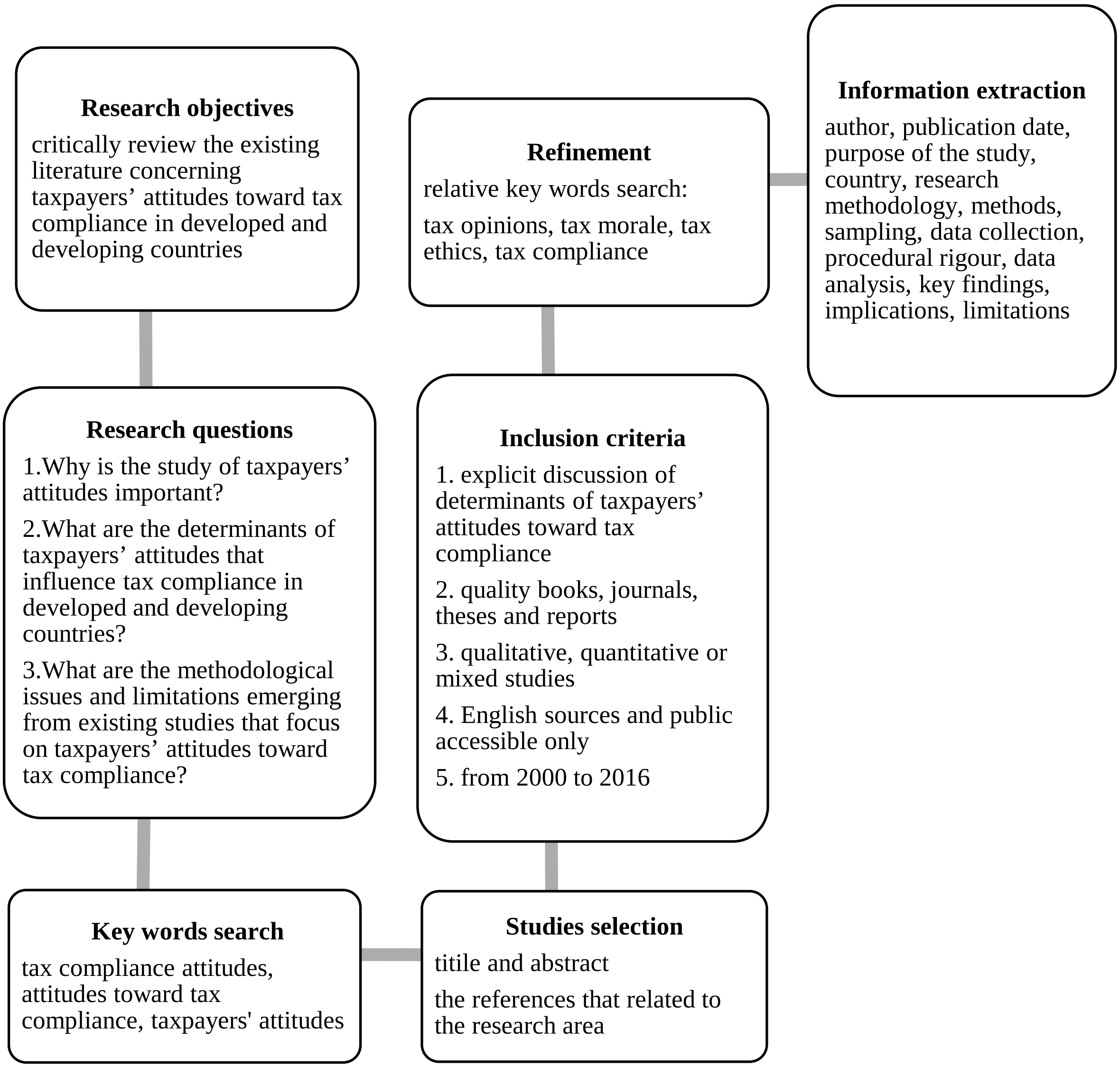

Figure 1 The research process

The Figure 1 provides an outline of the research process that was adopted for this study. In the initial step, the identification of research objectives and questions were considered as the bases for building on the subject of interest. In the next step, a key words search was conducted in order to find studies that were relevant to taxpayers’ attitudes toward tax compliance. The studies that contained the key words were collected and reviewed. In the following step, the researcher used relative key words to expand the research scope. The researcher then reviewed and sorted the studies found in the expanded scope. In particular, the researcher selected those studies that were published between 2000 and 2016, although a few studies were published in the early 1990s. The scope of the literature review was limited to English sources that were publicly accessible on websites. Finally, the researcher collected the appropriate data and organised them in a Word file with the following information: author, article name, institution, publication date, geographic area of research, purpose of the article, research methodology and methods, sampling, data collection, procedural rigour, data analysis, key findings, and implications and limitations. This process helped the researcher to understand and refine insights into the subject. Through this structured research process, the researcher was able to determine that the selected studies were appropriate enough to build a research that matched the research objectives.

Chapter 3 The Study of Taxpayers’ Attitudes

Why is the study of taxpayers’ attitudes important? Is attitude a major determinant of tax compliance? An indirect approach to answering these questions is to determine the level of compliance that cannot be predicted based on economic based theories. Additional residual compliance can be then attributed to psychology based theories such as taxpayers’ attitudes. There are two major groups of theories in tax compliance studies: economic based theories and physiology based theories (Alley & James, 2002). The economic based theories on tax behaviours assume that taxpayers attempt to maximize their economic benefits by avoiding taxes (Becker, as cited in Kichler, 2007). Hence, individuals’ decide whether or not pay taxes by weighting the uncertain benefits of successful deviance against the risk of detection and punishment (Becker, as cited in Kichler, 2007).

Based on Becker’s (as cited in Kirchler, 2007) findings, Allingham and Sandmo (1972) and Srinivasan (1973) developed the Expected Utility Theory (EUT) model of tax evasion that now dominates academic research in economics. Their economic deterrence model was the first formal tax compliance model to explain taxpayers’ compliance behaviour. Similar to Becker’s theory, in Allingham and Sandmo’s (1972) study, the researchers assumed that all taxpayers have a choice between two strategies: a taxpayer may declare their actual income, or declare less than their actual income. According to EUT theory, taxpayers compare the expected economic outcomes when choosing whether to evade or not to evade taxes and prefer the strategy with the highest expected profit.

However, this ground breaking model has been widely criticized by some scholars (e.g. Ajzen & Fishbein, 1980; Fisher et al. 1992; Graetz & Wilde, 1985; Jackson & Miliron, 1986; Lewis, 1982; Roberts, 1998; Frey & Feld; 2003). In some coutries, the level of deterrence is too low to explain the higher levels of tax compliance. A study conducted by Graetz & Wilde (1985) in the US, the estimated Arrow-Pratt measure of risk aversion varies between 1 and 2, but only a value of 30 can explain the observed compliance rate. Similarly, in Switzerland, Frey and Feld (2003) found that a risk aversion value of 30.75 is necessary to reach the compliance rate of 76.52. Their findings suggest that economic based theories cannot fully support the predictions. This suggests that there are different factors affecting tax compliance. To resolve the issue of tax compliance, scholars have used physiology based theories, making use of human factors to help understand, explain and predict human behaviours and thus encourage tax compliance (Torgler, 2007). Thus, psychological factors such as tax compliance attitudes might be a determinant to explain the puzzle of compliance.

The second way to determine the importance of tax attitude is to refer to studies that examine the relationship between attitude and behaviour. Ajzen and Fishbein (1980) found that individuals' behaviours are directly determined by their intentions, which in turn are a function of their attitudes toward behaviour and perception of subjective norms. As shown in Figure 2, the Theory of Reasoned Action (TRA) states that attitudes toward behaviour, as one of major determinants together with the subjective norms, influence individual's behavioural intention and actual behaviour.

Similarly, as shown in Figure 3, Ajzen (1985) introduced the Theory of Planned Behaviour (TPB) in an extension study of the TRA model. Within the frame of the TPB model, the intention to perform a behaviour and actual human behaviour can be influenced by three determinants: attitude towards behaviour, the subjective norms, and perceived behavioural control. According to the TPB model, behavioural intention is the mediating variable between attitudes toward behaviour, the subjective norms and perceived behavioural control on the one hand and behaviour on the other (Kirchler, 2007). That is, attitudes toward behaviour correlate with intention and behaviour. If an individual has a positive attitude towards a particular behaviour, it is more likely that the behaviour will result in a highly valued outcome (Kircher, 2007).

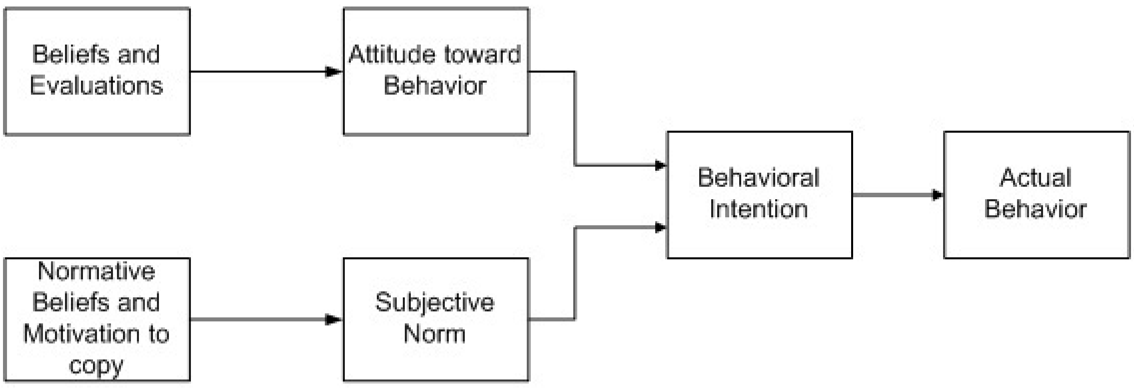

Figure 2 Theory of Reasoned Action (TRA) model (Fishbein & Ajzen, 1980)

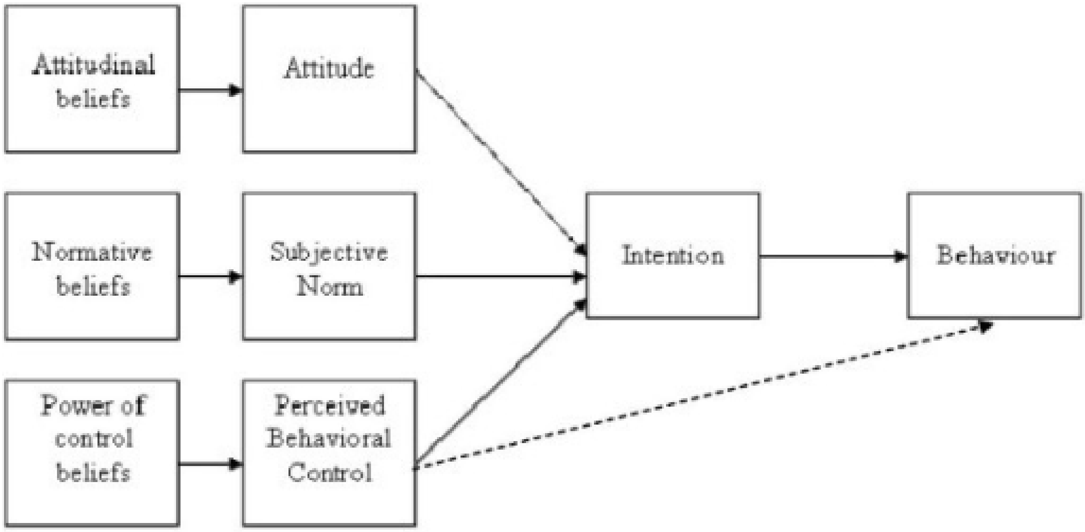

Figure 3 Theory of Planned Behaviour (TPB) model (Ajzen, 1985)

The third avenue for learning about the importance of tax attitude is to measure the correlation between tax attitude and compliance/noncompliance behaviour. The relevance of attitudes towards tax compliance or noncompliance in determining tax behaviour has been recognized in empirical studies conducted in various countries since the beginning of psychological studies on taxation (e.g., Ajzen & Fishbein, 1980; Bobek & Hartfield, 2003; Chan Troutman & O' Bryan, 2000; Dornstein, 1976; Fisher et al., 1992; Groenland & Veldhoven ,1983; Jackson & Milliron, 1986; Kinsey, 1986; Lewis, 1982; Murphy, 2004; Orviska & Hudson, 2002; Porcano, 1998; Roberts, 1998; Saad, 2011; Spicer, 1974; Trivedi et al., 2004; Vogel, 1974; Wahlund,1992; Wallchutzky,1984, Yizhaki, 1974).

Chan et al. (2000) examined US and Hong Kong taxpayers. Their findings suggested that the attitudes of taxpayers toward the intention to comply with tax laws significantly influence reported tax compliance behaviour. In Australia, Murphy (2004) examined the attitudes of aggressive Australian taxpayers, through the use of a national tax survey that included 2,040 Australian taxpayers. The findings suggested that those taxpayers in Australia who prefer and seek an aggressive tax position have a different tax attitude compared to other taxpayers. An experimental study conducted by Bobek and Hartfiled (2003) utilized three scenarios: a home office scenario, a gratuity scenario; and a charitable contribution scenario. The study found that attitude towards tax compliance is an important factor that motivates taxpayers to comply with tax laws. The authors further found that a favourable attitude towards tax compliance has a high correlation with tax compliance behaviour in all three scenarios. Similar findings are provided by Saad (2011) who examined individual taxpayers in Malaysia and New Zealand. The study found that attitude towards tax compliance is regarded as an important factor in tax compliance.

The fourth way to shed light on the importance of tax attitude is to quantify the importance of tax compliance attitudes relative to the importance of other determinants of tax compliance. For example, in the TPB model, as shown in Figure 3, the importance of attitude towards a behaviour depends on the subjective norm and perceived behavioural control because attitude towards a behaviour, the subjective norm and perceived behavioural control generally interact. That is, conceptually, at one extreme, if the attitude towards a behaviour is so draconian that the intention and behaviour match perfectly, there is no role for other determinants of tax compliance. At the other extreme, when there are no other determinants whatsoever, attitude may be eroded because a lack of determinants signals that intention and behaviour do not exist.

In practice, with regard to tax compliance, it is rarely possible to measure attitude towards tax compliance in the absence of interactive determinants. It is possible to compare compliance at different observed levels of tax compliance attitude, but not to assess what compliance would be if other determinants were zero or attitude was zero. Therefore, the researcher cannot quantify the relative importance of attitude and other determinants. For that reason, the researcher's view is that there are different determinants of tax compliance but tax attitude meaningfully enhances compliance.

Taken together, the findings on these four sources of evidence show that tax attitude plays an important role in the study of tax compliance. This is the case when it is not possible to qualify the relative importance of tax compliance attitudes relative to the importance of other determinants of tax compliance. The researcher can remain confident that tax attitude studies are important in providing a better understanding and acceptance of fiscal policy that imposes a tax burden on taxpayers. Such studies also provide strategies that can improve taxpayers' compliance attitudes. Therefore, before considering which policies could affect tax compliance attitudes, it is important to understand the determinants that influence tax compliance attitude.

Chapter 4 Findings and Discussion

Knowledge of taxpayer's attitude is essential in ensuring tax compliance. While attitude towards tax compliance is commonly used as a single concept of tax compliance, it can be more accurately thought of as a set of determinants for tax compliance. Identifying the determinants of tax compliance attitudes is both important for understanding why taxpayers have different attitudes toward tax compliance and for designing appropriate policy strategies. Although there are numerous determinants identified in the tax compliance literature as potentially influencing tax compliance attitude, this study based on prior tax compliance literature chose to focus on the following 15 determinants that are most commonly referred and influential (see Tables 1 and 2). The literature (Torgler, 2007; Luttmer & Singhal, 2014) shows that the 15 determinants can be divided into six main mechanisms, namely: 1) socio-demographic factors (age, gender, education/ tax knowledge, marital status and occupational status); 2) economic factors (income level, tax rate and probability of detection); 3) reciprocity (trust, fairness and institution/direct democracy); 4) intrinsic motivation (national pride and religiosity); 5) peer effects and social influences (peer influence) and 6) culture factors (culture). The following subsections discuss these determinants that may affect tax compliance attitudes.

The results of each of reviewed studies are summarized in Tables 3 to 8. Tables 3, 5 and 6 present tax attitude studies from developed countries. Tables 4, 7 and 8 present tax attitude studies from developing countries. The results in the tables are summarized by indicating how different determinants affect the probability of taxpayers' attitudes toward compliance: increase in tax compliance attitudes (+), decrease in tax compliance attitudes (-), or no significant effect on tax compliance attitudes (0).

4.1 Socio-demographic factors

When considering how tax attitudes might influence taxpayers' behaviors, one possibility is that socio-demographic factors may induce people to comply with tax laws (Torgler, 2007). In the following subsections, the determinants of socio-demographic factors (age, gender, education/ tax knowledge, marital status and occupational status) are explored in more detail.

4.1.1 Age

As shown in Table 3, most of the studies selected from developed countries found a positive relationship between taxpayers' chronological age and their tax attitudes. The older groups were found to be more willing to comply with tax laws than taxpayers from younger groups in most developed countries, in particular in Australia (Devos, 2008; Torgler & Murphy, 2004); Canada (Torgler, 2003b); Estonia (Randlane, 2012); New Zealand (Gupta & McGee, 2010; Marriott, 2016); and Spain (Alm & Gomez, 2008; Martinez-Vazquez & Torgler, 2009). However, that result was not found in all studies. Some studies found that younger people have more positive attitudes toward tax compliance than older people (Ross & McGee, 2012a; Torgler & Schneider, 2007).

Table 4 presents several studies from developing countries that also found a positive correlation between taxpayers from the older age group and attitudes toward tax compliance (Torgler, 2003a; Torgler, 2004; Torgler, 2012a; Ristovska, Mojsoska-Blazevski, & Nikolov, 2013; Al-Mamun et al., 2014). However, there were also numerous studies that showed age has no significant effect on taxpayers' tax compliance attitudes (Ho, Ho & Young, 2013; McGee, 2014; Nyamwanza, Mavhiki, Mapetere & Nyamwanza, 2014; Helhel & Ahmed; 2014).

A number of possible explanations exist for the inconsistent findings on the determinant of age. First, it appears that age may not be a significant determinant for all types of taxpayers (Richardson & Sawyer, 2001). Some tax compliance studies found that age is only positively related to compliance in some audit classes (Tachen, Witte & Beron, as cited in Richardson & Sawyer, 2001). Another particularly interesting reason might be that many younger and older people are often no longer subject to income tax (Torgler, 2006), and thereby they have positive attitudes towards tax compliance (or a higher tax morale).

Another possible factor contributing to the inconclusive findings on age is related to the multiple determinants examined in one study. Porcano (as cited in Richardson & Sawyer, 2001) suggested that age is one of the determinants that has potential relevance to the tax compliance attitudes of taxpayers. He further pointed out that age may not be a particularly important determinant when multiple determinants are examined together in one study.

The final factor of concern is possible interactions with other determinants such as the threat of sanction. This point was well supported by Wahlund (as cited in Richardson & Sawyer, 2001). In his study, he found that age has no direct effect on tax compliance attitude; however, age has a propensity for indirect risk. He further pointed out that older people are usually less risk-seeking taxpayers, and therefore they are more willing to comply with the tax laws.

Most findings from the selected studies suggested that age and tax compliance attitudes have a significant and positive relationship, in particular for developed countries. In developing countries, numerous studies found that age has no significant effect. There are several possible explanations for the inconsistent findings on the determinant of age, which include the types of taxpayers, the use of multiple determinants in one study and interactions with other determinants. This led the researcher to conclude that the effect of age on tax compliance attitudes is still uncertain. Thus, future research should focus on how age affects taxpayers' attitudes, and what interactions take place between age and other relevant determinants.

4.1.2 Gender

As shown in Table 3, most of the studies selected from developed countries supported the position that females and tax compliance attitudes are positively correlated in Australia (Devos, 2008; McGee & Bose, 2009); Canada (Torgler, 2003b); Estonia (McGee, Alver & Alver, 2008); Germany (McGee, Benk, Ross & Kılıçaslan, 2009); the US (McGee, Nickerson & Fees, 2006; Yeaton & Stellenwerf, 2008); New Zealand (Gupta & McGee, 2010); the Netherlands (Ross & McGee,2012a); Spain (Matinez-Vazquez & Torgler, 2009); and Italy (Kastlunger, Dressler, Kirchler, Mittone, & Voracek, 2010). However, one study found that gender is not significant in Spain (Alm & Gomez, 2008).

Similarly, as shown in Table 4, studies from developing countries also found women to be more compliant than men, in particular, studies in Malaysia (Kasipillai & Abdual-Jabbar, 2006); Pakistan (Cyan & Martinez-Vazquez, 2016); Russia (Alm, Martinez-Vazque & Torgler, 2006) and Yemen (Helhel & Ahmed, 2014). Some studies in developing countries found that gender has a negative effect on taxpayers' attitudes toward tax compliance such as in Romania (McGree, 2006) and Turkey (McGee & Benk, 2011). However, numerous studies found no significant difference between male and female attitudes toward tax compliance in Argentina (McGee & Rossi, 2008); China (McGee, 2014); Southern China and Macau (McGee & Noronha, 2008); Hong Kong, China (McGee & Butt, 2008; Ho, Ho & Young, 2013); India (McGee & George, 2008); Kazakhstan (McGee & Preobragenskaya, 2008);

Malaysia (Al-Mamun et al., 2014); Macedonia (Ristovska, Mojsoska-Blazevski, & Nikolov, 2013); Poland (McGee & Bernal, 2006); and Zimbabwe (Nyamwanza, Mavhiki, Mapetere & Nyamwanza, 2014).

Some studies indicated that the inconsistent findings between gender and tax compliance attitudes can be explained on methodological grounds. Kasipillai and Abdul-Jabbar (2006) conducted a survey to investigate whether gender and ethnicity differences occur in relation to tax compliance attitudes. Their t-test showed that males and females have a similar compliant attitude, and no significant effect was found. However, their results from a regression analysis indicated that gender was statistically significant.

Another possible factor contributing to the inconclusive findings is related to the interactions between gender and other determinants such as age and education level. Cyan, Koumpias and Martinez-Vazquez (2016), in a survey of Pakistanis, found that females generally have higher tax morale than males, however, their attitudes tend to worsen with age to such an extent that elderly females have lower tax morale than elderly males. Other survey studies conducted by Hite (as cited in Richardson & Sawyer, 2001) found that female taxpayers with higher education have significantly more tolerant attitudes toward tax evasion than less educated women. Conversely, male taxpayers with higher levels of education have higher tax morale than other less educated counterparts.

This point is well illustrated by in the study of Ross and McGee (2012b), which examined the correlation between the level of education and views on the ethics of tax evasion in Germany. They found that men and women generally have the same degree of opposition to tax evasion, except in the case of those males who hold a university degree, suggesting that men with high qualifications are significantly more opposed to tax evasion than women. Further evidence of the link between age, education level and gender can also be found in a survey conducted by Yeaton and Stellenwerf (2008) in the US. The researchers compared the attitudes of males and females to tax evasion. To gain additional insight, the sample was divided based on the gender and educational level of the participants. The results indicated that there are differences in the mean responses between genders in the younger, less educated population; however, the responses of the participants converged as the participants increased in age and educational background.

To conclude, the findings showed that women are more willing to comply with tax laws than men in developed countries. In contrast, many studies from developing countries found that there is no significant difference between males and females in tax compliance attitudes. Much uncertainty remains on the determinant of gender and it is clear that further research is needed in this area. In particular, future research should focus on what interactions take place between gender and other determinants such as age and education levels.

4.1.3 Education / tax knowledge

As shown in Table 3, many studies from developed countries found that better educated taxpayers have a better understanding of tax policy and thus are more likely to have positive attitudes toward tax compliance. Studies include those in Australia (Devos, 2008; Devos, 2012; Gupta & McGee, 2010); Estonia (Randlane, 2012); New Zealand (Gupta & McGee, 2010); the Netherlands (Ross & McGee, 2012a); and Switzerland (Torgler, 2005a). However, several studies found a negative relationship between education and tax compliance attitude, for example, in Australia (Murphy, 2003); the US (Torgler, 2012b); and Spain (Alm & Gomez, 2008). A few studies found no relationship at all (Torgler & Murphy, 2004; McGee & Bose, 2009).

Support for the correlation between education and tax compliance attitudes is evident in the study of Gupta and McGee (2010) who examined the levels of tax morale in Australia and New Zealand. In their study, the authors' sample comprised 967 undergraduate and graduate accounting, business and economic, law and medical students and faculty in Auckland, New Zealand. They found that education had a significantly positive effect on the tax morale of respondents, in particular for those respondents who were studying law or accounting, thus also indicating that education influences the degree of tax knowledge.

As shown in Table 4, in contrast to studies undertaken in developed countries, those studies undertaken in developing countries rarely found a correlation between education level and tax compliance attitudes. Only one study conducted by Al-Mamun et al. (2014) in Malaysia found a statistically positive relationship between academic qualification and attitude towards tax compliance. Most studies from developing countries found that education has no effect on taxpayers' attitudes toward compliance, including studies in China (Ho et al, 2013); Ghana (Ibrahim & Abdual-Hanan, 2015); Russia (Alm et al, 2006); and Zimbabwe (Nymwanza et al., 2014). However, Table 4 shows that a positive relationship between tax knowledge and tax compliance attitudes can be found in Ghana (Abubakari & Christopher, 2013); Malaysia

(Kasipillai & Abdul-Jabbar, 2006; Loo & Ho, 2005); Pakistan (Cyan et al., 2016); Tanzania (Ali, Fjedstad & Sjursen, 2014); and South Africa (Ali, Fjedstad & Sjursen, 2014).

There are some possible explanations for the conflicting findings on the effect of education on tax compliance attitudes; in particular, the link between education and other determinants such as income level must be taken into account. Ross and McGee (2012b) found that more highly educated people are generally in higher income categories and may therefore feel exploited by the graduated income tax system; subsequently they may be less averse to tax evasion. This view was also supported by Al-Mamun et al. (2014) whose study in Malaysia, explored the impact of demographic factors on tax compliance attitude. They found that education level is significantly correlated with income level.

Another explanation for the mixed result is that education may be a mediation of tax knowledge and tax compliance attitude. Thus, education has no direct effect on tax compliance attitude, but it does affect tax knowledge. This point is well illustrated by Loo and Ho's (2005) study in Malaysia. In their study, tax knowledge was measured in terms of chargeable income, exemptions, reliefs, rebates and tax credits. By surveying 250 respondents through the use of questionnaires, the study found that although the respondents had tertiary educations, their knowledge in relation to personal taxation was relatively low, thus making it less likely there would be an improvement in their tax compliance attitudes.

Taken together, the determinant of education produced some mixed results in studies developed countries, while evidence for a correlation between education and tax compliance attitudes can rarely be found in studies in developing countries. However, numerous studies found there to be a significant correlation between tax knowledge and tax compliance attitude in developing countries. This implies that education level may be a mediating factor between tax knowledge and tax compliance attitude, in particular for developing countries. Therefore, further study should look into different aspects of tax knowledge to investigate how tax knowledge affects tax compliance attitude.

4.1.4 Marital status

As illustrated in Table 3, most studies from developed countries found that married people tend to have higher levels of tax morale than single people, including in Austria (Torgler, 2005); Australia (Torgler & Murphy, 2004); Demark (McGee, 2008b); Finland (McGee, 2008b); the US (Torgler, 2012b); Switzerland (Torgler & Schneider, 2007); and Spain (Torgler & Schneider, 2007; Martinez-Vazquez, 2009). However, there were a small number of studies found no significant relationship between marriage and tax compliance attitudes, including in Germany (Hennighausen & Heinemann, 2015); the Netherlands (Ross & McGee, 2012a); Estonia (Randlane, 2012); and Spain (Alm & Gomez, 2008).

Similarly, as shown in Table 4, studies from developing countries found that married taxpayers are more willing to comply with tax laws than single taxpayers. Torgler (2003a) conducted a cross-country analysis to examine the determinants that affect tax morale in selected transition countries. The author employed 1989-93 and 1995-98 WVS data sets and found that married people tend to have more positive tax attitudes than single people in Azerbaijan, Belarus, Georgia, Latvia, Lithuania, Moldova, Russia, Ukraine, Romania, Bulgaria, Bosnia, Croatia, Montenegro, Poland and Serbia. In another cross-national comparison study, McGee (2008b) found that singles are less opposed to tax evasion than married people in Belarus, Bulgaria, Croatia, Latvia, Lithuania, Russia and Ukraine. However, a few studies from developing countries found no significant relationship between marital status and tax compliance attitudes (Alm et al., 2006; Ho et al., 2013; Ibrahim et al., 2015).

There are possible reasons for these inconsistent findings. First, the determinant of marital status is one of multiple determinants examined in one study. Alm and Gomez (2008) examined a total of 12 determinants and their relationship with tax morale in Spain and no significant effect of marital status was found. Ross and McGee (2012a) analyzed a large numbers of determinants and found marital status has an insignificant effect in the Netherlands. Thus, it may be that marital status is not a significantly important determinant in identifying the tax compliance attitudes of taxpayers.

Another possible reason for the mixed results is the interactions between marital status and the tax system or tax policy. If spouses have substantially different salaries, the spouse with a lower income can pull the higher income earner down into a lower bracket, reducing their overall taxes; thereby marital status could have a positive effect on tax compliance attitudes

(Hays, as cited in Torgler, 2006). If dual incomes are treated as one and are taxed in a higher bracket than two separate incomes, married taxpayers would be more likely to have negative attitudes toward tax compliance (Hays, as cited in Torgler, 2006).

Correlations between marital status and other determinants may also contribute to the mixed results. In particular, concerns were expressed in a number of studies about the difficulty of separating the effect of marital status and the effect of age. Taxpayers from older age groups are more likely to be married, separated or widowed than people from a younger age group (Torgler & Murphy, 2004).

Overall, most of the studies found that married people are more likely to have higher tax morale than other groups of taxpayers in both developed and developing countries. However, several studies found that there is no effect of marriage on tax compliance attitudes. A possible explanation for these inconsistent findings might be the importance of the determinant, the tax system/tax policy, and the interactions with other determinants. Thus, the interactions between marital status and other determinants need to be explored in future research.

4.1.5 Occupational status

As shown in Table 3, most studies found that self-employed or part-time taxpayers are less willing to comply with tax laws than full-time taxpayers in developed countries, in particular in Austria (Torgler & Schneider, 2005); Australia (Devos, 2008); Belgium (Torgler & Schneider, 2007); New Zealand (Marriott, 2016); Switzerland (Torgler, 2005a; Torgler & Schneider, 2007); and Spain (Martinez-Vazquez & Torgler,2009; Torgler & Schneider, 2007). However, one study found no effect of self-employment and found that retired people appear to have significantly higher levels of tax morale (Torgler & Murphy, 2004).

Similarly, results in Table 4 shows that most studies in developing countries found that self-employed taxpayers have lower levels of tax morale than full-time taxpayers, including in India (Torgler, 2004); Russia (Alm et al., 2006); Eastern European countries (Torgler, 2012a); and several transition countries (Torgler, 2003a). However, some researchers had various results (Ibrahim et al., 2015; Cyan et al., 2016; Sá, Martins & Gomes, 2014). A study in Ghana found the occupational status does not affect tax compliance attitudes (Ibrahim et al., 2015). Another study in Pakistan found that groups with lower labour force participation have more positive attitudes toward tax compliance than other groups (Cyan et al., 2016).

One possible factor contributing to the inconclusive findings on the determinant of occupational status is a lack of a clarity concerning occupational status (Richardson & Sawyer, 2001). The main cause of this lack of clarity could be that many studies employed ad hoc occupational categories in their studies (Richardson & Sawyer, 2001). These ad hoc occupational categories have different measurements (Richardson & Sawyer, 2001). For example, some studies adopted eight occupational categories: manager, professional, trades person, clerical, sales and service, production and transport, laborer, and not working (Devos, 2008; Cyan et al., 2016), while other studies used hours worked and income sources as occupational categories: full time salaried, part-time salaried, self-employed and not employed (Torgler & Schneider, 2005; Torgler & Schneider, 2007). This diversity in approach makes it extremely difficult to make generalizations about how occupational status impacts tax compliance attitudes (Richardson & Sawyer, 2001).

Another possible factor is the interaction between other determinants. Occupational status may not be a separate determinant, instead, it may merely act as a mediator for income source or opportunities for noncompliance. This point is supported by the study of Devos (2008), who investigated the correlation between selected demographic variables and the attitudes of personal taxpayers toward tax evasion in Australia. The findings showed that those in the categories of transport and laborer are more accepting of underreporting cash earnings as compared to other occupational categories. This finding indicates that self-employed persons may have lower tax morale if their income source is not subject to withholding tax, giving them more opportunities to evade tax, than those taxpayers whose main source of income is in the form of salary or wages.

Several empirical studies found a relationship between occupational status, age and gender. Sá et al. (2014) examined the correlations between occupation status and tax morale in Portugal. Using a survey, the authors analyzed the impact of occupational status on the tax morale level of Portuguese taxpayers. The findings showed that housewives and retired taxpayers have higher levels of tax morale in comparison with employed and unemployed taxpayers. The results of the survey indicated that respondents' age and gender were related to occupational status.

To conclude, many studies supported the view that self-employed or part-time taxpayers are less willing to pay their taxes than full-time taxpayers in both developed and developing countries. However, a few studies found that no effect of occupation status on tax compliance attitudes. Therefore, studies on occupational status were not conclusive and a clear research direction was lacking. The main cause of this lack of clarity could be that individual studies used different ad hoc categories of this determinant. Another possibility centres on the correlation between occupational status and other determinants. Occupational status may not be a separate determinant; instead, it may act as a mediator for income source or opportunities for non-compliance. Therefore, it is important that future research examines the correlation between occupational status, income source and opportunities for non-compliance.

4.2 Economic factors

Economic factors can affect individuals' attitudes toward tax compliance in several ways: the taxpayer might attempt to minimize their tax liability if they perceive a tax rate increase; or, they might intentionally under report their actual income if they are not detected by the tax authorities. The following subsections present and discuss the determinants associated with economic factors (e.g., income level, tax rate and probability of detection) in both developed and developing countries.

4.2.1 Income level

As shown in Table 3, most studies found that lower income earners are more willing to pay taxes than higher income earners in Austria (Torgler & Friedrich, 2005); Australia (Murphy, 2003; Torgler & Murphy, 2004); Portugal (Sá et al., 2014); the Netherlands (Ross & McGee, 2012a); and the US (Torgler, 2012b). More evidence is provided in a cross-national comparison study by McGee (2012), which examined the relationship between income level and aversion to tax evasion. He found that lower income taxpayers are more willing to comply with tax laws than higher income earners in some developed countries, in particular in Austria, France, Germany, Iceland, Italy, Japan, the Netherlands, Portugal and the US. However, in Iceland, Italy, Latvia, Spain, the Netherlands, Hungary, Austria, Greece and the US, McGee (2012) found that middle income earners have higher tax morale than higher income level taxpayers. Two studies found that higher income level is positively linked with tax compliant attitudes in Australia (Devos, 2008) and New Zealand (Marriott, 2016).

Similarly, as shown in Table 4, the findings from developing countries were also very mixed. Several studies found that people on a higher income have higher tax morale than those on a lower income, for example in Ghana (Ibrahim et al., 2015); Malaysia (Al-Mamun et al., 2014); Macedonia (Ristovska et al., 2013); and several transition countries (Torgler, 2003a). However, the findings in McGee's study (2012) showed that lower income taxpayers are significantly more averse to tax evasion than higher income taxpayers in some developing countries including China, the Philippines, Puerto Rico, Malta, Moldova and Russia.

There are a number of possible explanations for the inconsistent findings. One possibility may be the interaction between income level and other determinants such as tax schedule and gender. This concern was a focus of several researchers (Hite, 1997; Torgler & Valev, 2010). Torgler and Valev (2010) observed that if a country has a progressive income tax schedule, higher income taxpayers may achieve a higher dollar return by avoiding paying tax; that is, they are more likely to have negative tax compliance attitudes. A study conducted by Hite (1997) found that there is a correlation between gender and income level; in particular, females with higher income have lower tax morale.

Another explanation might be that the determinant of income level is a proxy for other more important determinants such as financial satisfaction. A cross-national comparison study conducted by Torgler (2003a) examined determinants that affect tax compliance attitudes in transition countries. The findings showed that financial satisfaction has a positive effect on tax compliance attitudes. Torgler (2003a) further discovered that financial dissatisfaction can create a sense of distress, especially when taxes have to be paid and there is a discrepancy between the actual and the desired financial situation. Taxpayers with lower incomes may particularly note this discrepancy as they are more likely to experience a decline in living standards (Torgler, 2003a). Thus, those taxpayers may perceive the payment of taxes as a strong restriction on reaching their goals, which increases the incentive to reduce tax honesty.

Studies examining the relationship between income level and tax morale produced very mixed results, with some finding a positive relationship, some finding a negative relationship, and still others finding no relationship at all. A possible explanation for the inconsistent findings might be the importance of the determinant and the interaction with other determinants. Hence, further research should continue to focus on the interactions between income level and other determinants, and how these interactions affect tax compliant attitudes.

4.2.2 Tax rate

As shown in Table 3, most of the selected laboratory experiments and surveys found that tax rate increases lead to negative attitudes towards tax compliance in developed countries, including in Australia (Torgler & Murphy, 2004) and the US (Tax Foundation, 2006, 2007). The 2006 Annual Survey of U.S. Attitudes on Taxes and Wealth was based on a Harris Interactive online survey conducted on behalf of the Tax Foundation within the US between March 8 and 16, 2006 among a nationwide cross section of 2,017 adults aged 18 and older. The majority of respondents reported that the amount of federal income taxes they had to pay was “too high;” and rated the value they received from the taxes they paid to the federal government as “only fair” or “poor.”

As shown in Table 4, in line with the findings in developed countries, a significant negative relationship was found in developing countries, including in Ghana (Abubakari & Christopher, 2013); Sri Lanka (Jayawardane, 2016); Yemen (Helhel &Ahmed, 2014); and 17 Latin American countries (Torgler, 2005b). A study in Ghana by Abubakari and Christopher (2013) provides an insight into the attitudes of individual taxpayers in terms of tax compliance decisions. Their results indicated that individuals in Ghana are highly concerned with the amount of tax they pay. The burden of taxes paid affects attitudes of individuals and this informs how they evaluate the tax system and consequently their compliance decisions. In a study of tax morale in 17 Latin American countries, Torgler (2005b) found that over 46% of the respondents perceived a high tax burden to be the reason why people did not pay taxes: “because the taxes are too high” was the most frequently mentioned reason.

One possible explanation for the difference in findings concerning the tax rate in both developed and developing countries is the correlation between tax rate and other determinants such as income level. According to the ‘income effect hypothesis’, higher tax rates reduce real income, and thus, taxpayers are less willing to comply with tax laws. However, Andreoni, Erard and Feinstain (as cited in Kirchler, 2007) pointed out that the relationship between income level and tax rates needs to be investigated further as it is not linear (as cited in Kirchler, 2007). Frey and Feld’s 2002 study(as cited in Torgler & Murphy, 2004) found the effects of tax rates and income level on compliance attitudes and compliance behaviour are difficult to access theoretically as the findings are typically correlated to other determinants such as the risk aversion of taxpayers and the types of tax schedules.

Some studies (Alm, Jackson and McKee 1992) that have been developed and are outside the time period of research but still important in this field showed that participants faced tax rates varying from 10%, 30 %, and 50%, audit rates of 2%, 4% and 6%, and fines amounting to double or triple the amount of evaded taxes. The findings showed that income and tax rate were the biggest determinants of non-compliance attitudes and tax evasion amongst participants. The higher the tax rate and the lower the income, participants' noncompliance attitudes were higher and were evading paying tax.

Most studies found that high tax burdens have a negative effect on tax compliance attitudes in both developed and developing countries. Several researchers suggested that the effects of tax rates are difficult to determine as other determinants such as income, an individual's risk preference and the income tax schedule are important factors that need to be taken into account. Thus, future studies should look into the interactions between tax rates and these determinants.

4.2.3 Probability of detection

The results presented in Table 3 show a clear picture of the effect of the probability of detection. In most studies, the probability of detection was significantly positively correlated with tax morale in developed countries, including Australia (Devos, 2012); Canada (Trivedi et al., 2004); New Zealand (Woodward & Tan, 2015); the UK (Hasseldine et al., 2007); and the US (Bobek, Hageman & Kelliher, 2013). A study by Trivedi et al. (2004) examined the effects of psychological variables on audit rates either at 0% or 25%. Under the condition of no audits, participants' attitudes and behaviours followed the rational model, and their noncompliance attitudes were significantly higher in comparison to the audit condition.

However, a small number of studies indicated that the probability of detection does not have a great effect in some developed countries, including the US (Alm & Torgler, 2006) and Switzerland (Frey & Feld, as cited in Torgler & Murphy, 2004; Torgler, 2005a). In their pooled cross-sectional time-series estimation for Swiss data over the years 1970, 1978, 1985, 1990 and 1995, Frey and Feld (as cited in Torgler & Murphy, 2004) found that the probability of detection did not have a statistically significant effect on tax evasion. Another analysis of Swiss data by Torgler (2005a) found that audit probability, fines and an increased tax rate have no effect on tax morale in Switzerland.

As shown in Table 4, in line with the findings in developed countries, a significant relationship between the probability of detection and tax compliance attitudes was also found in the studies of developing countries, including Chile (Pomeranz, 2015); Malaysia (Isa & Yusoff, 2014); Sri Lanka (Jayawardane, 2016) and Yemen (Helhel & Ahmed, 2014). Helhel and Ahmed (2014) used the survey method to study internal and external factors influencing the attitudes of individual taxpayers in Yemen. In total, 170 participants filled out a five-point Likert scale questionnaire and took part in face-to-face interviews. The questionnaire was divide into two sections: section one of the questionnaire was designed to obtain the demographic characteristics of the respondents and section two consisted of 22 statements designed to evaluate the attitudes of taxpayers to the payment of taxes. The findings indicated that insufficient tax auditing and little deterrence through tax penalties frequently impacts taxpayers' compliance attitudes in Yemen.

However, two studies had mixed findings on the effects of the probability of detection (Mohdali et al., 2014; Torgler, 2005b). A study carried out by Mohdali et al. (2014) examined the impact of the threat of punishment on taxpayers' attitudes in Malaysia. The findings from a mixed-mode survey indicated that threats of audits and penalties significantly affect taxpayers' intention to evade tax payments; however, the threat of punishment is not a significant deterrent as taxpayers in Malaysia are willing to comply with tax laws.

One possible factor contributing to the inconclusive findings on the determinant of the probability of detection is that many of the studies used different audit rules. It is possible that taxpayers perceive that tax evasion is unlikely to be detected and punished automatically. Accordingly, Slemrod, Blumenthal and Christian (2001, p. 482) proposed that "a heightened audit threat should be carried out simultaneously with a rethinking of how the audits themselves are carried out". They further pointed out that endogenous audit rules are more likely to have a significant correlation with tax compliance attitudes than random audit rules as these rules depend on the behaviour of taxpayers and tax agencies (Slemord et al., 2001).

Another possible explanation for the inconclusive findings on the probability of detection is the interaction between the probability of detection and other determinants such as income level. This relationship was examined in a study by Slemord et al. (2001). In their controlled field experiment in the US, more than 1,700 randomly selected participants were informed that the return they were about to file would be closely examined. The experimental findings suggested that there is a significant relationship between perceptions of detection and income level. In the treatment group, participants with low and middle income increased their reported income and tax payments compared to previous years. In contrast, the reported income of the high income group decreased sharply.

Most studies had similar findings and strengthen the conclusion that the probability of detection has a significant effect on tax compliance attitudes in both developed and developing countries. However, two studies found it difficult to predict the relationship between the probability of detection and tax compliance attitudes (Mohdali et al., 2014; Torgler, 2005b). There are several possible explanations for the inconsistent findings on the probability of detection which include different audit rules and the interaction with other determinants. Future studies might look into these audit rules and the interactions with other determinants, in particular, how these audit rules and determinants affect tax compliance attitude.

4.3 Reciprocity

The term reciprocity is broadly defined as relating to situations in which willingness to pay taxes depends on the individual's relationship with the state and government (Luttmer & Singhal, 2014). Hence, determinants such as trust in government, perception of fairness and institutional/direct democracy affect tax compliance attitudes. The following subsections present the findings on this subject.

4.3.1 Trust in government

Table 4 presents the findings on trust in government. Studies found a positive correlation between trust in government and tax morale in developed countries, including Austria (Casal et al., 2016; Torgler & Friedrich, 2005); Australia (Murphy, 2003; Torgler & Murphy, 2004); Belgium (Torgler & Schneider, 2007); Canada (Torgler, 2003b); Estonia (Randlane, 2012); New Zealand (Woodward & Tan, 2015); Portugal (Sá et al., 2014); the Netherlands (Ross & McGee, 2012a); the US (Torgler, 2012b; Alm & Torgler, 2006; Jimenez & Iyer, 2016); Spain (Alm & Gomez, 2008; Martinez-Vazquez, 2009; Torgler & Schneider, 2007); and Switzerland (Torgler, 2005a; Torgler & Schneider, 2007).

A study by Torgler (2005a) investigated which factors have an impact on tax morale at the national level. The researcher analyzed a cross-section of individuals throughout Switzerland, using the WVS data of 1996 and the ISSP data set of 1999. The findings suggested that trust in government and trust in the courts and the legal system have a positive effect on tax morale in Switzerland. Another study by Alm and Torgler (2006) examined the determinants of individuals' intrinsic willingness to pay taxes using information from the WVS. The authors analyzed a cross-section of individuals in Spain and the US. The findings indicated a significantly higher tax morale in the US than in Spain, controlling for additional variables. The authors further found that the difference in tax morale between Spain and the US is largely driven by trust.

This view was also supported by the study of Torgler and Murphy (2004), which sought to identify factors that shape or have an impact on tax morale in Australia. The authors used the 1981 and 1995 WVS data sets. Surveys investigated variables relating to changes in values such as politics, economic life, religion, gender, family norms and sexual norms. The 1981 survey had a total of 1,228 Australian respondents, while there were 2,048 Australian respondents in the 1995 survey. The findings from these data suggested that trust in government has positive impact on tax morale in Australia.

Table 4 shows that similar to developed countries, studies in developing countries found a positive correlation between trust in government and tax compliance attitudes, including in Ethiopia (Badu & Chariye, 2015); Ghana (Ibrahim et al., 2015; Abubakari & Christopher, 2013); Macedonia (Ristovska et al., 2013); Russia (Alm et al., 2006); Sri Lanka (Jayawardane, 2016); Zimbabwe (Nyamwanza et al., 2014); transition countries (Torgler, 2003a); Eastern European countries (Torgler, 2012a); and Asian countries (Torgler, 2004).

Badu and Chariye (2015) found that trust significantly influences tax compliance attitude in Ethiopia. They examined the effect on tax morale of taxpayers' attitudes toward the legal system and government in Ethiopia. Data were collected from a survey of 500 taxpayers by means of a self-administered questionnaire. The researchers found that a trustworthy institution is one of the important determinants to maintain and improve tax compliance attitudes in Ethiopia. Torgler (2003a, 2004, 2012a) undertook numerous cross-national studies in developing and transition countries and examined factors that affect tax morale. These studies utilized the WVS and EVS data sets to identify value and belief systems among people. The empirical findings in all these countries indicated that increasing individuals' trust in the government and the legal system has a significant positive effect on tax morale.

Taken together, trust in government plays an important role in tax compliance attitudes in both developed and developing countries. Higher trust in government can increase compliance attitudes and the likelihood of compliance. On the other hand, if taxpayers are subject to negative behaviours, a negative attitude towards tax can be a reaction.

4.3.2 Fairness

As shown in Table 3, most studies reported positive correlations between perceptions of fairness and tax compliance attitudes in developed countries, including Austria (Casal et al., 2016); Australia (Devos, 2012; Murphy, 2003); Germany (Hennighausen & Heinemann, 2015); Hungary (Pántya et al., 2016); New Zealand (Woodward & Tan, 2015); Spain (Alm & Gomez, 2008), the Netherlands (Ross & McGee, 2012a); the UK (Besley, Jensen & Persson, 2014); and the US (Jimenez & Iyer, 2016; Tax Foundation 2006, 2007; Wilson & Sheffrin, 2005).

Direct evidence of the correlation between perceptions of fairness and tax compliance attitudes was provided by the study of Wilson and Sheffrin (2005) in the US. They used the US IRS Taxpayer Compliance Measurement Program (TCMP) data and divided the sample into moral and immoral taxpayers. Moral taxpayers were defined as those who did not tolerate evasion of low amounts, whereas immoral taxpayers were defined as those who had more favourable attitudes towards evading higher amounts. When taxpayers considered the tax system to be ‘very fair’, they were 5% more likely to be honest as compared to those who perceived the tax system just to be ‘fair’. This indicated that taxpayers in the US are more likely to have a positive attitude towards tax if they perceive fairness.

Besley et al. (2014) examined the poll tax imposed between 1989 and 1990 under the Thatcher Government in the UK. The poll tax replaced a tax based on property values. A massive backlash against this tax forced its repeal only three years later and resulted in a return to a property-valued-based tax. The researchers argued that the backlash reflected perceptions of fairness. Taxpayers were unwilling to pay the poll tax because it was not related to the ability to pay and hence the tax system was regarded as unfair.

Such results do not only reflect the situation in developed countries. Table 4 shows that a positive correlation between fairness and tax compliance attitude was found in developing countries as well, including China (Ho et al., 2013); Ghana (Abubakari & Christopher, 2013); Sri Lanka (Jayawardane, 2016); Yemen (Helhel & Admed, 2014); Zimbabwe (Nyamwanza et al. 2014); and some African countries (Ali et al., 2014).

A study by Helhel and Admed (2014) examined the influence of individual taxpayers' attitudes on tax compliance in Yemen. The study was conducted in Sana'a, the capital city of Yemen, to evaluate and rank the factors that reduced taxpayer compliance. The results indicated that an unfair tax system is the one of the most crucial factors associated with tax noncompliance attitudes in Yemen. Nyamwanza et al. (2014) examined SMEs' attitudes toward tax compliance in Zimbabwe. The study showed that most SMEs in Zimbabwe do not comply with income tax requirements and PAYE as most of them do not perceive fairness of the tax system; thus, this greatly affects their tax compliance.

To conclude, most selected studies found a positive correlation between fairness and tax compliance attitudes in both developed and developing countries. Taxpayers are likely to increase their tax morale when they perceive fairness. On the other hand, perceived unfairness decreases their willingness to comply with the tax law.

4.3.3 Direct democracy

Table 3 presents that there is a positive correlation between direct democracy and tax morale in developed countries, including Australia (Murphy, 2003); the US (Alm & Torgler, 2006); and most European countries (Alm & Torgler, 2006; Casal et al., 2016; Torgler, 2005a; Torgler & Schneider, 2007; Sá et al., 2014). Torgler (2005a) analyzed whether direct democracy has an influence on tax morale in Switzerland, controlling for additional variables. The researcher used survey data from the WVS for 1995-1997 and the ISSP 1999. The results of the study suggested that direct democracy has a highly significant positive effect on tax morale in Switzerland.

Another cross-national study by Torgler and Schneider (2007) investigated factors influencing attitudes toward paying taxes in three multicultural European countries: Switzerland, Belgium, and Spain. The authors used the WVS data sets for 1990-1993 and 1995-1999, and the EVS data for 1999. The respondents were asked the following question using a 10-point scale index: Is cheating if the chance arises always justified, never justified, or something in between? The study found that pro-democratic attitudes have a positive effect on tax morale in these countries, which supports the view that higher legitimacy for political institutions leads to higher tax morale.

In a recent experimental study by Casal et al. (2016) in Austria, participants were offered the opportunity to pay their tax due either as one single compliance decision or as separate compliance decisions for each type of requested contribution (coined voice on contributions). In addition, contributions were either distributed according to a fixed scheme exogenously chosen, or participants had the opportunity to change the distribution pattern (coined voice on distribution). Furthermore, information about participants' contributions was either clearly related to the tax context or related to government public expenditures (coined context). Besides analyzing the effect of voice and context on compliance, the order of tax payments was controlled for in the analyses. The results showed that having a voice on tax contributions and tax distributions leads to a positive compliance attitude in Austria. This indicated that direct democracy has a positive impact on tax compliance attitudes and tax compliance.

As shown in Table 4, studies investigating the effect of direct democracy on tax morale are not readily available in developing countries, except in the case of Ghana (Ibrahim et al., 2015). A study by Ibrahim et al. (2015) investigated the determinants of the motivation to comply with tax laws in Ghana. The authors used the WVS data (2010-2016) to determine the drivers of tax morale and the probit model with different specifications was used to determine the robustness of the results. The findings showed that satisfaction with democracy does not influence tax morale in Ghana.

To sum up, most studies found a positive correlation between direct democracy and tax morale in developed countries. The evidence for the correlation between direct democracy and taxpayers' compliance attitudes in developing countries is very limited. Thus, future studies might look into how direct democracy affects tax compliance attitudes, in particular in developing countries.

4.4 Intrinsic motivation

Feelings of pride and strong religiosity could result in a willingness to comply with tax laws. The following subsections discuss the determinants of national pride and religiosity in both developed and developing countries.

4.4.1 National pride

If taxpayers feel more pride in their countries, they are more willing to comply with the tax laws. As shown in Table 3, studies confirmed this view in developed countries, including Austria (Torgler & Friedrich, 2005); Australia (Wenzel, 2004); Belgium (Torgler & Schneider, 2007); Canada (Torgler, 2003b); Portugal (Sa et al., 2014); the US (Torgler, 2012b); Spain (Torgler & Schneider, 2007; Martinez-Vazquez & Torgler, 2009); and Switzerland (Torgler & Schneider, 2007; Torgler, 2005a).

An Australian survey conducted by Wenzel (2004) assessed the relationship between tax non-compliance and respondents' identification with being Australian. The findings showed that the higher the identification with being Australian and the stricter the perception social norms, the more likely it is that a person has a positive attitude towards tax compliance. Torgler and Friedrich (2005) investigated tax morale among Austrian citizens between 1990 and 1999. The data used in this study were taken from the 1990 WVS and the 1999 EVS. The authors found that societal variables such as national pride has an impact on tax morale. In a similar study, Torgler and Schneider (2007) found that national pride has a positive effect on tax morale in Switzerland, Belgium, and Spain.

Table 4 presents a limited number of studies on the correlation between national pride and tax morale in developing countries. A few studies found that a higher level of national pride leads to a significantly better tax compliance attitude in Macedonia (Risovska et al., 2013); Russia (Alm et al., 2006); and Asian countries (Torgler, 2004). Ristovska et al. (2013) investigated factors that shape the tax morale of Macedonian citizens. The study was based on the work of Frey and Torgler (2007), and used an ordered probit model in which the dependent variable was tax morale, which was then regressed on a number of independent variables. Data for this study were from EVS 2008. The findings showed that national pride is one of most important determinants of tax morale in Macedonia.

Taken together, most studies showed that the more taxpayers feel pride in their country, the more willing they are to comply with the tax laws in developed countries. However, there is limited evidence of the correlation between national pride and tax morale in developing countries. Therefore, in future studies, more attention should be paid to the impact of this determinant on tax compliance attitudes in developing countries.

4.4.2 Religiosity

Studies found that strong religious beliefs can prevent tax noncompliance attitudes through self-imposed guilt (Welch, Tittle & Petee, 1991; Grasmick, Bursik, & Cochran, 1991; Petee, Milner & Welch, 1994). This view was confirmed by most studies from developed countries, including Austria (Torgler & Friedrich, 2005); Australia (Torgler & Murphy, 2004); Canada (Torgler, 2003b); the Netherlands (Ross & McGee, 2012a); the US (Torgler, 2012b); and some European countries (Torgler, 2006; Torgler & Schneider, 2007).

However, the findings by Welch et al. (2005) indicated that religiosity has no significant impact on tax compliance attitudes. The authors found that tax compliance attitudes within a community have a similar effect on the community members regardless of their levels of religiosity. Similarly, McKerchar, Bloomquist and Pope (2013) found that no empirical evidence supports religiosity as one of the factors that influenced tax morale. The authors argued that the personal integrity of an individual has a strong effect on their tax compliance attitudes compared to their religious beliefs.

Table 4 shows that only a few studies found a relationship between religiosity and tax compliance attitudes in developing countries (Torgler, 2006, 2012a). Torgler (2006) analyzed religiosity as a factor that potentially affects tax morale by studying more than 30 countries, including some developing countries, using the WVS data from 1995-1997. The study found that there was a strong correlation between religiosity and tax morale. All coefficients were found to be highly significant, with marginal effects between 1.8 and 9.3 percentage points. Strong effects were found for those participants who had a religious education and for those people who were actively involved in a church or a religious organization.

One possible explanation for inconclusive results is that religiosity has only a minimal impact on tax compliance attitudes. In a Malaysian study, Mohdali (2014) pointed out that the strong religious value held by taxpayers regarding philosophy or a way of life and the concept of giving has been emphsised in almost all religions. Hence, unlikely influence of religous values on taxpayers’ compliance attitudes.

Although inconclusive results, the overall studies showed that religiosity plays a critical role in tax compliance attitudes, in particular in developed countries. Few studies investigated the impact of religiosity on tax compliance attitudes in developing countries. Hence, future research on this determinant is needed, in particular for developing countries with respect to different types of religions.

4.5 Peer influence

Peer influence as a perception of usual behaviour in one's reference group is among the most important factors related to tax compliance attitudes. When people are uncertain of what an objectively appropriate and correct behaviour is, they tend to be influenced by the social norms of a salient group to which they belong and by those members they identify with (Sigala, Burgoyne & Webley, 1999). In line with this view, as shown in Table 3, some studies found a significant relationship between taxpayers' perceptions of peer compliance and tax compliance attitudes in developed countries (Bobek, Hageman, & Kelliher, 2013; Dwenger, Kleven, Rasul, & Rincke, 2014; Hallsworth, List, Metcalfe, & Vlaev, 2014).

Hallsworth et al. (2014) examined the effects of providing information on peer behaviour on the timely payment of taxes in the UK. The study gave participants one of the following three messages about compliance norms: 1) "9 out of 10 people pay their tax on time", 2) "9 out of 10 people in the UK pay their tax on time"; or 3) "9 out 10 people in the UK pay their tax on time. You are currently in the very small minority of people who have not paid us yet." They found that all three messages had a significant and positive effects on tax compliance attitudes, with the largest effects from the final message.

In a German study, Dwenger et al. (2014) examined the compliance with a local Protestant church tax. This study included a treatment arm in which those paying at least the required amount of the local church tax had an opportunity to have their names published in a local newspaper if they wished. This treatment resulted in increased payments for those who had evaded the church tax in the past, indicating that peer influence can influence the compliance attitudes of taxpayers.

As shown in Table 4, studies from developing countries found that peer influence has an important role in taxpayers' compliance attitudes. Ho et al. (2013) conducted a survey in China, with their findings showing that Chinese taxpayers tend to use relationship-based moral reasoning to judge tax compliance issues. Further support for this view was provided by the Sri Lankan survey of Jayawardane (2016) which examined attitudinal factors. The results of the survey showed that peer influence is one of most significant factors in tax noncompliance in Sri Lanka. The author found that if taxpayers trust their peers who are noncompliant and are never penalized, they are likely to have lower tax morale and be less compliant themselves.

Some studies found that there are no clear indications of the scope of peer influence as a determinant. Richardson and Sawyer (2001) doubted whether that peer influence is only related to those people known to a taxpayer (e.g., friends, family members) or the general population of taxpayers (e.g., occupational group or the nation). This view was confirmed by the study of Blumenthal, Christian and Slemrod (2001). In their field experiment in the US, tax authorities collected perceptions of tax compliance and enforcement in the treatment and control groups after interventions had been administered. The interventions included information about peer compliance. This study failed to find a significant correlation between peer influence and tax compliance attitudes. This might indicate that taxpayers' attitudes are not influenced by the information from unknown groups of taxpayers.

Several more recent studies examined how cultural aspects of tax morale and peer influence impact on tax compliance attitudes. A survey study of the impact of culture on tax compliance in China carried by Ho et al. (2013) found that the majority of Chinese taxpayers reflect Lawrence Kohlberg's concept of the stages of moral development. That is, if most in-group members comply with tax laws, it is more likely that individuals will have a greater level of tax compliance. Therefore, it appears that Chinese taxpayers are more likely to be affected by peer influence.

Most studies found that peer influence has a significant effect on tax compliance attitudes in both developed and developing countries. Future research into the effect of peer influence on compliance attitudes needs to explore the definition of peer influence and interactions between peer influence and other determinants, in particular culture.

4.6 Culture

Culture includes the norms, values and beliefs of individuals living in specific geographic regions, as well as the informal cultural practices of language, stories, and rituals of daily life (Hofstede, 1980). Culture is used to provide predictability and an orderly evolution of corresponding institutions because shared values and beliefs act as internal rules of society (Kasper & Streit, 1999). Thus, cultural differences may have a significant impact on tax compliance attitudes and behavior in an international context (Coleman & Freeman, 1997; Chan et al., 2000; Riahi-Belkaoiu, 2004).

As shown in Table 4, studies found a significant correlation between culture and tax compliance attitudes in both developed and developing countries. Torgler and Schneider (2007) examined the effect of culture on tax morale in Switzerland, Belgium and Spain. The findings suggested that culture can influence tax morale in these countries. This view was also confirmed by the study of Bobek, Roberts and Sweeney (2007) who examined the relationship between social norms and tax compliance intention in Singapore, Australia and the US. The findings suggested that a country's culture is outweighed by social norms. They also found that social norms in these countries are strongly related to the intention to comply with tax and that there are the inter-country differences in respect of tax compliance attitudes.

In their study, Luttmer and Singhal (2014) argued that country-level evasion can creditably be related to any measure of country-level tax morale when culture is measured as a "residual"; that is, the authors attributed whatever gap could not be explained by the observable factors in their study to the effect of culture. An alternative strategy that can be used to examine the correlation between culture and tax compliance attitude is to exploit variation amongst taxpayers who reside in the same country but have varying countries of origin. A survey study by Halla (2012) found that American-born taxpayers have more positive attitudes towards tax in the US when their country of ancestry has higher average tax morale, controlling for individual demographics.

Another way to access the effect of cultural difference on tax attitudes was shown in studies that compared tax evasion in multiple countries. A cross-national study by Tsakumis, Curatola, and Porcano (2007) investigated the influence of national culture on tax evasion in 50 countries. The results of the study suggested that countries which have high uncertainty avoidance, low individualism, low masculinity and are high in power distance are more likely to engage in tax evasion. Richardson (2008) extended the study of Tsakumis et al. (2007) and found that in 47 countries, tax evasion is higher when there is a higher level of uncertainty avoidance and a lower level of individualism. In another recent study, Bame-Aldred, Cullen, Martin, and Parboteeah (2011) examined the influence of national culture on the firm-level tax evasion of 3000 companies in 31 countries. They found that firms from a collectivist culture are less likely to evade tax, while firms from an individualistic culture are more likely to evade tax for personal benefit.

Taken together, most results suggested there are indeed cultural differences in attitudes toward tax compliance in developed countries and developing countries. The determinant of culture might help to explain the differences in tax morale across countries. Future research should explore in more depth how culture affects tax compliance attitudes and people's actual behaviours.

This study provided a literature review of 15 determinants of tax compliance attitudes. The determinants reviewed in this study are not considered to be exhaustive as there might be other determinants that are relevant. Nevertheless, as stated at the beginning of this chapter, the determinants were selected as those most frequently adopted by researchers in both developed and developing countries. The determinants reviewed can be used in a model for predicting tax compliance attitudes in developed and developing countries respectively. The determinants for tax compliance attitudes in developed countries are shown in Figure 4 and the determinants for tax compliance attitudes in developing countries are shown in Figure 5.

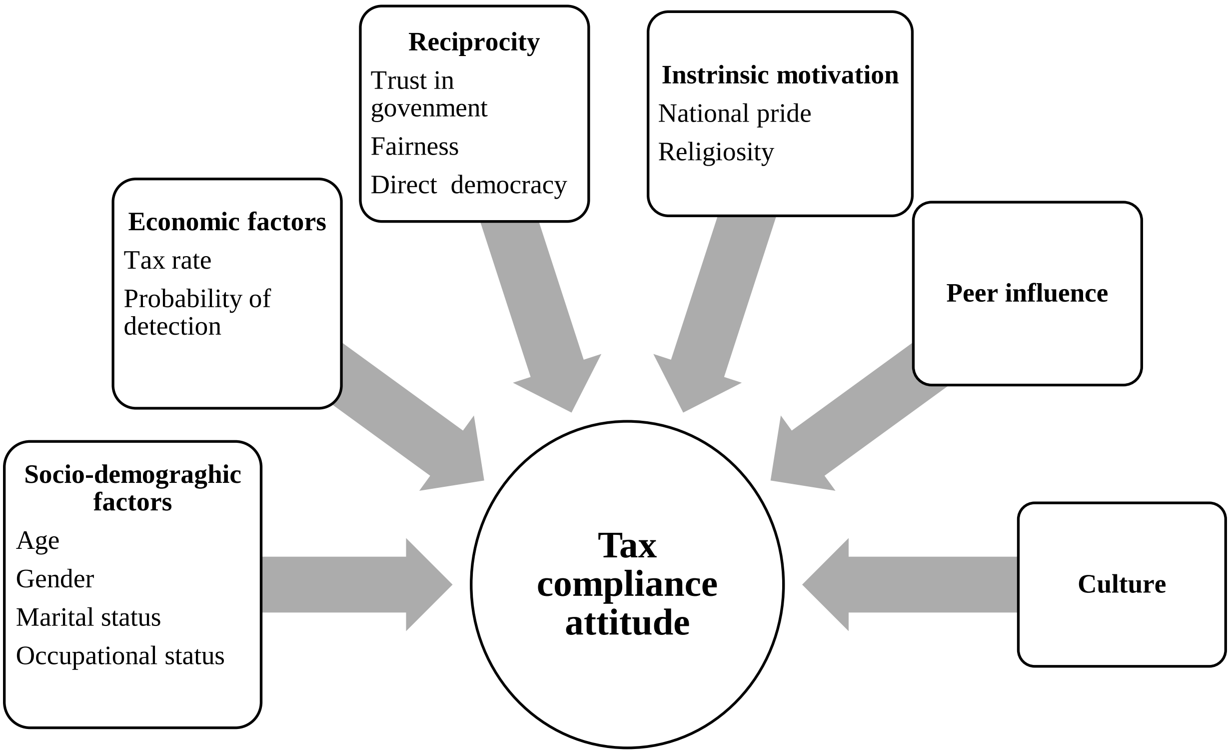

Figure 4 Determinants for tax compliance attitudes in developed countries

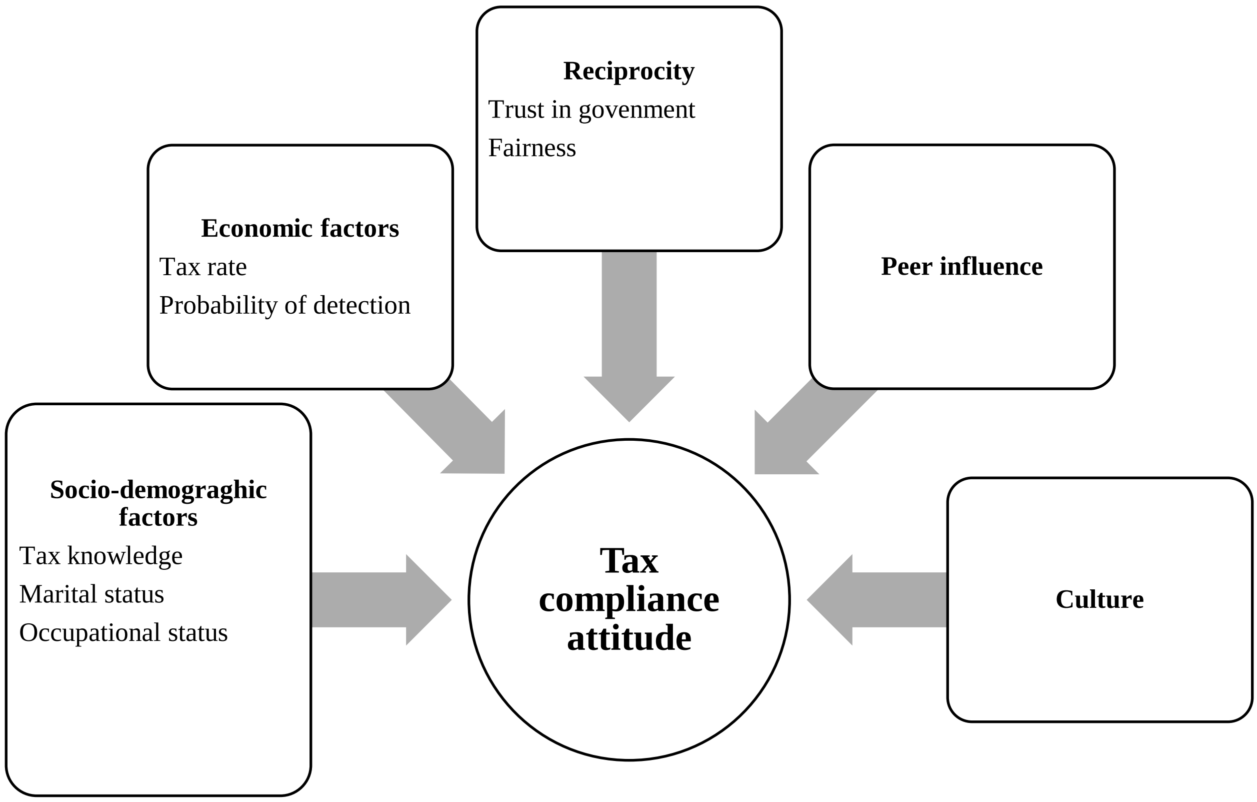

Figure 5 Determinants for tax compliance attitudes in developing countries

Chapter 5 Methodology Issues

In this chapter, methodology issues in the selected studies are identified and discussed to ensure that similar issues can be avoided in future studies. In particular, the chapter focuses on the two main research approaches in the tax attitude field: experiments and surveys.

5.1 Experiments

As shown in Tables 5 and 6, many of the reviewed studies adopted experiments. Neuman (2011) maintains that experiments are the strongest technique to examine the causal relationships between two variables. People are used in experiments to test the presence, type and degree of these relationships so that theories can be developed and then can be generalized to wider populations based on the findings (Sarantakos, 2005). Nevertheless, several problem areas still exist.

The first main problem area in experimental research is the existence of mediating variables. Mediating variables are those that mediate the effect of the independent variable on the dependent variable. For example, age is a mediating variable that can help explain variations found in the causal relationship among participants. In the case of the studies analyzed in this research, age may have mediated the effect of the level of education or occupation on tax compliance attitudes. For this reason, the findings in the tax attitude literature on the effect of age, level of education and other demographic factors on tax compliance attitudes were noticeably mixed (McKerchar, 2010). It is therefore important for future researchers to have a narrow scope where there is a limited number of variables under consideration and externalities can be controlled.

The second problem in experimental research concerns the subjects chosen for experimental participation. University students are often used as subjects in laboratory experiments (see Casal et al., 2016; Whillans et al., 2016). Not only do they offer the advantage of being a more homogenous group, students are also generally attractive as subjects given the relative ease with which they can be recruited (McKechar, 2010). However, this raises the question of how suitable they are as proxies for the general population. Some researchers have argued that students' cognitive processes are no different from those of "real" people and that in fact there is now considerable evidence that the experimental responses of students are seldom different to the responses of other subject pools (McKechar, 2010). For example, the studies in this research that used students to study attitudes toward tax compliance may not have yielded comparable results to a sample of “real” people as the students may not have to pay taxes nor have the experience of complying with tax laws. McKechar (2010) suggested random assignment to address this shortcoming. Random assignment is based on probability theory and assumes that extraneous influences are distributed randomly, they sum to zero and effectively can be ignored (Webster & Sell, 2007). Thus, random assignment allows researchers to more effectively “control” causes.

5.2 Surveys

As shown in Tables 5 and 6, the use of surveys for identifying tax attitude grew significantly over the time period studied by the published literature. Survey research is now the most popular research method in the field. Surveys can be a useful means of collecting many social-economic, demographic and attitudinal variables in respect of a population that is too large to observe directly (Babbie, 2007). Thus, the factors shaping tax morale could be assessed through multivariable analysis. Furthermore, surveys helped researchers compare different countries and to gain insights into the development of tax attitudes over time. However, there are a number of problems that still exist.

The first main problem is that a significant number of studies on tax morale continued to select unrepresentative samples, particularly with respect to geographical locations. It was common for researchers to draw their samples from within particular cities, rather than from a nation-wide pool (see Abubakari & Christopher, 2013; Al-Mamun et al, 2014; Loo & Ho, 2005; Jaywardane, 2016; Helhel & Ahmed, 2014). Thus, the survey findings cannot be generalized to broader populations. It is therefore important for greater confidence in the generalizations of findings for future research.

Similar to experiments, survey studies of tax morale often adopted university students as participants (see McGee & Bose, 2007; McGee et al., 2005; McGee & Butt, 2008; McGee & Ardakani, 2009; McGee & Preobragenskaya, 2008; Yeaton & Stellenwerf, 2008). As discussed above, the reliability of findings from a survey of university students about attitudes toward tax compliance as a proxy for the views of the wider community may be questionable if the students had little or limited tax experiences. Thus, it is still uncertain whether the attitudes reported by students who participated in the surveys are representative of the whole population.

The third problem with the surveys in the published literature was the use of WVS and EVS data sets. As shown in Tables 5 and 6, numerous studies worked with national-wide empirical data sets such as WVS or EVS (see Martinez-Vazquez & Torgler, 2009; Torgler, 2003a, 2004, 2005b; Torgler & Schneider, 2005, 2007; Torgler & Murphy, 2004). These data sets cover most countries, including developing countries where evidence is not readily available. However, some researchers argued that the assessment of taxpayers' compliance attitudes cannot be simply captured as knowledge is not created in this way. For example, to assess the level of tax morale in WVS, Torgler posed the following one question throughout most of his studies (Torgler, 2003a, 2005b; Torgler & Schneider, 2005, 2007; Torgler & Murphy, 2004):

> Please tell me for each of the following statements whether you think it can always be justified, never justified, or something in between: … Cheating on tax if you have the chance.

This one question is powerful in terms of producing statistical generalizations relating to large populations, but weak in generating rich understanding of the intricate mechanisms that affect human thought and behaviour. Therefore, future research could attempt to construct an index of tax compliance attitudes by using more than one question and checking the robustness of the obtained results (Torgler, 2007).

Chapter 6 Conclusions, Limitations and Future Research

This study is subject to several limitations. The main limitation arises from the scope of the review. This review included only published studies based on accessibility and possible quality concerns. In order to minimize this limitation, a detailed research process was undertaken in which relevant books, journals and papers were selected (refer to Figure 1). The scope of this literature review was limited to English sources. Literature that was non-English in public was not used in this study. However, a number of relevant studies within the defined scope were only available in a foreign language, and were therefore excluded from this study. The second limitation associated with this study is based on the difficulties encountered in synthesizing the research findings. Some of the studies did not provide a standard definition of tax compliance at all, while other studies focused solely on creative compliance. Furthermore, many studies failed to provide a distinction between the concepts of opinion, attitude and tax morale, while some studies concentrated on tax morale or tax opinions. This failure to adopt a standard definition of attitude and compliance across studies made it difficult for this study to synthesise the research findings, and may have partially contributed to some of the conflicting results found.

Notwithstanding these limitations, this study reviewed the recent literature and provided new evidence on the 15 determinants that influence taxpayers' tax compliance attitudes in both developed and developing countries. The study reviewed the following determinants: age, gender, education/tax knowledge, marital status, occupational status, income level, tax rate, probability of detection, trust, fairness, direct democracy, national pride, religiosity, peer influence and culture. The findings revealed that some determinants have significant impacts on tax compliance attitudes in both developed and developing countries, including socio-demographic factors (marital status and occupational status); economic factors (tax rate and probability of detection); reciprocity (trust in government and fairness); and peer influence and culture. It was generally found that some determinants have a positive correlation with tax compliance attitudes in developed countries, including age, gender and direct democracy; however, these determinants were shown to have no significant effects on tax compliance attitudes in developing countries. Some determinants such as tax knowledge were found to only influence tax compliance attitudes in developing countries. Determinants such as income level produced very mixed results and their effect remains uncertain in both developed and developing countries. Some determinants such as national pride and religiosity were found to have a positive correlation with positive attitudes toward tax compliance in developed countries, however, there was a lack of studies on the impact of these determinants in developing countries.

The findings suggest that in order to improve taxpayers' compliance attitudes, the tax authorities should monitor more closely those who may not perceive fairness and trustworthiness in government. Based on the analysis, those taxpayers who are singles and self-employed, those who have not been audited in the past, those who perceive the tax rate as too high and those who come from countries with a higher level of uncertainty avoidance and a lower level of individualism should be the focus of efforts to improve tax compliance attitudes. The results also suggest that to improve tax compliance attitudes, the tax revenue authorities should target taxpayers who are younger, males and who do not perceive direct democracy in developed countries, as well as taxpayers with a low level of tax knowledge in developing countries.

This study has made an important contribution to the tax attitude literature. In particular, this study clarifies the relationship between determinants and tax compliance attitudes and highlights the gaps in the existing literature, thereby providing direction for future researchers. The author suggests that future research on tax compliance attitudes should take into consideration the matters given as follows. First, future research is best suited to research problems that have a narrow scope and where there are a limited number of determinants under consideration. Second, future researchers should use a random assignment of subjects under various experimental conditions due to the fact that any group of people is unlikely to be homogenous. Third, in future research, the sample size of countries should be increased to allow for greater confidence in the generalizations of the findings. Fourth, to reduce possible bias due to one single question, future researchers should include different data sets and countries. Future research could also construct an index of tax morale using more than one question and check the robustness of the obtained results, thereby reducing the risk of measurement error. Finally, a greater longitudinal emphasis could be undertaken to examine the determinants (such as direct democracy, national pride and religiosity), in developing countries in particular.

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Glossary

Auckland University of Technology	AUT
Auckland University of Technology Ethics Committee	AUTEC
China Yuan Renminbi	CNY
Expected Utility Theory	EUT
European Values Survey	EVS
Great British Pound	GBP
German General Social Survey	GGSS
HM Revenue and Customs	HMRC
Internal Revenue Service	IRS
International Social Survey Program	ISSP
Self-Assessment System	SAS
State Administration of Taxation	SAT
Taxpayer Compliance Measurement Program	TCMP
Theory of Planned Behaviour	TPB
Theory of Reasoned Action	TRA
United States Dollar	USD
World Value Survey	WVS

Appendices

Table 1 Selected studies of attitudes toward tax compliance in developed countries between the years 2000 to 2016

Country	**Author/published year**
Austria	Casal et al., 2016; Torgler & Schneider, 2005;
Australia	Devos, 2008; Devos, 2012; McGee & Bose, 2009; Murphy, 2003; Marriott, 2016; Torgler & Murphy, 2004; Wenzel, 2004
Belgium	Torgler & Schneider, 2007
Canada	Torgler, 2003b; Trivedi et al., 2004
Demark	McGee, 2008b
Estonia	McGee et al., 2008; Randlane, 2012
Finland	McGee, 2008
Germany	McGee et al., 2009; Dwenger et al., 2014; Hennighausen & Heinemann, 2015;
Hungary	Pántya, et al., 2016
Italy	Kastlunger et al., 2010
New Zealand	Gupta & McGee, 2010; Marriott, 2016; Woodward &Tan, 2015
Netherlands	Ross & McGee, 2012a
Portugal	Sá et al., 2014
Spain	Alm & Torgler; 2006; Alm & Gomez, 2008; Martinez-Vazquez & Torgler & Schneider, 2007
Switzerland	Frey & Feld, 2002; Torgler, 2005a; Torgler

	& Schneider, 2007
United Kingdom	Besley et al., 2014; Hasseldine et al., 2007; Hallsworth et al., 2016
United States	Alm & Torgler, 2006; Bobek et al., 2013; Jimenez & Iyer, 2016; Tax Foundation, 2006; Tax Foundation, 2007; Torlger, 2012b; Whillans et al, 2016; Wilson & Sheffrin, 2005; Yeaton & Stellenwerf, 2008;

Table 2 Selected studies of attitudes toward tax compliance in developing countries between the years 2000 to 2016

Country	**Author /published year**
Argentina	McGee & Rossi, 2008
China	Ho et al., 2013; McGee, 2014; McGee & Butt, 2008; McGee & Noronha, 2008
Chile	Pomeranz, 2015
Ethiopia	Badu & Charive, 2015
Ghana	Abubakari, & Christopher, 2013; Ibrahim et al., 2015
India	McGee, 2008
Iran	McGee & Preobragenskaya, 2008
Macedonia	Ristovska et al., 2013
Malaysia	Al-Mamun et al., 2014; Kasipillai, & Abdul-Jabbar, 2006; Loo & Ho, 2005 Mohdali et al., 2014
Pakistan	Cyan et al., 2016
Poland	McGee & Bernal, 2006
Romania	McGee, 2006
Russia	Alm et al., 2006
Sri Lanka	Jayawardane, 2016
Turkey	McGee & Benk, 2011
Yemen	Helhel & Ahmed, 2014
Zimbabwe	Nyamwanza et al., 2014
Kenya, Tanzania, Uganda and South Africa	Ali et al., 2014
Latvia and Lithuania	Williams & Horodnic, 2015

Asia countries	Torgler, 2004
Eastern European countries	Torgler, 2012a
Latin America countries	Torgler, 2005b
Transitional countries	Torgler, 2003a

Table 3 Relationship of determinants to tax compliance attitudes in developed countries from 2000 to 2016

Author **/ Year**	**Age** **AGE 65+**	**Gender** **FEMALE**	**Education level**	**Tax knowledge**	**Marital status** **MARRIED**	**Income level**	**Occupation status** **FULL TIME EMPLOYED**	**Tax rate**	**Probability of detection**	**Trust**	**Fairness**	**Direct democracy**	**Other** **determinants**
Casal et al., 2016 (Austria)										+	+	+	
Torgler& Schneider, 2005 (Austria)			-		+	-	+			+			national pride + and church attendance +
Devos, 2008 (Australia)	+	+	+			+	+						
Devos, 2012 (Australia)			+	+					+		+		the moral value of taxpayers +
McGee & Bose, 2009 (Australia)		+											
Murphy, 2003 (Australia)			-			-				+	+	+	perceived power+

Torgler & Murphy, 2004 (Australia)	+		0		+	-	0	-		+			religiosity +
Wenzel, 2004 (Australia)													national pride +
Torgler & Schneider, 2007 (Belgium, Swizerland and Spain)	-				+		+	0		+		+	national pride +; culture 0 and religiosity +
Torgler, 2003b (Canada)	+	+								+			pride + and religiosity +
Trivedi et al., 2004 (Canada)									+				
McGee, 2008 (Demark)					+								
McGee et al., 2008 (Estonia)		+			+								

Randlane, 2012 (Estonia)	+	0	+		0					+			
McGee, 2008b (Finland)					+								
McGee et al., 2009 (Germany)		+											
Dwenger et al., 2014 (Germany)													peer influence +/-
Hennighausen & Heinemann, 2015 (Germany)					0						+		financial self-interest +/-
Pántya, et al., 2016 (Hungary)											+		familiarity - and additional money-
Kastlunger et al., 2010 (Italy)		+											

Gupta & McGee, 2010 (New Zealand)	+	+	+										Hindu +
Marriott, 2016 (New Zealand and Australia)	+					-	+						
Woodward & Tan, 2015 (New Zealand)									+	+	+		complexity of tax system- and compliance cost-
Ross & McGree, 2012 (Netherlands)	+/-	+	+		0	+/-				+	+	+	important of God +
Sá et al., 2014 (Portugal)						-	+/-			+		+	pride +
Alm & Gomez, 2008 (Spain)	+	0	-		0					+	+	+	

Alm & Torgler, 2006 (Spain & US)								+				+	
Martinez-Vazquez & Torgler,2009 (Spain)	+	+			+		+			+			pride +; individual satisfaction + and novelty-
Torgler, 2005a (Switzerland)			+						0			+	national pride+
Besley et al., 2014 (UK)											+		
Hallsworth et al., 2014 (UK)													peer influence +/-
Hasseldine et al., 2007 (UK)													
Bobek et al., 2013 (US)									+				peer influence +/-

Halla, 2012 (US)													culture +/-
Jimenez & Iyer, 2016 (US)										+	+		
McGee et al., 2006 (US)		+											
Tax Foundation, 2006 (US)								-			+		tax complexity -
Tax Foundation, 2007 (US)								-			+		tax complexity -
Torgler, 2012b (US)			-		+	-				+			national pride+ and religiosity +
Wilson & Sheffrin,											+		

2005 (US)													
Yeaton & Stellenwerf, 2008 (US)		+											

Notes: (…) country of origin

+ positively associated with tax compliance attitudes

- negatively associated with tax compliance attitudes

0 no significant link to tax compliance attitudes

Multiple symbols for individual studies indicate that the association with tax compliance attitudes differs across scenarios or different segments of the population

Multiple symbols in the countries indicate that the overall effect on tax compliance attitudes is uncertain

Table 4 Relationship of determinants to tax compliance attitudes in developing countries from 2000 to 2016

Author / Year	Age AGE 65+	Gender FEMALE	Education level	Tax knowledge	Marital status MARRIED	Income level	Occupation status FULL TIME EMPLOYED	Tax rate	Probability of detection	Trust	Fairness	Direct democracy	Other determinants
McGee & Rossi, 2008 (Argentina)		0											
Ho et al., 2013 (China)	0	0	0		0				0		+		other peers +/- ; culture +/-
McGee, 2014 (China)	0	0											region +/-
McGee & Noronha, 2008 (Southern China and Macau)		0											
McGee & Butt, 2008 (Hong Kong, China)		0											

Pomeranz, 2015 (Chile)									+				
Badu & Charive, 2015 (Ethiopia)										+		+	
Abubakari &Christopher, 2013 (Ghana)			0	+				-		+	+		
Ibrahim et al., 2015 (Ghana)	-		0		0	+	0			+		0	one’s fear God 0
McGree & George, 2008 (India)		0											
Williams & Horodnic, 2015 (Latvia, and Lithuania)													the shadow economy -

McGee & Preobragenskaya, 2008 (Kazahstan)		0											
Ristovska et al., 2013 (Macedonia)	+	0				+				+			national pride + ; satisfaction with life +
Al-Mamun et al., 2014 (Malaysia)	+	0	+			+							ethnicity+
Isa & Yusoff, 2014 (Malaysia)									+				
Kasipillai & Abdul-Jabbar, 2006 (Malaysia)		+		+									
Loo & Ho, 2005 (Malaysia)				+									
Mohdali et al., 2014 (Malaysia)									+/-				religiosity +/-

Cyan et al., 2016 (Pakistan)		+		+			+/-						region +/-
McGee & Bernal, 2006 (Poland)		0											
McGee, 2006 (Romania)		-											
Alm et al., 2006 (Russia)	+	+	0		0	-	+			+			national pride +
Ali et al., 2014 (South Africa, Kenya, Tanzania and Uganda)				+							+		satisfied with public service + and frequently payment to non-state actors -
Jayawardane, 2016 (Sri Lanka)								-	+		+		other peers do not comply – and IRD is weak -

McGee & Benk, 2011 (Turkey)		-											
Helhel & Ahmed, 2014 (Yemen)	+/0	+						-	+		+		complexity of tax law- and tax amnesties +
Nyamwanza et al., 2014 (Zimbabwe)	0	0	0							+	+		compliance cost-
Torgler, 2004 (Asia countries, including Bangladesh, China, India, Japan, Philippines, South Korea and Taiwan)	+						+			+			national pride +
Torgler, 2012a (Eastern European countries)	+	+	+		+		+			+			religiosity +
Torgler, 2003a (Transition countries)		+			+	+	+			+			

Torgler, 2005b (17 Latin American countries)								-	+/-				

Notes: (…) country of origin

+ positively associated with tax compliance attitudes

- negatively associated with tax compliance attitudes

0 no significant link to tax compliance attitudes

Multiple symbols for individual studies indicate that the association with tax compliance attitudes differs across scenarios or different segments of the population

Multiple symbols in the countries indicate that the overall effect on tax compliance attitudes is uncertain

Table 5 A summary of the effects of selected determinants on tax compliance attitudes in developed countries

Countries Selected	**Age AGE 65+**	**Gender FEMALE**	**Education level**	**Tax knowledge**	**Marital status MARRIED**	**Income level**	**Occupation status FULL TIME EMPLOYED**	**Tax rate**	**Probability of detection**
Austria			-		+	-	+		
Australia	+	+	+/-/0	+	+	+/-	+/0	-	+
Belgium					+		+	0	
Canada	+	+							+
Demark					+				
Estonia	+	+/0	+		+/0				
Finland					+				
Germany		+			0	-			
Italy		+							

Netherlands	+/-	+	+		0	+/-			
New Zealand	+	+	+			-	+/-		
Portugal						-			
Spain	+	+/0	-		+/0		+	+	
Switzerland			+						-
Sweden						+			
United Kingdom									+
United States		+	-		+	-		-	+

Notes: + positively associated with tax compliance attitudes; - negatively associated with tax compliance attitudes; 0 no significant link to tax compliance attitudes; multiple symbols for individual studies indicate that the association with tax compliance attitudes differs across scenarios or different segments of the population; and multiple symbols in the countries indicate that the overall effect on tax compliance attitudes is uncertain.

Table 6 A summary of effects of trust, fairness, direct democracy, national pride, peer influence, culture and religiosity on tax compliance attitudes in developed countries

Countries selected	**Trust in government**	**Fairness**	**Direct democracy**	**National pride**	**Peer influence**	**Culture**	**Religiosity**
Austria	+	+	+	+			+
Australia	+	+	+	+			+
Belgium	+			+			
Canada	+			+			+
Estonia	+						
Finland							
Germany		+			+/-		
Hungary		+					
New Zealand	+	+					

Netherlands	+	+	+				+
Portugal	+		+	+			
Spain	+	+		+			
Switzerland	+		+	+			
United Kingdom		+			+/-		
United States	+	+	+	+	+/-		+

Notes: + positively associated with tax compliance attitudes; - negatively associated with tax compliance attitudes; 0 no significant link to tax compliance attitudes; multiple symbols for individual studies indicate that the association with tax compliance attitudes differs across scenarios or different segments of the population; and multiple symbols in the countries indicate that the overall effect on tax compliance attitudes is uncertain.

Table 7 A summary of the effects of selected determinants on tax compliance attitudes in developing countries

Countries selected	**Age AGE 65+**	**Gender FEMALE**	**Education level**	**Tax knowledge**	**Marital status MARRIED**	**Income level**	**Occupation status FULL-TIME EMPLOYED**	**Tax rate**	**Probability of detection**
Argentina		0							
China	0	0	0		0				0
Chile									+
Ethiopia									
Ghana			0	+	0	+	0	-	
India		0							
Indonesia		0							
Iran		0				-			
Latvia					+				
Lithuania					+				

Macedonia	+	0							
Malaysia		+	+						+/-
Pakistan		+		+			+/-		
Philippines						-			
Poland		0			+	-	+		
Romania		-			+		+		
Russia	+	+	0		+	-	+		
Sri Lanka								-	+
Tanzania		-		+		-	+		
Turkey		-							
Yemen	+/0	+						-	+
Zimbabwe	0	0	0						

Notes: + positively associated with tax compliance attitudes; - negatively associated with tax compliance attitudes; 0 no significant link to tax compliance attitudes; multiple symbols for individual studies indicate that the association with tax compliance attitudes differs across scenarios or different segments of the population; and multiple symbols in the countries indicate that the overall effect on tax compliance attitudes is uncertain.

Table 8 A summary of the effects of trust, fairness, direct democracy, national pride, peer influence, culture and religiosity on tax compliance attitudes in developing countries

Countries selected	**Trust in government**	**Fairness**	**Direct democracy**	**National pride**	**Peer influence**	**Culture**	**Religiosity**
China		+			+/-	+	
Ethiopia	+		+				
Ghana	+		0				0
India	+		+	+			
Kenya		+					
Latvia	+			+			
Lithuania	+			+			
Macedonia	+			+			
Maylaysia							+
Poland	+						

Russia	+			+			
South Africa		+			+/-		
Sri Lanka	+						
Tanzania		+					
Slovenia	+			+			
Uganda		+					
Yemen		+					
Zimbabwe	+	+					
Notes: + positively associated with tax compliance attitudes; - negatively associated with tax compliance attitudes; 0 no significant link to tax compliance attitudes; multiple symbols for individual studies indicate that the association with tax compliance attitudes differs across scenarios or different segments of the population; and multiple symbols in the countries indicate that the overall effect on tax compliance attitudes is uncertain.							

Table 9 A summary of research types and sampling methods for developed countries from 2000 to 2016

Author/published year/country	**Research type**	**Sampling method**
Casal et al., 2016 (Austria)	Experimental study	Participants were 123 students of the University of Vienna. The experiment was conducted in the Social Science Research Lab at the Faculty of Psychology at the University of Vienna and programmed with the experimental economics software z-Tree.
Torgler& Schneider, 2005 (Austria)	Survey study	The data used in this study are taken from the 1990 WVS data and the 1999 EVS data.
Devos, 2008 (Australia)	Survey study	Respondents were selected according to various locations across Australia, taxable incomes above $6,000, age, gender, occupation, ethnicity, education level, and lodgement of their last income tax return. An electronic survey questionnaire was distributed by a market research company via a web link on behalf of the author to ascertain Australian personal taxpayers' attitudes towards tax evasion.
Devos, 2012 (Australia)	Mixed methods	This study employed a mix method approach drawing data from both a survey instrument and taxpayer interviews. The survey instrument comprised six sections including 30 questions with a seven-point scale. In particular, the

		evader data was obtained from the 2004, 2005 and 2006 Australian Taxation Office records. The survey was employed for a random selection of tax evader (non-compliant taxpayers). While six participants were interviewed over telephone. The researcher thought that the findings from interview data would complement and cross validate the result from the surveys.
McGee & Bose, 2007 (Australia)	Survey study	The survey was distributed to faculty, graduate and undergraduate students at La Trobe University, Victoria University, the Melbourne campus of Central Queensland University, RMIT University and the Caulfield campus of Monash University. Three hundred fifteen (315) usable responses were collected. The survey consisted of 18 statements. Each statement generally began with the phrase “Tax evasion is ethical if….” Respondents were instructed to insert a number from 1 to 7 in the space provided to reflect the extent of their agreement or disagreement with each of the 18 statements.
Murphy, 2003 (Australia)	Survey study	The survey data used a random sample of 6,000 Australian tax scheme investors and all of them were selected from the ATO’s case files. A total of 32, 493 names and addresses were available for selection, and the sample of 6,000 was drawn using probability proportional to size sampling within each state and territory in Australia. A response rate of 43 per cent was obtained. Survey data were collected over a

		seven-month period between January and July 2002.
Torgler & Murphy, 2004 (Australia)	Survey study	The authors used the Australian waves of the1981 and 1995 Word Values Survey data.
Wenzel, 2004 (Australia)	Survey study	The data were taken from the Community, Hopes, Fears, and Actions Survey. The self-completion questionnaire was sent to a sample of 7754 Australian citizens drawn from the Australian electoral roll.
Torgler & Schneider, 2007 (Belgium, Swizerland and Spain)	Survey study	The data were taken from the WVS (1990-1193, 1995-1999) and the EVS 1999.
Torgler, 2003b (Canada)	Survey study	The researcher used empirical analysis WVS data from Canada (1990).
Trivedi et al., 2004 (Canada)	Mixed methods	The study focused on students recruited from Canadian university, McMaster University in Hamilton. The Researchers held a three-hour session to obtain demographic data, administer the survey and then conduct the experiment.
McGee, 2008b (including 15 transition countries and two developed western countries, such as Demark and Finland)	Survey study	This study used the data that was compiled in a study by Inglehart et al (2004). The Inglehart study asked hundreds of questions to more than 200,000 people in 85 countries. One of those questions (F116) was on the ethics of tax evasion. The question asked whether the respondent would cheat on taxed if there an opportunity to do so. Responses were tallied using a ten-point Likert scale where 1

		represented never justifiable and 10 represented always justifiable.
Randlane, 2012 (Estonia)	Survey study	A total of 1,080 people had participated in the study according to age and gender groups. The author adopted face to face interviews which allows close contact with respondents.
McGee et al., 2005 (Germany)	Survey study	A survey was distributed to 252 students and faculty at Hamburg University in Germany. Respondents were asked whether they thought six particular acts were ethically justifiable. They were asked to select a number from 1 (never justifiable) to 10 (always justifiable).
Hennighausen &Heinemann, 2015 (Germany)	Survey study	The researcher adopted survey data from the 2000 German General Social Survey (GGSS). The survey data provided the participants' socioeconomic status as well as their economic and fairness beliefs, fairness preferences and judgements on the status quo distribution.
Pántya, et al., 2016 (Hungary)	Experimental study	The study included 20 rounds with a real-effort task in each round, determining participants' experimental income. Participants of 191 made decisions about their tax payments from round-to-round in four different experimental conditions.
Kastlunger et al., 2010 (Italy)	Experimental study	The authors used experiments to investigate tax compliance of women and men and focused on gender-role orientation as well as on the second-to-fourth digit ratio (2D:4D), a putative marker of prenatal testosterone exposure. In 60

		experimental periods, participants were endowed with a certain amount of money representing income and had to pay taxes. They were audited with a certain probability and fined in case of detected evasion.
Gupta & McGee, 2010 (New Zealand)	Survey study	The study included three parts. In part one, the authors adopted a sample of total 967 undergraduate and graduate accounting, business and economic, law and medical students and faculty in Auckland, New Zealand. The survey question with 10 point Likert scale asked same question that the WVS asked (whether it was justifiable to cheat taxes if you had chance).
Marriott, 2016 (New Zealand and Australia)	Survey study	The data were collected from 1500 survey participants in New Zealand and 1500 in Australia. The online survey with Likert scales were used to capture attitudes in the study.
Woodward & Tan, 2015 (New Zealand)	Mixed methods	This study employed a mix method approach drawing data from both a survey instrument and taxpayer interviews. In particular, a postal survey was distributed to 300 randomly selected SBOs in Southland and semi-structured interviews were arranged with eight SBOs.
Ross & McGee, 2012a (Netherlands)	Survey study	The data were provided by the Internal Revenue Service and the WVS data. In particular, the Internal Revenue Service provided demographic data for the study.

Sá et al., 2014 (Portugal)	Survey study	The authors employed a random sample of 1,514 participants who aged over 17 years from EVS data 2008.
Torgler, 2005 (Switzerland)	Survey study	The researcher used survey data from International Social Survey Programme 1998.
Alm & Gomez, 2008 (Spain)	Survey study	This study employed a data set from Spain's Survey of Fiscal Policy. In particular, the research used micro-level data from the Study 2615 of the Centre for Sociological Research in Spain on 'Public Opinion and Fiscal Policy" in July 2005. The Study surveyed 2,483 Spanish taxpayers who over 18 years old. The sample covered 167 municipalities and 47 out of 50 provinces.
Martinez-Vazquez & Torgler,2009 (Spain)	Survey study	The authors used survey data from the WVS and the EVS for the years 1981, 1990, 1995 and 1999/2000.
Besley et al., 2014 (UK)	Field experimental study	The researchers exploited two kinds of natural experiments in the UK. The first is the poll tax itself which replaced a long-standing system of taxation by local governments (councils) based on rental values of properties. The second set of natural experiments exploits narrow election victories in non-synchronous council elections in the period following the poll tax.

Hasseldine et al., 2007 (UK)	Experimental study	The UK Inland Revenue selected the sample, issued letters, and provided anonymous tax-return data to the authors. The initial sample selection identified the population of taxpayers who had reported their tax return between£ $14,000 and $15,000 for the two consecutive years of 1999 and 2000. A random sample was selected from that population and then randomly assigned to one of six groups.
Hallsworth et al., 2016 (UK)	Field experiment	The authors collaborated in a natural field experiment on payment of taxes in the UK. Most participants also have to make two tax payments a year – the first by January 31, the second by July 31. The authors incorporated the test messages into the letters sent to Self-Assessment taxpayers who had not made the correct payment by July 31, 2011. These procedures resulted in a sample of101,471 individuals geographically distributed across England, Wales, and Northern Ireland.
Alm & Torgler, 2006 (US)	Survey study	The data were collected from the WVS for a wide range of countries over several years of data
Bobek et al., 2013 (US)	Experimental study	Data were collected from 174 experienced taxpayers as participants. Participants responded to a hypothetical tax compliance dilemma in this study.

Jimenez & Iyer, 2016 (US)	Survey study	Data were collected from 217 U.S. taxpayers.
Tax Foundation, 2006 (US)	Survey study	Survey results are based on a Harris Interactive online survey conducted on behalf of the Tax Foundation within the United States between March 8 and 16, 2006 among a nationwide cross section of 2,017 adults aged 18 and older.
Tax Foundation, 2007 (US)	Survey study	All results are based on a Harris Interactive survey conducted on behalf of the Tax Foundation between March 5 and 12, 2007. The survey covers a nationwide cross section of 2,012 U.S. adults aged 18 or older.
Torgler, 2012b (US)	Survey	The data were collected from the WVS data of 1982, 1990, and 1995.
Whillans et al., 2016 (US)	Experimental study	The researcher chose a target of 200 participants based on research assessing the impact of psychological interventions on tax attitudes. In particular, the researcher recruited 223 (Study 1), 196 (Study 2), and 216 (Study 3) participants from Amazon.com's mTuk market place (Study 1 and Study 2) or from the University of British Columbia (Study 3).
Wilson & Sheffrin, 2005 (US)	Survey study	The data for this study were from the Attitude Toward Income Tax Survey (2000), which was carried by Roper Strarch Worldwide on behalf of the IRS. The survey was conducted through telephone interviews. The respondent for the

		survey was wage-and-investment and self-employed taxpayers who filed returns in 1999 for the 1998 tax year. 6,912 cases were selected by the researchers.
Yeaton & Stellenwerf, 2008 (US)	Survey study	The data were collected from 362 students and 89 faculty members of Ramapo College of New Jersey. To gain additional insight, the sample was then divided based upon the gender and educational level of the participants.

Notes: (…) country of origin

Table 10 A summary of research types and sampling methods for developing countries from 2000 to 2016

Author/published year/country	**Research type**	**Sampling method**
McGee & Rossi, 2008 (Argentina)	Survey study	A survey was constructed and distributed to a group of graduate and advanced undergraduate business, economics, theology, philosophy and law students at Austral University in Argentina. A total of 218 usable responses were obtained.
Ho et al., 2013 (China)	Survey study	Data were collected from a survey of a convenience sample of 152 office workers in China using an anonymous, self-administered questionnaire.
McGee, 2014 (China)	Survey study	Data for this study were collected from the wave 6 (2012) WVS. The sample size was more than 1800 and a 10-point Likert Scale was adopted.
McGee & Noronga, 2008 (Southern China and Macau)	Survey study	186 social science, business, and economics and other undergraduate students from Zhongshan University in China and 187 undergraduate and graduate business students from the University of Macau.

McGee & Butt,2008 (HongKong, China)	Survey study	The present study reports on the findings of a survey that was distributed to business students at a university in Hong Kong. The survey instrument consisted of 15 statements that reflect the three views on the ethics of tax evasion that have emerged over the centuries. Participants were asked to rate the extent of their agreement with each statement by placing a number from 1 to 7 in the space provided. Scores were compared to determine whether the responses were significantly different by state. 15 Hong Kong business students.
Pomeranz, 2015 (Chile)	Experiment study	Randomized filed studies in this study were conducted in collaboration with the Chilean Tax Authority. A sample of 5,600 firms was selected for the Spillover Experiment.
Badu & Charive, 2015 (Ethiopia)	Survey study	Data were collected from a survey of 500 business profit taxpayers by means of self-administered questionnaire. The authors used a five-point Likert type-scale to measure the variables. Correlations analysis and regression analysis were employed to examine the relationship between variables such as between tax morale and attitude of taxpayers towards government and legal system.
Abubakari &Christopher, 2013 (Ghana)	Survey study	Survey responses from questionnaires administered to operators of SMEs in Tamale, were quantitatively analysed.

Ibrahim et al., 2015 (Ghana)	Survey study	The authors used the sixth wave of the WVS data in determining the drivers of tax morale in Ghana. The probit model with different specifications was used to determine robustness of the results.
McGee & George,2008 (India)	Survey study	Data were collected from graduate business students in Kerala.
McGee & Preobragenskaya, 2008 (Kazakhstan)	Survey study	Data were from 79 accounting and business students.
Williams & Horodnic, 2015 (Latvia and Lithuania)	Survey study	A 2013 survey is reported involving 3036 face-to-face interviews in these 3 Baltic nations.
Ristovska et al., 2013 (Macedonia)	Survey study	Data for this study were from the fourth wave (2008) of the EVS.
Al-Mamun et al., 2014 (Malaysia)	Survey study	Data were collected from a sample of taxpayers by using internet questionnaires survey. In this study, primary data will be used. The primary data are collected from 300 sets of questionnaires that distributed to those are taxpayers. All questionnaires were distributed only throughout the states of Johor Bahru, Johor and thus only residents of Johor Bahru,

		Johor manage to access the questionnaires.
Kasipillai & Abdul-Jabbar, 2006 (Malaysia)	Survey study	This study involved taxpayers from all major urban towns located in the northern states of Peninsular Malaysia, namely, George Town, Alor Setar, Kulim, Sungai Petani and Kangar. There were 156 participants willing to be interviewed by way of responding to a structured questionnaire.
Loo & Ho, 2005 (Malaysia)	Survey study	The primary source of data employed is the administration of questionnaires. The small and medium enterprises in Benin City in Edo state, Nigeria constitute the population of the study. A total of four hundred respondents were randomly sampled from small and medium enterprises in Benin City, Nigeria. Two hundred and seventy seven (277) were retrieved and analyzed.
Mohdali et al., 2014 (Malaysia)	Survey study	The authors conducted a self-administered survey to gather the data in this study. There were total 302 responses with 197 responses was received from the drop-off survey and 105 responses from the online survey.
Cyan et al., 2016 (Pakistan)	Survey study	The novel data for individual taxpayers were collected in 2014 by Pakistan's Federal Board of Revenue to estimate a binary probit regression model.

McGee & Bernal, 2006 (Poland)	Survey study	The survey consisted of 18 statements, representing the 15 issues and 3 viewpoints that have emerged over the centuries plus 3 statements representing more recent issues. Participants were asked to signify the extent of their agreement with each statement by placing a number from 1 to 7 in the space provided. Two hundred seventy-nine (279) usable responses were received.
Alm et al., 2006 (Russia)	Survey study	The data were collected from the WVS and the EVS for the years 1991, 1995 and 1999.
Ali et al., 2014 (Kenya, Tanzania, Uganda, and South Africa)	Survey study	The data were collected from the new round 5 of Afrobarometer surveys.
Jayawardane, 2016 (Sri Lanka)	Survey study	The study was conducted in Colombo, the capital city of Sri Lanka in Colombo district and to evaluate and identify the most influential factors that reduce taxpayer compliance and to establish relationship between attitude and compliance behavior. This research was the survey involving individual Taxpayers' in Colombo city. A questionnaire was design using five point lickert scales and distributed individual taxpayers in Colombo Metropolitan area in order to learn their opinions. Data was collected from Two Hundred (200) taxpayers

		and analyse it using descriptive statistics.
McGee & Benk, 2011 (Turkey)	Survey study	The data were from the latest WVS data on attitudes toward tax evasion in Turkey.
Helhel & Ahmed, 2014 (Yemen)	Survey study	The study was conducted in Sana'a, the capital city of Yemen to evaluate and rank the factors that reduce taxpayer compliance. A questionnaire was designed using a five point Likert scale and distributed to tax payers in order to learn their opinions.
Nyamwanza et al., 2014 (Zimbabwe)	Mixed methods	Data were collected from the owners/managers of 50 businesses in the retail sector in Gweru. The researcher used survey with the Likert-type scale. Radom sampling was used and the questionnaires were sent to 120 retail shop owners/managers. Linear regression analysis and correlation coefficient were used to analysis the data. Supplementary interviews were also employed to gather more detailed information from 10 of the respondents.
Torgler, 2004 (Asia countries)	Survey study	The author used the WVS data. All the WVS surveys were done by face to face to interviews at the respondents' home in the respective languages, with a sample universe comprising all adult citizen, ages 18 and older. The proxy of morale in this study is the justifiability of

		cheating on taxes.
Torgler, 2012a (Eastern European countries)	Survey study	The author used the EVS 2008. The survey collected data on the basic values and belief of people throughout of Eastern European. The proxy of morale in this study is the justifiability of cheating on taxes.
Torgler, 2005b (Latin America countries)	Survey study	The author used the Latinobarometro 1998 and the WVS (1981-1997). The proxy of morale in this study is the justifiability of cheating on taxes.
Torgler, 2003a (Transition countries)	Survey study	The author worked with the 1989-1993 and 1995-1998 WVS rounds.

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