

*Full Length Research Paper*

# **A critical review of Fischer tax compliance model: A research synthesis**

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**The primary objective of this paper is to summarize and review extant literature concerning Fischer tax compliance model for a dual purpose. Firstly, the Fischer tax compliance model provides a framework for understanding the influence of those socio-economic and psychological components on tax payers' compliance decision. We suggest a partial refinement to this model by incorporating another important environmental factor - culture and the interaction effect between noncompliance opportunity and tax system/structure on tax compliance. Secondly, the review enables us to synthesize this topic so as to help researchers identify those gaps and consider promising future directions for further study.**

**Key words:** Tax evasion, Fischer model, tax compliance determinants, Hofstede, cultural dimensions.

## **INTRODUCTION**

Tax evasion is a universal phenomenon that takes place in all societies and economic systems including both developed and developing countries. In the US, it is estimated that the extent of tax gap (the difference between taxes owed and taxes filed) for 2001 were US\$ 353 billion (IRS, 2006). This concern is particularly severe for developing countries given the rapid growth of investment in their economies and their lack of adequate experience in dealing with this problem. In China, the tax evasion by multinationals resulted in revenue loss amounted to US\$ 3.88 billion each year (Asia Times, April 11 2007). In Hong Kong, the Inland revenue department reported that about US \$ 1.15 billion was collected from 2003 - 07 back tax and penalties (IRD, 2007).

Thus, tax compliance is growing international concerns for tax authorities and public policy makers as tax evasion seriously threatens the capacity of government to raise public revenue.

Because of the significance of this issue, tax compliance determinants based on Fischer model (Fischer et al., 1992) have been an important subject of research in developed countries over the past couple of years (e.g. Andreoni et al., 1998; Ritsema et al., 2003; Houston and Tran, 2001; Richardson, 2006). So far, there has been no

comprehensive review of the literature related to this issue so as to refine the Fischer model and identify those gaps for future research areas. Thus, the primary objective of this paper is to summarize and review extant literature concerning Fischer tax compliance model for a dual purpose, firstly, the Fischer tax compliance model provides a framework for understanding the influence of those socio-economic and psychological components on taxpayers' compliance decision. We suggest a partial refinement to this model by incorporating another important environmental factor - culture and the interaction effect between non-compliance opportunity and tax system/structure on tax compliance. Secondly, the review enables us to synthesize this topic so as to help researchers identify those gaps and consider promising future directions for further study.

## **FISCHER MODEL**

Jackson and Milliron (1986) carry out a comprehensive review of the tax compliance literature and identify 14 key factors that have been studied by researcher on tax compliance. These factors are categorized by Fischer and associates (Fischer et al., 1992) into 4 groups in his expanded model (Fischer Model): (i) demographic (e.g. age, gender and education) (ii) noncompliance opportunity (e.g. income level, income source and occupation), (iii) attitudes and perceptions (e.g. fairness of the tax

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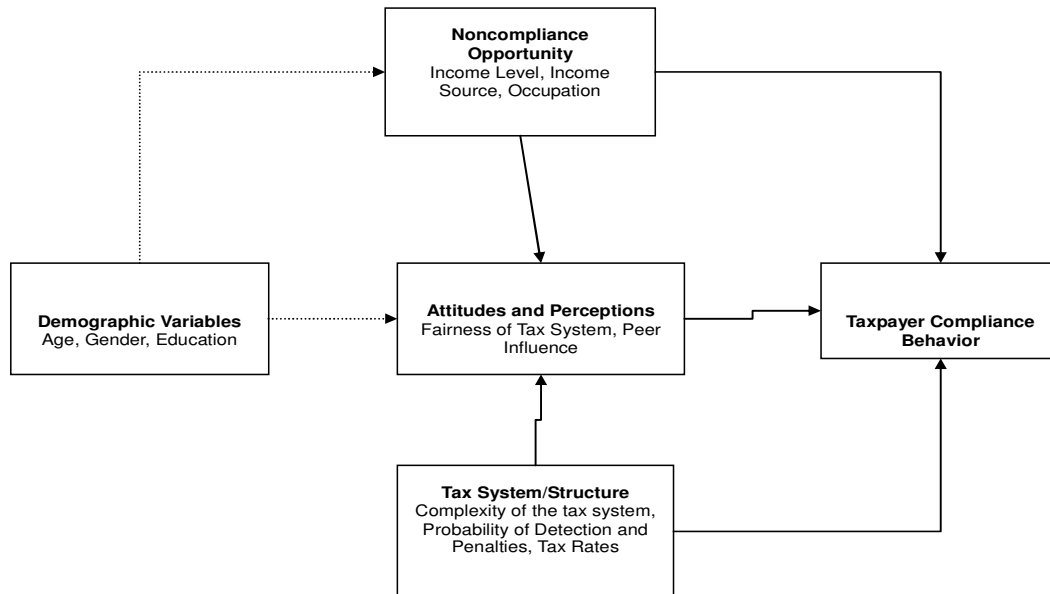


Figure 1. Fisher et al. (1992) tax compliance model.

system and peer influence) and (iv) tax system/structure (e.g. complexity of the tax system, probability of detection and penalties and tax rates). Thus Fisher model of tax compliance incorporates economic, sociological and psychological factors into a comprehensive one. The Fisher model is illustrated in Figure 1 and elaborated in the following sections.

## DEMOGRAPHIC VARIABLES

The relationship between demographic variables and tax compliance has long been of interest (Tittle, 1980). 3 major personal characteristics for which there is evidence of a relationship are age, gender and education (Jackson and Milliron, 1986). The Fischer model suggests that demographic variables indirectly affect taxpayer compliance by their impacts on noncompliance opportunities and attitudes and perceptions.

### Age

A common demographic variable is the taxpayers' age. A positive link between age and taxpayer compliance is reported (Jackson and Milliron, 1986). In addition, data coming from the taxpayer compliance measurement program (TCMP) of the internal revenue service also indicate that "noncompliance is significantly less common and of lower magnitude among householders in which either the head or the head's spouse is over age 65" (Andreoni et al., 1998). In general, young taxpayers are more willing to take risks and are less sensitive to sanctions. Based on the 1997 Arkansas tax penalty

amnesty program, Ritsema et al. (2003) also find that age is a factor for intentional evaders, with younger taxpayers less compliant.

### Gender

Early research (Tittle, 1980) testing the tax compliance level of males versus females reports that females are more likely to tax compliance. Traditionally, "females have been identified with conforming roles, moral restraints and more conservative life pattern" (Jackson and Milliron, 1986). All these attributes may promote higher tax compliance. Experimental study conducted by Baldry (1987) also finds that females tend to tax compliance by more than males do. Jackson and Jaouen (1989) also reveal a significant gender difference by treatment group from a pool of potential jurors. However, the study by Houston and Tran (2001) indicates a higher proportion of tax evasion committed by women than men.

### Education

Education, as a demographic variable relates to the taxpayers' ability to comprehend and comply or not comply with the tax laws (Jackson and Milliron, 1986). 2 aspects of education have been distinguished: "the general degree of fiscal knowledge and the degree of knowledge involving evasion opportunities" (Groenland and Veldhoven, 1983). This knowledge is considered to be important for attitudes towards tax compliance. Song and Yarbrough (1978) have included education as a background variable in their experiment.

They find that those with more fiscal knowledge had more positive tax ethics scores (attitudes towards tax compliance will be discussed below) than those with lower fiscal knowledge. Eriksen and Fallan (1996) also find that specific tax knowledge was positively linked to taxpayer attitude. The study conducted by Chan et al. (2000) reveal that higher education is directly linked to an increased likelihood of tax compliance. By using randomized response technique for a mail questionnaire survey of Australian individuals, Houston and Tran (2001) also find that taxpayers without tertiary education tend to have lower proportions of tax compliance than their counterparts with tertiary education. In addition, Richardson (2006) also reports that general education level is significantly related to tax evasion.

### **NON-COMPLIANCE OPPORTUNITY**

In the Fischer model, noncompliance opportunity can affect taxpayer compliance directly through income level, income source and occupation and indirectly through attitudes and perceptions.

#### **Income level**

Almost all the theoretical model indicates that as income rises, tax evasions should increase over most ranges (Andreoni et al., 1998). Vogel (1974) finds that respondents who report an improvement in individual financial/income status during the past 5 years are more likely to commit tax evasion than those who report a deterioration of their financial/income status during the same period. Houston and Tran (2001) also reveal the respondents in the lower income group tend to have a lower proportion of tax compliance by under-reporting income and by over-claiming expenses than their counterparts in the higher income group. By investigating participants in the 1997 Arkansas Tax penalty amnesty program, Ritsema et al. (2003) also find that income level is positively related to the tax owed.

#### **Income source**

Tax payers vary in terms of the opportunities available to them to overstating expenses and understating incomes. Greater tax noncompliance opportunity is generally resulted from self-employment and income sources not subject to withholding taxes. In one of the first tax compliance studies, Groves (1958) argues that income source has a significant impact on tax compliance. Surveys by Aitken and Bonneville (1980) and Groenland and Voldhoven (1983) find that taxpayers who are self-employed are more likely to commit various forms of tax non-compliance. Houston and Tran (2001) also reveal a

significantly higher proportion of tax evasion among respondents who are self-employed. In addition Vogel (1974) also reveals that 39% of Swedish respondents who acknowledged receiving additional income that was not taxable at the source also committed evading taxes in comparison with 21% of those acknowledging no such additional income. Based on the poll tax in Tanzania, Fjeldstad and Semboja (2001) find support for differences in opportunities for tax noncompliance. "Employees paying their head-tax through a tax withholding system have fewer opportunities to evade than the self-employed" (Fjeldstad and Semboja, 2001). Richardson (2006) also reports that income source is significantly related to tax evasion.

#### **Occupation**

This refers to an individual's employment or earnings activity (Jackson and Milliron, 1986). Sutherland (1949) argues that tax evasion is considered as a white-collar crime, committed by an individual of respectability and high social status in the course of performing his employment. In addition, TCMP data also indicate that "among all sole proprietors those who engaged in sales from fixed locations (car dealerships, stores, restaurants etc) understated taxes by the greatest percentage" (Andreoni et al., 1998).

### **ATTITUDES AND PERCEPTIONS**

The Fischer model suggests 2 major considerations for altering taxpayers' attitudes and perceptions to tax compliance are the fairness of the tax system and peer influence.

#### **Fairness of tax system**

It is widely believed by tax administrators and the taxpayers that growing dissatisfaction with the fairness of tax system is the major causes for increasing tax non-compliance. Tax fairness consists of at least 2 different dimensions. "One dimension appears to involve the equity of the trade - the benefits received for the tax dollars given. The other dimension appears to involve the equity of the taxpayer's burden in reference to that of other individuals" Jackson and Milliron (1986, p. 137). Thus unfairness of the tax system may reflect taxpayers' perceptions that they are overpaying taxes in relation to the value of the services provided by government or in relation to what other taxpayers pay. Porcano (1984) finds that taxpayers' need and ability to pay are the most significant variables related to perceptions of fairness of the tax system. Other surveys conducted by Scott and Grasmick (1982) and Spicer and Lundstedt (1976) indicate

that respondents who believe that the tax system is unfair are more likely to commit tax noncompliance behavior. Based on a quasi-experiment with pre-testing and post-testing of 2 student groups, Eriksen and Fallan (1996) also reveal that an important means of ensuring tax compliance is to provide more tax knowledge so as to improve people's perception of the fairness of the tax system. The study conducted by Richardson (2006) also indicates that perceived fairness of tax system is significantly related to tax evasion.

### **Peer influence**

Peers are usually referred to taxpayers' associates and include friends, relatives and colleagues (Jackson and Milliron, 1986). The peer influence is reflected in an individual's expectations in relation to the approval or disapproval of that tax noncompliance behavior. Grasmick and Scott (1982) indicate that respondents with peers who practice tax noncompliance are more likely to commit as well. The survey conducted by Mason et al. (1975) finds that people committing tax noncompliance are more likely to discuss tax matters with their peers. The study conducted by Chan et al. (2000) also reveals that taxpayers may still commit noncompliance so long as this noncompliance is consistent with in-group expectations and norms.

## **TAX SYSTEM/STRUCTURE**

It is widely acknowledged that the extent of tax compliance in many developing countries has been decreasing. The underdeveloped tax system/structure is one of the major causes for this phenomenon. In the Fischer Model, the effectiveness of tax system is affected by complexity of tax system, probability of detection and penalties and tax rates.

### **Complexity of tax system**

As the tax law has become increasingly complex, complexity has come to be recognized as a possible reason for tax noncompliance (Jackson and Milliron, 1986). In the context of tax compliance decisions, complexity should include 2 dimensions, excessive detail in the tax rules and numerous computations required. Taxpayers should be able to understand the tax rules for computations by which they are to be taxed. These tax rules should aim to be simple, understandable and clear in order to enhance tax compliance. In general, complexity of tax system should increase as the number of criteria specified by tax laws increase. Clotfelter (1983) reveals that complexity of tax system has been associated with greater underreporting of tax. Milliron (1985) also finds

that complexity has a significant effect on tax compliance decision. Richardson (2006) also reports that tax law complexity is significantly related to tax evasion.

### **Probability of detection and penalties**

In general, higher audit probabilities and severe penalties encourage tax compliance. Probability of detection refers to the likelihood that the tax authorities will discover an individual's noncompliance and seek to remedy the evasion. Individuals normally would like to evade their tax liabilities entirely and the only reason they might not do so is that there is some non-zero probability of being caught (Massimo, 1993). Raising the probability of detection will increase tax compliance and tax audit represents one of the effective detective measures used by tax authorities (Alm, 1991). In fact, tax audits are considered to have both direct deterrent effect on the taxpayers actually audited and indirect deterrent effect on taxpayers not audited (Alm et al., 2004). Witte and Woodbury (1985) find a significant positive relationship between the risk of tax audit and the rate of voluntary tax compliance. However, the study by Beron et al. (1990) reveals that tax audit exert only a modest positive effect on tax compliance.

Another important factor affecting tax compliance is the relationship between tax compliance and the severity of sanctions. The idea is that fear of penalties prohibits tax noncompliance behavior. Establishing an effective system to penalize tax evaders is an important measure to encourage tax compliance. Taxpayers will be more likely to comply if noncompliance may result in severe penalties. According to the theoretical work conducted by Allingham and Sandmo (1972), tax compliance can be increased by increasing the penalties associated with it. To be effective, penalties must be applied speedily and forcefully. Witte and Woodbury (1985) report a significant relationship between the severity of criminal sanctions and tax compliance. Other studies by Grasmick and Scott (1982) and Tittle (1980) also indicate that respondents acknowledging some form of tax noncompliance are less likely if such acts would result in severe penalties. The experimental studies conducted by Hasseldine et al. (2007) also show that severity of sanctions has significant effects on tax compliance behavior.

### **Tax rates**

The third major construct of tax system/structure in the Fischer model is tax rates. Empirical evidence has suggested that progressive versus flat tax rate is the significant structural variable in association with tax compliance behavior (Clotfelter, 1983). Research using experiments typically find that high tax rates are linked to less tax compliance (Friedland et al., 1978). Using the

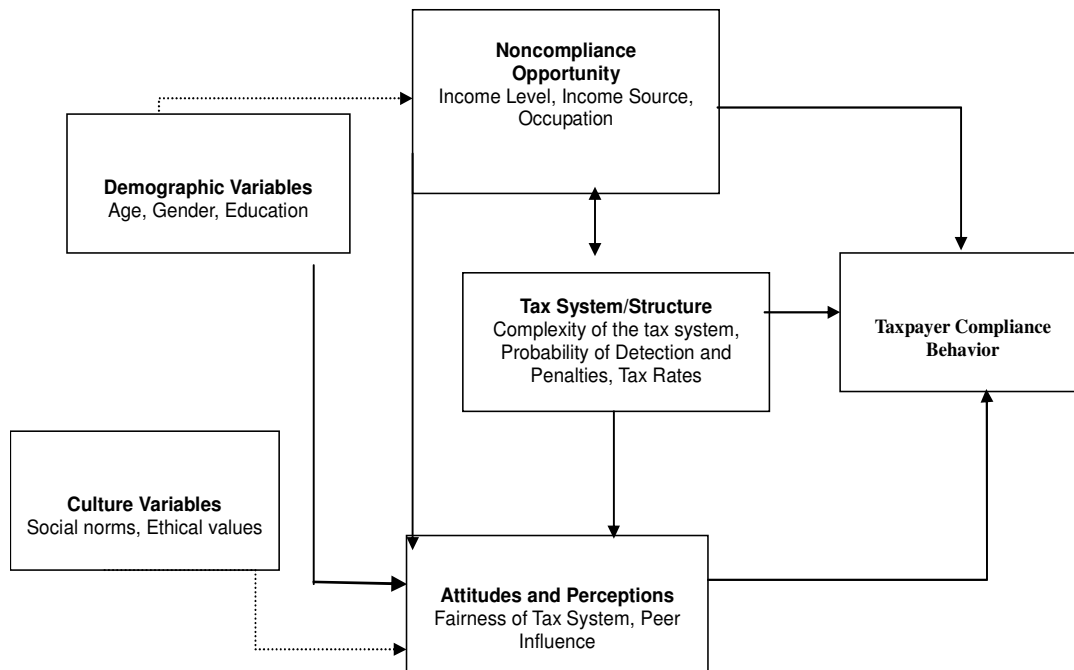


Figure 2. Modified Fisher et al. (1992) tax compliance model.

audited tax returns for individual taxpayers in Jamaica, Alm et al. (1993) also reveal that the probability of underreporting and the level of underreporting are positively related to the marginal tax rate.

### MODIFICATIONS TO FISHER MODEL

The Fischer model provides a framework for understanding the influence of those socio-economic and psychological components on taxpayers' compliance decision. We suggest a partial refinement to this model by incorporating another important environmental factor - culture and the interaction effect between noncompliance opportunity and tax system/structure on tax compliance (Figure 2). We will illustrate this interaction effect by using income level and tax rates.

### Culture

Culture is considered to be a powerful environmental factor that affects the taxpayer's compliance. Different social norms and ethical values will create different incentives for tax compliance. In fact, ethical values influenced by social norms may prohibit taxpayers from engaging in tax evasion (Blanthorne and Kaplan, 2008). The cultural framework most widely used is that of Hofstede (1980). Based on an attitude survey of about 116,000 IBN employees, Hofstede identifies 4 underlying

societal values; individualism, power distance, uncertainty avoidance and masculinity. Cultural research has found significant differences between the US and Chinese citizens (Hofstede, 1991). Not all cultural dimensions affect taxpayers' compliance. Chan et al. (2000) suggests that the cultural dimension affecting tax compliance is collectivism and individualism. In Hofstede's model, individualism and collectivism refer to the degree of interdependence a society maintains among individuals (Hofstede, 1991). The cultural dimension of individualism relates to the degree of integration a society maintains among its members. A high individualism culture is signified by people focusing on themselves rather than on the group to which they belong. Under this perspective, an individual is seen as separable from and independent of a group affiliation. People in such low individualism culture as Chinese citizens, they tend to be collectivists who are expected to follow and subscribe to the values of their in-groups in order to gain peer acceptance and social status (Hofstede, 1991). In contrast, a high individualism culture such as US citizens is signified by people focusing on themselves rather than on the group to which they belong. Under this perspective, they view themselves as distinct entities and place great value on individual rights. These cultural differences may have a direct impact on ethical values and moral development and ultimately affecting tax compliance decisions. The study conducted by Chan et al. (2000) indicates that culture of the taxpayers has an impact on taxpayer compliance efforts.

### Interaction effect between income level and tax rates

Income level and tax rates are found to be negatively related to tax-compliance (Andreoni et al., 1998; Houston and Tran, 2001). Further, these 2 variables may jointly have a negative interaction effect (that is, 2 variables considered together), which is over and above that of their individual impact, on tax compliance. A taxpayer with high income and high tax rates would have higher motivation to be aggressive in tax reporting. The case would be more noticeable if the taxpayer is facing a progressive tax system. On the other hand, a taxpayer with high income but low tax rates would have lower motivation to be aggressive in tax reporting.

### Conclusions and suggestions for future research

This paper summarizes extant research on the tax compliance determinants based on Fischer's model. This synthesis should be of interest to academic researchers as identifying the tax compliance determinants and resolving tax compliance problems could provide challenging research opportunities in taxation. Despite the many studies as discussed above, much work remains to be done if we would like to develop fully understanding of this intrinsically complex subject and the means of promoting tax compliance. Based on the syntheses of research on tax compliance, our conclusions about those gaps on tax compliance determinants studies and areas for future research are as follows

As discussed above, existing research provides insights into the different components of Fischer's model without investigating their inter-relationship. Additional theory-building research to further extend Fisher model might be worthwhile. To be of practical relevance, such research should concentrate on identifying and understanding variables and their inter-relationship that act as key determinants of tax compliance.

Extant literature on the compliance including both analytical and empirical studies mainly focused on individual noncompliance. There is little or no research on corporate tax noncompliance. Greater attention should be paid to the complex corporate noncompliance. This area is of considerable significance for the function of fair tax systems between individuals and corporations.

Tax compliance research conducted so far is mainly focused on developed countries. In view of the inadequacies in the institutional framework and insufficient expertise and resources to monitor the intricacies of the tax compliance problems, developing countries are particularly vulnerable to tax noncompliance. There is an urgent need for more empirical and institutional research on the tax compliance behaviors in developing countries.

A final issue that warrants attention is the effect of culture on tax compliance. Although the tax compliance research in other cultures other than the Anglo-Saxon countries could provide insight into the cultural effects on

tax compliance behavior; little work has been done on comparative tax compliance under different cultural environments. In fact different cultures will create different incentives and opportunities for tax compliance or evasion. Thus future work needs to incorporate cultural dimensions into tax compliance research. In addition, research based on a greater longitudinal emphasis could also be carried out so as to assess the impact of changes on cultural dimensions.

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