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Determinants of Tax Compliance Behaviour: The Case of Sri Lankan Taxpayers

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This study examines the determinants of individual taxpayers' tax compliance behavior in Sri Lanka under new tax laws enforced in 2018 using data collected through a structured questionnaire from a sample of 384 individual taxpayers in Sri Lanka. Findings derived through a regression analysis reveal a significant portion of individual taxpayers' tax compliance behavior in Sri Lanka is explained by variables such as tax rate, fines and penalties and fairness and transparency of the tax system. It also found tax awareness and knowledge moderates the impact of the above variables on individual taxpayers' tax compliance behavior. The findings imply that Sri Lankan government could raise tax rates and fines, and penalties to enhance individual taxpayers' tax compliance behaviour. Strengthening tax awareness programmes would also increase the positive impact of tax rates and fines, and penalties on individual taxpayers' tax compliance behaviour. This is the first study to examine determinants of individual taxpayers' tax compliance behavior in Sri Lanka under the latest tax laws. The study also enhanced robustness of estimates of the impact of the determinants of individual tax payers' tax compliance behavior on their compliance level in Sri Lanka by incorporating the moderating effect of tax awareness and knowledge.

JEL Codes: C31, M40, M41, M48 and E62

1. Introduction

Tax is a mandatory financial charge imposed by the government on taxpayers of a country (James & Nobes, 2000) as any government in the world requires financial assistance to meet the expectations of its public (Jayawardana & Low, 2016). Jayawardana and Low (2016) further emphasise that the policy makers in developed and developing countries use taxes to raise revenue to finance public goods and services, and funding of government expenses. Furthermore, Auld and Miller (1984) have identified taxes as an instrument that stabilizes the economy and reduces private demand so that resources can be released for the use of public sector in a country. Therefore, taxation could be defined as a systematic process implemented by the government to collect taxes from taxpayers. Meantime, many developing countries are now re-focusing on taxation to eliminate over-dependency on aids or any other source of funds for development from foreign sources (Edward, Christian, & Alexander, 2015). As per the World Bank's statistics, total tax and contribution rate as a percentage of profits had been drastically decreased during 2005 – 2018 in Sri Lanka.

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In 2005, it was 52% whereas by 2018, it had been declined to 40% (World Bank, 2018) indicating that people resist in paying taxes on their income.

According to Andreoni et al. (1998), the problem of tax non-compliance is old as imposition of taxes itself. Tax non-compliance is a significant issue for many tax authorities and it is not an easy task to persuade taxpayers to comply with tax requirement voluntarily (Kiow et al., 2017). This is not only a critical issue in developing countries but also in developed countries in the world (Jayawardana & Low, 2017). As per Torgler (2003), low-tax compliance restricts the capacity of collecting funds for the development of a country. According to Annual Performance Report 2018 issued by the Inland Revenue Department (IRD) of Sri Lanka, average tax compliance level of individual taxpayers of Sri Lanka during 2013-2018 is around 50%.

Jayawardana and Low (2016) have categorised Sri Lanka as a low-income country and low-tax compliance country. Moreover, IRD of Sri Lanka is still struggling to keep efficient and effective tax administration in order to ensure higher level of tax compliance among taxpayers in Sri Lanka. In general, tax revenue as a percentage of gross domestic products (GDP) is supposed to increase along with the increase of the per capita GDP (Jayawardana & Low, 2016). Furthermore, they argue that this is not happening in the Sri Lankan context. In Sri Lanka, the country's per capita GDP has been increasing over the years but tax revenue to GDP ratio is decreasing continuously year by year. For example, tax revenue to GDP ratio in 1990 was 19.5% and it was dropped down to 12.5% in 2011. Tax revenue to GDP ratio in Sri Lanka has decreased further by 1.5% from 2011 to 2014 (Jayawardana & Low, 2016). These facts evident that Sri Lanka is struggling to maintain sufficient tax compliance level over the years. As a solution to this issue the government of Sri Lanka annulled Inland Revenue Act, No. 10 of 2006 and enforced Inland Revenue Act, No. 24 of 2017 with effect from 01.04.2018.

Jayawardana and Low (2017) have argued that there is a compliance issue among individual taxpayers in Sri Lanka and found four key factors such as tax rate, probability of being audited, non-complexity of tax system and probability of detection which are causing non-compliance. Besides that, the loopholes in the enforcement actions and weaknesses in the tax audit cause to increase the level of non-compliance in Sri Lanka (Jayawardana & Low, 2016). However, the findings of Jayawardana and Low (2016; 2017), only tax compliance studies available in Sri Lanka so far, need to upgrade as the studies were carried out using data related to the period when Inland Revenue Act, No. 10 of 2006 was effective. Moreover, we argue that the regression models used in Jayawardana and Low (2016; 2017) needs improvements as they have not incorporated tax awareness and knowledge as a moderator of the impact of determinants of individual taxpayers' tax compliance behavior on their tax compliance level as proposed by Kasipillai, Aripin, and Amran (2013). Furthermore, separate studies for different countries are required as each country has its own approach to managing tax compliance attitude and each has different tax laws and regulations for the factors affecting tax compliance attitude appear to vary among countries (Deyganto, 2018). Corresponding to the above concerns the present study attempts to answer the research question; what are the determinants of individual taxpayers' tax compliance behavior in Sri Lanka under new tax laws enforced in 2018. Additionally, study questions whether there is a moderating effect from tax awareness and knowledge in the relationship between the determinants of individual taxpayers' tax compliance behaviour of Sri Lanka, which has not considered in extant studies carried out in Sri Lanka.

The remainder of the paper is organized as follows. Section 2 of the paper reviews relevant literature for the study, Section 3 explains research design of the study, Section 4 presents results of the data analysis, and Section 5 carries out the discussion of findings and concludes the paper.

2. Literature Review

2.1 Tax Compliance

Practitioners and researchers have attempted to define tax compliance in various ways. For instance, Mohamad, Ahamad, and Deris (2010) define tax compliance as the degree to which taxpayer complies or fails to comply with the tax laws of a country. James and Alley (2002) claimed that tax compliance as the willingness of persons, corporate and other taxable entities to comply with tax laws as well as compliance with requirements of tax administration voluntarily. Therefore, tax compliance is generally defined as the willingness to act according to the tax laws in order to maintain a stable economy within the country (Andreoni et al., 1998). However, Kirchler, Hoelzl, and Wahl (2007) perceived a similar ideology that tax compliance is a duty and behavior in compliance to the tax rules, regardless of the motives for compliance. Jackson and Milliron (1986) claimed that tax compliance as reporting of all income sources and paying all taxes by fulfilling the provisions, laws and regulations and court judgments. As per the definitions mentioned thus far it is understood that taxpayers must file their tax returns, disclose all sources of taxable income accurately, and disbursing all payable taxes within prescribed period without having waited to follow-up actions from tax authorities (Kiow et al., 2017).

2.2 Determinants of Tax Compliance

In the tradition of tax compliance research, many empirical studies have investigated a group of factors that influence voluntary tax compliance of corporate and individual tax payers such as level of actual income, tax rate, fines and penalties, tax audit, fairness of the tax system and other factors (Barbuta-Misu, 2011; Jayawardana & Low, 2017). Furthermore, Allinghan and Sandmo (1972) were the first researchers to conduct a study on tax compliance behaviour of taxpayers and they came up with a model called A-S model. In the model, the compliance decisions of taxpayer are considered to be affected by tax rate, audit probabilities, fines and penalties. Later on, few models were introduced by some other researchers like Alm (1991), and Jackson and Milliron (1986) on the determinants of tax compliance. Now the focus of this Section shifts to review determinants of taxpayers' tax compliance behavior.

2.2.1 Tax Rate

Tax rate is one of the economic factors which affect tax compliance behaviour of individual taxpayers. Economic models of rational compliance decisions provide either mixed prediction of the effect of the marginal tax rate on compliance or predict that increase in tax rate would increase compliance (Allingham & Sandmo, 1972). On the contrary, most of empirical studies found that higher tax rates decrease compliance. Pommerehne and Weck-Hannemann (1996) perceived a similar ideology that people tend to evade taxes with increasing marginal tax rates. However, theoretical models generate no clear prediction on the effect of tax rate on compliance. Thus, unclear effect of the tax rate has attracted the attention of tax researchers and motivated them to come up with more certain and concrete evidence on the impact of tax rates on compliance. Allingham and Sandmo (1972) conducted a study to find the relationship between actual income, tax rate, penalty and tax audit on compliance. However, the study concluded that taxpayers may either to fully report income or report less, regardless of the tax rates. Therefore, tax rate appears to be insignificant in determining tax compliance decisions of the individual taxpayers. Porcano (1988) argued that there is no relationship between tax rate and tax compliance. Despite that, there is a belief that if the tax rate is zero, all income sources would be reported. But if the tax rate is 100%, none of the income sources would be reported for the tax purposes (Jackson & Milliron, 1986).
Therefore, the motivation to non-compliance is going to be considerably reduced by eliminating progressive tax rate structure (Clotfelter, 1983). He further claimed that, reducing tax rate is not the only option available to discourage tax evasion. However, the tax rate is a key factor in determining tax compliance behaviour although the precise effect continues to be unclear and debatable (Kirchler et al., 2007). Furthermore, raising marginal tax rate would motivate taxpayers to evade taxes (Witte & Woodbury, 1985). But reducing tax rate may not necessarily increase tax compliance (Kirchler et al., 2007; Trivedi, Shehata, & Lynn, 2003).

Economists and government officials often assume that tax payers are keenly aware of the marginal tax rates (Gensemer, Lean & Neenan, 1965). They are also assumed that changes in marginal tax rates will be noticed and alter the behaviour of the taxpayers. Standard public finance texts tirelessly examine the substitution effect of changes in marginal tax rates on the behaviour of the taxpayers. Such exercises in economic theory are significant only to the extent that taxpayers are in fact aware of their marginal tax rates and changes in the rates.

However, the findings of them show that a significant portion of taxpayers are unaware of their marginal tax rates (Gensemer et al., 1965).

2.2.2Fines and Penalties

Penalties are considered to be negative punishments to those who violate the laws and regulations, whereas, a fine is money that a court of law or other authority decides which has to be paid as punishment for a crime or other offence. In general, it can be said that fines and penalties are negative punishments given to the people who break rules (Savitri & Musfialdy, 2015). Therefore, it is understood that penalties are made with the goal of keeping taxpayers aligned with tax laws (Nurlis, 2015). As a result, taxpayers will comply with their tax payments if the view of penalties will be more detrimental. Hence, penalties will guarantee that tax provisions will be followed. In other words, the penalties are a deterrent to the taxpayer who does not violate the laws of taxation. However, the structure of penalty system does change across the countries. For an example, there can be various types of penalty rates by different tax subjects or different structure of penalty rates based on types of taxpayers (Barbuta-Misu, 2011). It means that, penalty rates have been separately applied to the different tax subjects such as individual income tax, capital gain income tax, value added tax and so on. In addition to that, penalty rates which are applicable for types of evasion, non-filling, and under-reporting also different from each other. Normally, penalty rates are much higher for the intentional evasions than unintentional evasions. According to the tax laws, there are two kinds of penalties namely administrative sanctions and criminal sanctions. The administrative sanctions refer to punishments for non-compliance with the approved order in the state's administration. Furthermore, administrative sanctions are often in financial nature, whereas, criminal penalties are involved in imprisonment procedures of the party who violates the law as per court judgment. However, different researchers have given different explanations of the effect of the penalties on the tax compliance behavior. As per Allinghan and Sandmo (1972), the effect of penalties on tax compliance is clear and un-doubtable. It shows that imposing higher penalties discourage the behavior of cheating. Some empirical studies showed that fines are significantly related to tax compliance than audit probabilities (Park & Hyun, 2003). Andreoni et al. (1998) argue that penalty rate has a positive relationship between tax compliance. The increasing tax avoidance and tax resistance due to an increase of fines puts into a question how fines should be assessed as effective. On one side, fines should be high enough to decrease expected tax evasion and assure its deterrent effect on taxpayers (Andreoni et al., 1998). On the other hand, if fines are too high, the tax system would be perceived as unfair and taxpayers would use legal methods to avoid their taxes. Therefore, the views of taxpayers on tax penalties will affect taxpayers' compliance in paying taxes. Taxpayers need to know about negative consequences if the laws are violated. If not, they will have to face unfavorable consequences due to un-intentional mistakes that they do. Therefore, better understanding about the punishment would enhance tax awareness and tax knowledge. As a result, they can safeguard from fines and penalties while complying with respective tax regulations.

2.2.3 Level of Actual Income

In general, taxpayers are divided as self-employed taxpayers and employed taxpayers. As per Spicer and Lundstedt (1976) self-employed taxpayers have more possibilities to avoid taxes than employed taxpayers. This is because of self-employed taxpayers have more opportunities for tax evasion and these opportunities might get increased with number of different income sources that they earn. Hence, it is understood that in compliance decisions, the level of income is considered to be one of the key factors. As per Kirchler et al. (2007) income earned by a person can be categorised as income earned by effortless jobs or income earned by working hard. As per their findings participants are less compliant when they report income earned by low effort than hard earned income. However, government officials often assume that taxpayers and especially high income earners are keenly aware of their marginal tax rates. Gensemer et al. (1965) have conducted a study to discover whether or not high income taxpayers are aware of their marginal tax rates and what factors might explain their tax rate awareness. Their findings show that a significant portion of high income taxpayers do not know their approximate marginal tax rates and that awareness of marginal tax rates is best explained by income, education, occupation and investment activities.

2.2.4 Fairness and Transparency of Tax System

When questions from citizens about what they think about tax system they often emphasize on fairness concerns (Braithwaitte, 2007; Taylor, 2003). Fairness considerations suggest different types of areas of fairness such as distributive justice, procedural justice and redistributive justice. Distributive justice refers to exchange of resources and both benefits and cost, procedural justice means process of distributing available resources and redistributive justice refers to the perceived appropriateness of sanctions (Kirchler, et al., 2007). According to Spicer and Lundstedt (1976) tax payers are concerned about the fairness of their outcomes, and they want to be treated on their merits, efforts and needs. However, if an individual's tax burden is heavier than other individuals, tax compliance is likely to reduce. Furthermore, Juan, Lasheras, and Mayo (1994) disclosed that taxpayers are concerned about fairness of outcomes of the group and expect a relatively fair treatment to them. If a particular group perceives its tax burden as heavier than other groups, tax non-compliance is likely to increase within the group. If the tax system is perceived as unfair, compliance level is likely to decrease whereas if it seems to be fair, taxpayers are complied with tax laws of the country voluntarily.

In relation to procedural justice, the component essential for perceived fairness are neutrality of procedure, trustworthiness of tax authorities and politeness, dignified and respectful treatment (Tyler & Lind, 1992). Same as in distributive justice, comparisons are made on the individual, group and societal level. On the individual level, taxpayers consider the treatment by tax authorities, information provided in relation to cost of non-compliance, administration and dynamic allocation of resources (Kirchler et al., 2007). It was argued that increasing level of information given with regards to tax law and explanation for changes can increase the fairness of the tax system (Wartick, 1994; Carnes & Cuccia, 1996). Furthermore, procedural fairness on the individual level and culture of interaction are really important to build trust (Job, Stout, & Smith, 2007). On the group and societal level, taxpayers consider neutrality of tax officers regarding sub-categories, such as vocational group, income groups, or cohorts. If tax officials are treating fairly to every taxpayer, trust and voluntary tax compliance is likely to increase on the individual, group and societal level. Regarding redistributive justice, unreasonable and intrusive audits and unfair penalties may lead to negative attitudes towards the tax officials and taxes in general (Spicer & Lundstedt, 1976). Therefore, unfavorable redistributive justice could lead to increase distrust while increasing the level of non-compliance. Though, there is no consistent research findings available on the impact of fairness of tax system on compliance, perceived fairness on tax system might increase voluntary tax compliance.

2.3 Review of Relevant Past Finding on Tax Compliance Behaviour

Andreoni et al. (1998) have examined several key factors that influence tax compliance namely, income and tax rates, demographic and social factors, penalties and audit probabilities, prior audits, tax complexity and few more factors. The study found that though some factors have positive or negative association with tax compliance, the relationships are not significant. As per Kiow et al. (2017), tax compliance behaviour of individual taxpayers is influenced by ethical perception of individual taxpayers and their ethical perception is affected by public governance and transparency in government operations. Further, the findings show that ethical perception plays a significant role to persuade taxpayers to report their income accurately. Nurlis (2015) examined the effect of taxpayer awareness, knowledge, tax penalties and tax authority services on tax compliance at Jabodetabek & Bandung. They found that taxpayer awareness, knowledge, tax penalties and tax services have a significant effect on individual taxpayer's compliance on the tax office in Jakarta.

There are few studies that have conducted to investigate the compliance behaviour in Sri Lanka. Jayawardana and Low (2017) have conducted a study to explore key determinants of tax compliance behaviour among individual taxpayers in Sri Lanka. They considered tax rate, probability of detection, non-complexity of tax system and probability of detection as key factors and found that all other variable are having significant association with tax compliance except tax rate.

Outcome of the review of relevant past studies on individual taxpayers' compliance behaviour shows mixed findings. Some scholars (for example, Andreoni et al., 1998) found that there is a significant correction between tax rate and tax compliance. While Jayawardana and Low (2017) found that there is a significant association between probability of detection and non-complexity of tax system with tax compliance. In addition to that, some researchers have prioritized the determinants of tax compliance based on the country. As per Nurlis (2015) taxpayer awareness, knowledge, tax penalties and tax services have a significant effect on individual taxpayer's compliance in Jakarta. Kiow et al. (2017) found that tax compliance behaviour of individual taxpayers in Malaysia is influenced by ethical perception of individual taxpayers and their ethical perception is affected by public governance and transparency in government operations.

However, there are only few studies have carried out in Sri Lanka relating to individual tax compliance behaviour. Jayawardana and Low (2017) investigated few factors which influence individual tax compliance behaviour but still there are other key factors crucial for tax compliance. As example, fines and penalties, the level of actual income, fairness and transparency of the tax system are significantly influencing on the tax compliance behaviour (Savitri & Musfialdy, 2015; Spicer & Lundstedt, 1976). Furthermore, previous studies carried out in Sri Lanka on individual tax compliance behaviour were considered the direct relationship between key determinants and tax compliance behaviour. However, none of the studies has focused on the impact of tax awareness and knowledge as moderator into the relationship of key determinants with individual tax compliance behaviour in Sri Lanka. Therefore, present study has given significant attention on the moderator effect of tax awareness and knowledge since tax awareness and knowledge twist the association between determinants and individual's income tax compliance behaviour. As a result, it is essential to carry out a separate study to review the other key factors that could influence on tax compliance behaviour of the individual taxpayers in Sri Lanka along with the moderator effect of tax awareness and knowledge.

3. Research Design

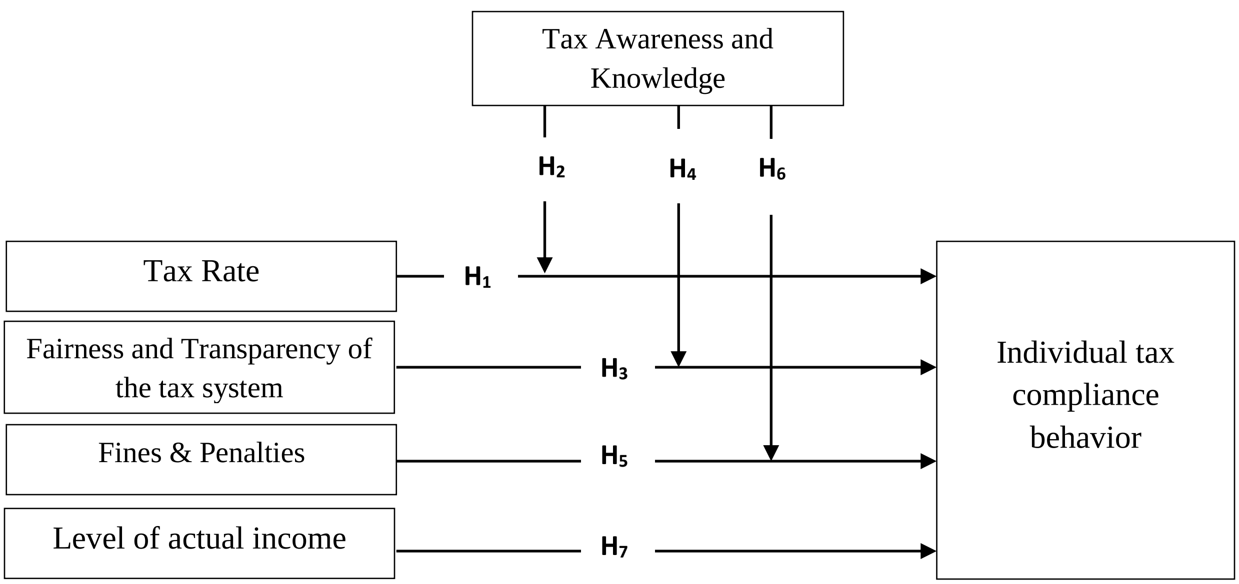
Theory of Planned Behaviour is an important theory which presents within the scope of social psychology and tries to explain human behaviour (Benk, Cakmak, & Budak, 2011). The Theory of Planned Behaviour predicts an individual's intention to engage in a behaviour at a specific time and place. It posits that individual behaviour is driven by behavioral intentions (Ajzen, 1991). Generally, the strong the intention is more likely the behaviour will be performed. Attitude toward this behaviour refers to the degree to which a person has positive or negative feelings of the behaviour of interest. The theory explains that the behaviour is generated by the individual's intention to behave (Nurlis, 2015).

However, such intention to behave is determined by three key factors (Fishbein & Ajzen, 1975). They are; behavioural beliefs, normative beliefs and control beliefs. Behavioural belief explains that the subjective probabilities of the behaviour will produce a given outcome or an experience. Although a person may hold many behavioural beliefs with respect to any behaviour, only a relatively few numbers are readily accessible at a given moment (Nurlis, 2015). Normative belief means that beliefs about the normative expectations of others and motivation to meet their expectations. In other words, the beliefs of others on how they think whether he or she will perform the behaviour. Hence, it relates to a person's perception of the social environment around the behaviour. If tax authorities are provided sufficient and satisfactory level of service to taxpayers, then they will consider that the tax system as efficient and effective. As a result, it leads to motivate taxpayers to obey the tax laws and fulfill the tax obligations on time (Nurlis, 2015). Control beliefs elaborate on an individual's beliefs about the presence of factors that may facilitate or hinder the performance of the behaviour and the perception of how strong the things that support and inhibit behaviour (Nurlis, 2015). Ajzen (2005) defines attitudes as tendencies to respond favorably or unfavorably to particular objects, people, institutions, or events.

Therefore, a positive attitude will encourage tax compliance, whereas a negative attitude will trigger tax non-compliance (Marti, 2010). Bidin, Shamsudin, Shalihen, and Mohd (2011) have proved empirically that attitudes have positive influence on intention. The more positive attitude of taxpayers has to comply with the tax obligations, the greater the intention to fulfill them. Normative norm is built through the influence of the people around, the influence of friends. However, the greater subjective norm will increase the tax professionals to be non-compliant (Mustikasari, 2008). The attitude of the taxpayer to behave positively or negatively forms through the knowledge and experience of tax professionals or the experiences of others. However, this intention can change due to the influence of surrounding people. In case the attitude of a tax professional towards tax compliance is positive, but the individual taxpayers do not support his attitude, then, the intention of the tax professional can change exactly the opposite way (Bobek & Hatfield, 2003; Mustikasari, 2008). Therefore, the level of tax compliance is based on tax payer's perception of how strong the level of tax penalties persuades taxpayer's tax obedient (Andreoni et al., 1998). Hence, it is justified that behavioural beliefs, normative beliefs and control beliefs are determining a person's behaviour. Therefore, tax compliance decisions are determined by behaviours of the taxpayers toward the tax system and other factors.

Apart from that, the present study examines the moderator effect of tax awareness and knowledge on the relationship between the determinants of tax compliance and the compliance level of Sri Lankan taxpayers. Every taxpayer is essentially required a certain level of tax knowledge in order to be complied with the tax obligations on time (Loo, Mckerchar, & Hansford, 2009). Kasipillai, Aripin, and Amran (2013) examined that tax awareness and knowledge is functioning as a moderator which may twist the association between determinants and individual's income tax compliance behaviour. They also proved that, tax awareness and knowledge have a significant moderating role on the relationship between individual factors and individual's income tax compliance behaviour. Corresponding to the above theoretical assumptions and empirical findings the present study adopts the following conceptual framework.

Figure 1: Conceptual Framework



3.1 Hypotheses

As depicted in the Figure 1 the following hypotheses are developed in the present study.

H_1: There is a significant relationship between tax rate and individual taxpayers' tax compliance behaviour.

H_2: Tax awareness and knowledge moderates the relationship between the tax rate and individual taxpayers' tax compliance behaviour.

H_3: There is a significant relationship between fairness and transparency of tax system with individual taxpayers' tax compliance behaviour.

H_4: Tax awareness and knowledge moderates the relationship between the fairness and transparency of tax system with individual taxpayers' tax compliance behaviour.

H_5: There is a significant relationship between fines and penalties with individual taxpayers' tax compliance behaviour.

H_6: Tax awareness and knowledge moderates the relationship between fines and penalties with individual taxpayers' tax compliance behaviour.

H_7: There is a significant relationship between the level of actual income and individual taxpayers' tax compliance behaviour.

3.2 Sample and data

Population of the study is consisted of individual taxpayers who have taxable income and registered at the Inland Revenue Department as a taxpayer. There were 249,759 individuals registered for the year of assessment 2018/2019. In addition to the above criteria, source of income was checked. The main reason behind such criteria was people who are employed in a particular organization have no option other than compulsory Pay-As-You-Earn (PAYE) deduction on their employment income. Therefore, employed taxpayers are considered to be 100% compliance in this study. However, if a taxpayer has several income sources such as business income, investment income and other income the taxpayer has to compute the final tax liability on self-assessment basis and pay to the IRD on quarterly basis. This is where non-compliance occurs in the part of individual tax payers.

Given the nature of the study the authors used convenient sampling technique to select required amount of respondents. According to Krejcie and Morgan (1970) 384 individual taxpayers were selected by accommodating a margin of error of 5% (95% of confident level).

A survey was conducted to collect data using a structured questionnaire. The questionnaire was developed through the operationalization of variables (see Annexure A) using a 5-point Likert Scale.

4. Data Analysis

Before carrying out correlation, regression and moderator analyses the authors tested the suitability of the data for such analysis by running required preliminary tests. According to Tavakol and Dennick (2011), reliability and validity are significant elements of a study as they are used to improve the effectiveness of a research work's assessment and evaluation. The Cronbach Alpha internal consistency reliability method was used accordingly. Since most literature commonly quoted that the alpha coefficient exceeds the amount of 0.70, the measurement reliability has reached (Peterson, 1994). The present study reported an alpha value of 0.91. Hence, it could conclude that the reliability of data collected for the study remains high. Before estimating the multiple regression models (Models 1 and 2) relevant tests were carried out to test normality and multicollinearity assumptions. The relevant tests for normality ensured the data set is normally distributed. It was identified a maximum Variance Inflation Factor as 3.31 and minimum tolerance level as 0.30 indicating that there is no multicollinearity issue among independent variables of the model.

$$ITCB_i = \beta_0 + \beta_1 TR_i + \beta_2 FP_i + \beta_3 FTTS_i + \beta_4 LAI_i + \varepsilon_i \text{ ………………………………(1)}$$
$$ITCB_i = \beta_{01} + \beta_5 TR_i * TAK_i + \beta_6 FP_i * TAK_i + \beta_7 FTTS_i * TAK_i + \beta_8 LAI_i + \varepsilon_i \text{ ....(2)}$$

Where, $ITCB_i$ is the individual tax compliance behaviour which is depending on the independent variables such as tax rate (TR_i), fines and penalties (FP_i), fairness and transparency of tax system ($FTTS_i$), level of actual income (LAI_i) and tax awareness and knowledge (TAK_i). β_0 and β_{01} are the constants of the models and ε_i represents error term.

Correlation coefficients were obtained (see Table 1) as the first step to test the associations between independent variables and the dependent variable.

Table 1: Correlation Coefficients

Variable	Correlation Coefficient	*P*- value
Tax rate (TR_i)	0.574	0.000*
Fines and penalties (FP_i)	0.759	0.000*
Fairness and transparency of tax system ($FTTS_i$)	0.575	0.000*
Level of actual income (LAI_i)	0.749	0.000*

Notes: Number of observations 384; * denotes significance level $p<0.01$.

According to the Table 1 all independent variables indicate a significant positive association between individual tax payers' tax compliance behaviour in Sri Lanka. Precisely, tax rate and transparency of tax system indicate moderate positive relationships. Level of actual income and fines and penalties have strong positive relationships with individual tax payers' tax compliance behaviour in Sri Lanka. Hence H_1, H_3, H_5 and H_7 of the study are supported as expected based on the correlation coefficients.

Table 2 presents regression estimates without incorporating the effect of the moderator (i.e. tax awareness and knowledge [TAK_i]) of the study. The table evident a statistically significant positive impact from tax rate (TR_i), fines and penalties (FP_i), fairness and transparency of tax system ($FTTS_i$) on individual taxpayers' tax compliance behaviour ($ITCB_i$). Therefore, H_1, H_3, H_5 of the study are supported as predicted but before incorporating the effect of the moderator (i.e. TAK_i) of the study. However, the reported significant negative impact from level of actual income (LAI_i) leads to reject *H_7* of the study. R-squired value of 0.693 illustrates the independent variables of the model together explains approximately 69% of the variance of individual taxpayers' tax compliance behaviour of Sri Lanka. A high *F*-statistic (i.e. 217.49) shows the model is efficient and robust in estimating the individual taxpayers' tax compliance behaviour.

Table 2: Regression Estimates without Moderator Effect

Model 1: $\boldsymbol{ITCB_i = \beta_0 + \beta_1 TR_i + \beta_2 FP_i + \beta_3 FTTS_i + \beta_4 LAI_i + \varepsilon_i}$		
β_0	0.355	0.000*
β_1	0.120	0.001*
β_2	0.478	0.000*
β_3	0.426	0.000*
β_4	-0.093	0.036**

Notes: Number of observations is 384; * and ** denote significance level *$p<0.01$* and *$p<0.05$*, respectively; adjusted R-squared is 0.693 and *F*-statistic is 217.49

Table 3: Regression Estimates with the Moderator Effect

Model 2: $ITCB_i = \beta_{01} + \beta_5 TR_i * TAK_i + \beta_6 FP_i * TAK_i + \beta_7 FTTS_i * TAK_i + \beta_8 LAI_i + \varepsilon_i$		
β_0	1.361	0.000*
β_5	0.916	0.000*
β_6	0.538	0.043**
β_7	-0.658	0.048**
β_8	-0.077	0.063***

Notes: Number of observations is 384; *, ** and *** denote significance level *$p<0.01$*, *$p<0.05$*and *$p<0.1$* , respectively; adjusted R-squared is 0.746 and *F*-statistic is 161.42

Regression coefficients in Table 3 evident the strength of relationships reported in Table 2 has been changed after including the moderating variable in to the regression analysis. Although the statistically significant positive impact from tax rate (TR_i) and fines and penalties (FP_i) on individual taxpayers' tax compliance behaviour ($ITCB_i$) remains in the same direction, the positive impact from fairness and transparency of tax system ($FTTS_i$) has become negative with the effect of the moderator. The negative impact from the level of actual income (LAI_i) at 95% confidence level has been diluted to a negative influence at 90% confidence level after incorporating the moderator into the analysis. More specifically the degree of positive impacts from tax rate (TR_i) and fines and penalties (FP_i) on individual taxpayers' tax compliance behaviour ($ITCB_i$) has increased after incorporating the moderator (TAK_i). Thus *H_1, H_2, H_3,* and *H_4* of the study can be established as expected whereas *H_5* and *H_7* rejected (see Table 3). However, *H_6* of the study can be established as there is a change from positive impact to negative impact of fairness and transparency of tax system ($FTTS_i$) on $ITCB$ after including the moderator in the model. Moreover, the adjusted R^2 has been increased from 0.693 in

Model 1 to 0.746 in model 2. This illustrates that the Model 2 has a better fit to data compared to the Model 1.

As per the results of the data analysis, it shows that research questions are justified with the results of the study. Mainly the study has attempted to identify the key determinants of individual taxpayers’ tax compliance behaviour in Sri Lanka. The findings show that, all independent variables indicate a significant positive association between individual tax payers’ tax compliance behaviour in Sri Lanka. In addition, the study seeks to find the moderator effect of tax awareness and knowledge on the relationship between key determinants and individual tax compliance beheviour in Sri Lanka. The findings reveal that the strength of relationships has been changed after including the moderating variable into the regression analysis. Statistically significant positive impact from tax rate and fines and penalties on individual taxpayers’ tax compliance behaviour remains in the same direction, the positive impact from fairness and transparency of tax system has become negative with the effect of the moderator. The negative impact from the level of actual income at 95% confidence level has been diluted to a negative influence at 90% confidence level after incorporating the moderator into the analysis. Therefore, the study proved that, tax awareness and knowledge act as a moderator between the relationship between determinants and individual tax compliance beheviour.

5. Conclusion and Discussion

One of the objectives of this study was to find out determinants of individual taxpayers’ tax compliance behavior in Sri Lanka after introducing new Inland Revenue Act No. 24 of 2017 enforced with effect from 01.04.2018. Therefore, the findings are upgraded according to the new Act since previous studies were carried out under to the previous Act enforced in 2006. Based on the findings of the present study, it is apparent that there is a significant portion of individual taxpayers’ tax compliance behavior in Sri Lanka is explained through a combination of variables such as tax rate, fines and penalties, and fairness and transparency of the tax system. The remaining objective of the study was to examine the moderator effect of tax awareness and knowledge in the relationship between tax rate, fines and penalties, fairness and transparency of the tax system, and tax compliance behaviour of the individual taxpayers in Sri Lanka. As per the literature, none of the past studies has focused on the moderator impact of tax awareness and knowledge on the relationship between Key determinants and individual tax compliance behaviour. It is important to give significant attention on the moderator effect of tax awareness and knowledge since moderator twist the strength of the relationship between determinants and individual tax compliance beheviour. According to statistical evidence of the study, inclusion of the moderator (i.e. tax awareness and knowledge) increases the impact of tax rate and fines and penalties. In the meantime inclusion of the moderator tends to decline the effect of fairness and transparency of tax system. A possible reason behind such behaviour could be enhancement of fairness and transparency of the tax system beyond the acceptable level would generate unfavorable consequences by revealing highly sensitive information regarding tax system. Thus, if individuals get to know such information may lead to reduce the level of tax compliance behaviour of them since they would understand the loopholes of the tax system. As a result, it is evidenced that tax awareness and knowledge deteriorates the strength of the relationship between fairness and transparency of the tax system and individual tax payers' compliance behaviour.

In contrast to reported positive impact in the present study the empirical studies by Nurlis (2015) and Kiow et al., (2017) in other Asian countries such as Malaysia and Indonesia found a negative relationship between tax rate and individual taxpayers' tax compliance behavior. Allingham and Sandmo (1972) have conducted a study to find the relationship between actual income, tax rate, penalty and tax audit, and tax compliance. The study stated that economic models of rational compliance decisions provide either mixed prediction of the effect of marginal tax rate on compliance or predict that increased tax rate would increase compliance. However, the study concluded that taxpayers may either to fully report income or report less, regardless of the tax rates. Therefore, tax rate appears to be insignificant in determining tax compliance decisions of the individual taxpayers. Nevertheless, the present study found that tax awareness and knowledge increase the strength of the relationship between tax rate and fines and penalties with individual tax compliance behaviour by boosting the coefficient value of the regression model. As economists and government officials often assume taxpayers are keenly aware of the marginal tax rates (Gensemer et al., 1965). They are also assumed that changes in marginal tax rates will be noticed and will alter the behaviour of the taxpayers. In addition, the present study found that tax awareness and knowledge dilutes the strength of the relationship between fairness and transparency of the tax system. As per the authors' point of view, it was due to an improvement of fairness and transparency of the tax system beyond the acceptable level which would reveal highly sensitive information regarding domestic tax mechanism. Therefore, the taxpayers may critically evaluate and understand the loopholes of tax mechanism to find ways to reduce the tax burden. The main reason behind such behaviour is that tax awareness and knowledge enhances the understanding of the tax provisions to build appropriate strategies to reduce the tax burden. At last but not least, the present study found that the level of actual income plays an insignificant role after incorporating the moderator effect of tax awareness and knowledge. Though, the level of actual income does not have a direct influence from the moderator the moderator has decreased the level of statistical significance of the relationship between the level of actual income and individual tax compliance behavior.

A comparison of theoretical assumptions of the Theory of Planned Behaviour and Social Learning Theory with the findings of the present study led the researchers to reach the following conclusions. The theory of Planned Behaviour predicts an individual's intention to engage in behaviour at a specific time and place. It posits that individual behaviour is driven by behavioural intentions. Accordingly, a positive intention will encourage tax compliance, whereas a negative intention will trigger tax non-compliance (Marti, 2010). As per the findings of the present study taxpayers may believe that current individual tax rates in Sri Lanka are affordable and imposed fairly on the individual income. This belief may lead them to pay taxes thus forming a positive relationship between current tax rates in the Inland Revenue Act No. 24 of 2017 and the individual tax payers' tax compliance behaviour. Tax penalties encourage taxpayers to comply with tax laws. Therefore, the level of tax compliance is based on tax payer's perception of how strong the tax penalties would be (Andreoni et al., 1998). In this respect, the present study found a significantly positive association between fines and penalties with individual taxpayers' tax compliance behaviour in Sri Lanka. This induces that the individual taxpayers believe that prevailing punishment mechanism as stipulated in the Inland Revenue Act No. 24 of 2017 is too strong on tax evaders. According to Social Learning Theory, a person can learn through observation and direct experience which would eventually lead to create tax awareness and enhance tax knowledge. Hence, when taxpayers have more experience in handling tax related obligations, they may become more compliance due to unfavorable consequences of non-complying with tax laws. On the contrary, when taxpayers are more familiar and having more experience with tax related matters which might reduce their tax compliance as per the fact that they know the ways to escape from being taxed (Alasfour et al., 2016). In this respect, the findings of the present study reveal that an improvement of fairness and transparency of the tax system beyond the acceptable level would reveal highly sensitive information regarding the tax mechanism in Sri Lanka. Therefore, the taxpayers may critically evaluate and understand the loopholes of tax mechanism to find ways to reduce the tax burden. It means that the taxpayers may use their experience and knowledge to reduce the tax burden from loopholes of the prevailing tax system.

Further the present study investigated the effect of key determinants of individual taxpayers' tax compliance behavior along with the moderator effect of tax awareness and knowledge. Every taxpayer needs to possess a certain level of tax awareness and knowledge in order to filing tax return on due dates, reporting their income sources and correctly calculating tax liabilities own to the authorities (Loo et al., 2009). In this context Kasipillai et al. (2013) examined that tax awareness and knowledge is functioning as a moderator which may twist the association between key determinants of individual's income tax compliance behaviour. However, the testing of this moderator effect in available relevant past studies so far in Sri Lanka (i.e Jayawardana & Low, 2016; 2017) was absent. Thus the present study attempted to rectify this laxity by empirically testing and incorporating tax awareness and knowledge as moderator into the regression model. This enhances the robust of regression model which would use to estimate the relationship between the determinants of individual tax payers' tax compliance behavior in Sri Lanka.

The present study is not free from some limitations. Since the present study used quantitative methodology, it was unable to express an in-depth understanding of each and every tax payer's compliance behavior. However, this limitation paves the way for a possible qualitative study in future. Furthermore, the selected sample for this study was limited to Western Province in Sri Lanka. Therefore the replication of findings of the present study beyond the said context needs caution as such contexts may be different due to socio, economic, cultural, political, etc. variations. This further opens up avenues to carry out separate empirical examinations on the same relationship as tested in the present study. The present study was carried out based on the provisions in the Inland Revenue Act No. 24 of 2017 in Sri Lanka. Therefore, reliability of the findings of the present study would become obsolete in consequence to the future amendments to the Act. Yet, replication studies would become possible in future to update the status of the findings of the present study. It is also possible to carry out a separate study to examine determinants of the corporate tax compliance behaviour in Sri Lanka as the present study was confined to individual taxpayers.

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Annexure A

Variable	Operational Definition	Indicator(s)
Tax rate	A tax rate is a portion of compulsory unrequited financial charge or payment to the government (James & Nobes, 2000).	Government tax revenue (David & Formanová, 2016)
Fines and penalties	Negative punishments to the people who break rules by paying sum of amount of money (Savitri & Musfialdy, 2015).	Fines and penalty income (Department of Inland Revenue, 2018).
Fairness and transparency of the tax system	As per Spicer and Lundstedt (1976), tax payers are concerned about the fairness of their outcomes, and they wanted to be treated compare to their merits, efforts and needs.	• Income tax rate (Spiegel & Kloss, 2017). • Information system • Taxpayer satisfaction (James et al., 2005)
Level of actual income	According to the Spicer and Lundstedt (1976), level of actual income is the cumulation of all the income sources of a taxpayers. Therefore, it includes all the recorded income and un reported income earns from other sources.	• Average personal income level (Spicer & Lundstedt, 1976). • Total income (Spicer & Lundstedt, 1976).
Tax awareness and knowledge	Tax awareness of a taxpayer is a conditioning of which the taxpayer knows, understands and implements the provisions of the tax properly and voluntarily (Savitri & Musfialdy, 2015).	• Understandability of tax provisions (Savitri & Musfialdy, 2015). • Willingness to pay taxes and report tax return (Rahayu, 2010).
Tax compliance	Taxpayer Compliance is obedience to fulfill regulation requirements of taxes under obligations (Kirchler et al., 2007).	• Settlement compliance. (Department of Inland Revenue, 2018). • Return Compliance. (Department of Inland Revenue, 2018).