

Asia Pacific Journal of Advanced Business and Social Studies ISBN (eBook): 978 D 9943656 7 5 | ISSN : 22D5-6D33 Year: 2D19 , Volume: 5, Issue: 1



## AN ANALYSIS OF TAX AUDIT COMPLIANCE FACTORS AND MODEL

Sor-Tin Saw Asia e University, Malaysia. *Corresponding Email*: saw.st@customs.gov.my

## Abstract

This research paper explores the underlying factor structure of a set of observed compliance variables. The purpose is to determine the significant factors in the multidimensional construct. The study was conducted with a sample of 250 service tax licence holders in Malaysia. Compliance data for the three-year audit period are obtained from questionnaires, audit cases and a supporting database. Factor Analysis is conducted to examine the possible variables and validate the number of factors. The results obtained show there is inter-relationship or causal relations existing among the factors of taxpayer compliance; and that the Taxpayer Audit Compliance Construct (TACC) is a 4-factor structure. The Confirmatory Factor Analysis outcomes indicate that ten items load well onto four latent factors, represented by: (1) 'deficiency claim level, audit outcome'; (2) 'annual taxable sales, returns submission'; (3) 'penalty on return, number of offence type, nature of offence'; and (4) 'licence period, auditing experience and age'. Finally the result of this path analysis is validated through the conceptual framework - adapted Fischer et al. (1992) Tax Compliance Model. The TACC Model provides a good fit to the data and can serve as a compliance audit checklist or tool to assist public and private sector organisations in managing risks. The study also contributes to knowledge on taxpayer audits and compliance.

Keywords: Compliance Audit, Risk Management, Path Analysis.

## 1. Introduction

Allingham and Sandmo (1972) established the basic economic tax compliance model based on determinants of financial incentives that are audit, penalty and tax rates. Jackson and Milliron (1986) subsequently identified 14 factors of taxpayer compliance. Fisher et al. (1992) categorised them into 4 groups to formulate a comprehensive tax compliance model. It consists of: (i) demographic factor (such as age, gender, and education); (ii) noncompliance opportunities factor (such as income level, income source and occupation); (iii) attitudes and perceptions factor; and (iv) tax system or structure factor (such as complexity of tax system, probability of detection). It may be that there are better ways of achieving compliance than concentrating on the frequency and levels of auditing and penalties for those caught misbehaving (James and Edward, 2007). According to Chau and Leung (2009), the Fischer tax compliance model provided a sound framework for understanding the influence of those socio-economic and psychological components on taxpayers' compliance decision. Some researchers have expanded the Fischer 'Single Model' to incorporate other relevant factors to explain taxpayer compliance behaviour. Taking into account Alm (1999)'s viewpoint, this study seeks to suggest an adapted version of the Fischer tax compliance model for understanding taxpaver (or business firm) compliance behaviour.

## 2. Background of the Study

Tax compliance is fundamental in the realization by government of its economic and social goals. In recent times, due to the global economic crisis and high fiscal deficits, indirect taxes have become an increasingly prominent source of tax revenue. In the United Kingdom (UK) about 21% in 2012-2013 of total tax revenue in the UK is derived from VAT/ GST and taxes on specific goods and services, while in Malaysia, indirect tax revenue is estimated at 23% of total tax revenue for year 2012-2013.

Encouraging high levels of taxpayer compliance in developing countries is a formidable task for both tax authority and policy makers. In a recent 2012 IRS study of U.S. taxpayer compliance rate that measured noncompliance on 2006 tax returns, the study reported a voluntary compliance rate of 83.1%, which falls within the 83% to 84% range that has prevailed for the past 27 years. Whilst, Mohd. Nor et al. (2013) reported that 33% of the service tax providers did not pay the service tax during the audit period 2009 to 2011. This gives a lower compliance rate for FTKL service tax payers at approximately 67% as compared to the U.S.

#### 3. Problem Statements

Batrancea et al. (2012) investigated the most important studies on the socio-psychological, political and economic factors which shape tax compliance behaviour with the aim of understanding how these factors could be used by tax authorities as a tool for increasing public proceedings. Therefore, it is important to understand how the significant factors could be used as a tool for increasing tax compliance rate and tax revenue. This study examines a set of tax audit variables on taxpayer compliance in Malaysian context.

## 3.1 Aim and Objectives

The main purpose of this study is to determine whether tax audit compliance is a multidimensional construct with four (4) factors. This study seeks to enhance understanding of taxpayer compliance. It strives to explain the phenomenon or findings through the adapted Fischer's model. It also suggests appropriate pro-compliance solution for improving tax revenue collection as well as voluntary compliance. However, the tax audit variables are limited to ten (10) in this study. The sample data are obtained from Kuala Lumpur service tax audit cases resolved in year 012 and a supporting database. Therefore, the proposed conceptual framework comprises ten independent variables: deficiency claim amount, audit outcome, annual taxable sales, returns submission, penalty on return, offence types, nature of offence, licence period, auditing experience, age and position, including a dependent variable - Taxpayer Compliance.

The objectives of this research are as follows:

- i) To explore the underlying factor structure of a set of observed audit variables;
- ii) To determine the number of items (audit variables) which load well onto the latent factors in the multidimensional construct;
- iii) To examine whether the Tax Audit Compliance Construct (TACC) model is a four-factor structure;
- iv) To test whether there is inter-relationship or causal relations existing among the factors of taxpayer compliance through factor analysis; and finally
- v) To validate the path analysis results through the conceptual model Fischer et al. (1992) tax compliance model.

## 3.2 Research Hypotheses

Consistent with the research objectives, the hypotheses are formulated as follows:

H<sub>o</sub>: TACC is not a 4-factor structure comprising BTSF, ETAF, BTEF and ENCOF.

Asia Pacific Institute of Advanced Research (APIAR)

H<sub>1</sub>: TACC is a 4-factor structure comprising BTSF, ETAF, BTEF and ENCOF.

 $H_{o}$ : There are no inter-relationship or causal relations existing among the factors of taxpayer compliance.

H<sub>2</sub>: There are inter-relationship or causal relations existing among the factors of taxpayer compliance.

#### 4. Literature Review

The research on tax audit and compliance is of interest and continually being studied to provide reference for tax policy planning and administration. Su, Lee, Wu & Ueng (2011) utilised taxpayers' charitable contributions to infer their actual income and underreported income. Based on Taiwan's unaudited income tax returns in 2005, it is found that most taxpayers reported only one-third of their income to the tax authority.

Yoon et al, (2011) studied on a group of taxpayers who have the resources to obtain tax advice on litigating their cases. They proved that a decrease in audit errors discourages aggressive reporting in Korea; but a tax cut encourages aggressive reporting and lowers net revenue. However, an increase in the penalty leads to less aggressive reporting and higher net revenue. Zhou and Oostendorp (2014) used matched firm-level survey and tax office data to estimate the true sales of Mongolian firms and concluded firms underreport sales to the tax office by 38.6%.

Oh & Lim (2011) employed data from 196 survey questionnaires and performed regression analysis. They found demographic variables (gender and age) have a positive relationship on sole-proprietor's intention of tax non-compliance in Malaysia. Nik Mohd Rashid et al. (2017) tested data from 42 RMC audits which underpaid GST and overstated input tax from April 2015 to April 2016. The statistical results revealed there is an association between probability of detection and GST rate.

Mohd Yusof et al, (2014) sampled 375 IRBM tax-audited cases closed in 2011; multiple regression results showed that marginal tax rate, company size and types of industry influence compliance behaviour of SMCs. Isa (2014) interviewed 60 IRBM tax auditors and some corporate taxpayers to examine issue of tax complexities. Smaller corporate taxpayers were found to have difficulties in tax computation and record keeping.

In recent decades, factor analysis has been used for a variety of taxation research. In 2013, the Taxpayer Advocate Service (TAS) conducted an Internal Revenue Service (IRS) extended study on the factors influencing U.S. small business compliance behaviour. The sample comprises a selected national population of sole proprietors. The variables are the 26 (out of 37) questions contained in the sole proprietor national survey and a factor is represented by a group of Likert scale questions. TAS also relied on internal IRS computer-generated DIF score estimates that an audit would produce an adjustment as a proxy for tax compliance. An exploratory factor analysis using Principal Component analysis (PCA) had initially been performed to extract variables representing a few factors (six groups of correlated response) and to empirically analyse the underlying factors. In the National Taxpayer Advocate 2012 Annual Report, factor analysis revealed 'taxpayer service' and 'fairness and tax policy' component of trust in government as the highest ranking factor. Norms, tax morale, preparers and complexity are important factors. The influence of deterrence (e.g. penalties) could not be confirmed in this report as small business owners may be motivated by short-term cash flow (making ends meet). On the whole, this finding indicates that improvements in taxpayer service could increase voluntary compliance by small business proprietors.

Kirchler and Wahl (2010) conducted a study on a sample of 310 Austrian self-employed taxpayers which was randomly split into two subsamples for inventory replication and validity assessment. Out of 35 survey items, 20 items were found sufficient to measure voluntary compliance, enforced compliance, tax avoidance and tax evasion. A reliable inventory consisting of four scales was first developed; and the validity of this instrument was checked on the basis of

Asia Pacific Institute of Advanced Research (APIAR)

correlations with motivational postures (attitudes of taxpayers). The results show that voluntary compliance and enforced compliance are not correlated. This may explain why some studies find a strong effect of audits and fines on compliance, whilst others find no relationship or no effect at all. Assuming that in voluntary compliance, taxpayers do not need to make a decision on whether it pays to evade or not but just to cooperate spontaneously, then audits and fines might convey distrust by authorities and lead to the reverse effects. Conversely, if taxpayers need enforcement to comply, then audits and fines are likely to exert deterrent effects (Kirchler, 2007). In other words, voluntary compliance comes from taxpayers' trust in authorities, whilst enforced compliance is nurtured through the power of authorities to effectively conduct audits and impose fines (Kirchler, 2007).

In a study by Alabebe (2012), factor analysis, multiple regression analysis and other statistical techniques have been used to analyse opinion survey questionnaire data of Nigerian respondents. The findings reveal that taxpayers' perception about tax service quality and public governance quality are significantly related to the compliance behaviour; and there is a moderating effect of taxpayers' financial condition on tax system/structure, moral reasoning, occupation and tax compliance behaviour.

Bobek, Hageman and Kelliher (2013) explored the role of social norms in tax compliance behaviour with 174 experienced taxpayers as subjects. Factor analysis identified four distinct social norm constructs: personal norms and subjective norms directly influence tax compliance decisions whereas injunctive norms and descriptive norms have an indirect influence on tax compliance.

## 5. Methodology

This study applies the objective approach and quantitative method of research. The computed taxpayer compliance has a value of between 0 and 1 and is reliant on the amount of tax audit adjustment as determined by the audit officer. Zero denotes 0% (nil) compliance and 1 denotes 100% (full) compliance. Hypotheses about the causal relations existing between the factors of TC is tested and verified. It establishes the four-factor structure tax audit compliance construct model as well as inter-relationship effect between the compliance latent factors. Finally, two compliance models: the Tax Audit Compliance Construct (TACC) and an adapted Fischer TC model are presented to provide a reference for future research studies and tax administration.

In brief, the major methods of statistical analysis are as follows. Data analysis using SPSS is initially conducted to test for correlation between the audit variables and taxpayer compliance. Factor analysis method is used to identify and order the factors (underlying concepts) and to examine the relationship within the group of these observed variables. SEM software 'AMOS' (confirmatory factor analysis) is used to verify the factor structure of the observed variables, and to confirm any inter-relationship between the latent constructs and taxpayer compliance .

In exploratory factor analysis (EFA), variables that are highly correlated are related to a more general, unobserved concept known as factor. Principal components (extraction method) analysis is used to analyse the ordinal categorical data in which 7 out of 10 items are based on continuous variables, one is of ordinal type and two are binary variables. The observed variables are measured through the items as laid down in the questionnaire form. According to the SPSS software and as explained in Meulman and Heiser (2001), three types of categorical variables are relevant (for constructing principal components): (i) nominal variables (unordered categories); (ii) ordinal variables (ordered categories such as Likert scale), and (iii) numerical (count) variables (ordered categories such as age in years and income in \$) with distances between categories that can be meaningfully interpreted (as cited in Ng, 2015, p.1142).

There are two main conditions essential for factor analysis. Firstly, there need to be relationships among the variables. Secondly, the need to have an adequate sample size especially in relation to the number of variables, so that the resulting factors will be more reliable. In this

Asia Pacific Institute of Advanced Research (APIAR)

study, the sample size of 250 cases is sufficient to produce a reliable factor analytic solution, since it has at least 150-300 cases as suggested by Hutcheson & Sofroniou (1999). Comrey and Lee (1992) established that sample size of 50 cases is considered very poor, 100 is poor, 200 is fair, 300 is good, 500 is very good and 1000 or more is excellent. Nonetheless, sample size is less serious for factor analysis if the communalities of items with the other items are high or relatively high.

As a starting point of factor analysis, the correlation matrix is checked for clusters of high correlations of above 0.3 between groups of variables (Tabachnick & Fidell, 2001). This correlation matrix is then compared to the matrix of zero correlations by the Bartlett Test of Sphericity which should show a small p value. The MSA (Measure of Sampling Adequacy) value is then obtained and a value over 0.8 is good but above 7 is acceptable for performing a valid factor analysis.

There are a number of procedures designed to determine the optimal number of factors to retain in EFA. On selecting the appropriate number of factors to include in a model, one must try to balance parsimony (a model with relatively few factors) and plausibility (a model with sufficient factors to adequately account for correlations among measured variables). In fact, it is better to include too many factors (over-factoring) than too few factors (under-factoring) in a model. This is because major factors are normally accurately represented and extra factors have no measured variables loaded onto them. However, over-factoring should be avoided because it may lead researchers to put constructs with little theoretical value. On the other hand, if insufficient factors are included in a model, there is likely to be substantial error. Measured variables that load onto a factor but not included in the model can falsely load on factors that are include altering true factor loadings. This can result in rotated solutions in which two factors are combined into a single factor, concealing the true factor.

Other important things to consider for EFA are as follows. The latent variables are identified by selecting the Eigenvalues criteria value of greater than 1. For factor loadings and communality value, the higher the value the better, higher values mean closer relationship. In contrast, the uniqueness value<sup>1</sup> for each observed variable should be as low as possible. The acceptable level of variance explained by the model should be within the 60-70% margin. Factor rotation is carried out by using Varimax rotation to interpret the factors. Generally, an observed variable with a value bigger than 0.5 or smaller than -0.5 means that variable fits well with that factor. A loading of below 0.4 on each factor needs to be ignored. Finally, the latent factors or constructs are named. In fact, by running factor analysis, the solutions are continually refined and compared until the most meaningful solution is reached (Tabachnick & Fidell, 2001). According to Fabrigar, Wegener, MacCallum & Strahan (1999), regardless of the setting, within each analysis there are a range of choices and decisions the researcher must make to improve the accuracy of the factor analysis results needs to be supported by strong theoretical and mathematical justification within the research context.

# 6. Analysis and Results

This research is focused on examining and analysing a sample of 250 audited taxpayers in service tax compliance. IBM SPSS version 20 and AMOS version 22 are used for factor analysis and covariance-based SEM analysis respectively.

# 6.1 Assessing the Path and Correlation Coefficients

In assessing the measurement model, the first step is to examine the factor loadings. The path coefficients or the SEM standardised regression weights vary from the factor loadings (after

<sup>&</sup>lt;sup>1</sup> This value is 1-communality and it refers to the portion of the observed variable that cannot be predicted from the other variables (i.e. the latent variables).

rotation) for each variable as shown in the Table 1. The standardised factor loadings across the four constructs (BF1, EF2, BF3, EF4) were above 0.5 for all items (ranging from .905 to .539) except for item 'audit experience' (.363) on BF3 and item 'annual taxable sales' (.461) on EF4. However, these two items were retained due to its significance in relation to the remaining items in the respective BF or EF construct.

Item		Construct	CFA Estimates	EFA-Loadings
OffNa_C	<	BFOne	.893	.679
OffNo_C	<	BFOne	-599	.809
Pen2_C	<	BFOne	.539	.690
CNC_Grp	<	EFTwo	.905	.782
Tax_C	<	EFTwo	.688	.050
Age_C	<	BFThree	-547	.591
AExp_C	<	BFThree	.363	.837
LExp_C	<	BFThree	-937	.617
Ret1_C	<	EFFour	.887	.722
TSal C	<	EFFour	.461	622

Table1: Standardised Regression Weights

#### 6.2 Reliability of Measured Variables

In SEM, the reliability of a measured variable is estimated by a squared correlation  $(R^2)$ coefficient. Ideally, a CFA model should explain the majority of the variance ( $R^2 > .50$ ) of each indicator (Kline, 2011, p. 231). In practice, there are two major reasons why the low R-squared values (coefficient of determination) can be accepted. Firstly, low R-squared values are expected in any field that attempts to predict human behaviour such as taxpaver's behaviour because humans are fairly unpredictable. Secondly, important conclusions can still be drawn as the predictor variables are statistically significant. For e.g., there is a .132 change in the BF2 response (output) for one unit of change in the predictor (input) 'audit experience' while holding other predictors i.e. ' age' and 'licensing experience' constant (Table 2).

Table 2: Squared Multiple Correlations					
Variable Label	Estimate (R <sup>2</sup> )	1-R <sup>2</sup> (SRV)	LF Label		
Pen2_C	.291	.709	BFOne or		
OffNo_C	.359	.641	BTSF		
OffNa_C	.798	.202			
Tax_C	-473	.527	EFTwo or		
CNC_Grp	.819	.181	ETAF		
LExp_C	.879	.121	BFThree or		
AExp_C	.132	.868	BTEF		
Age_C	.300	.700			
TSal_C	.212	.788	EFFour or		
Ret1_C	.787	.213	ENCOF		

Note: SRV = Standardised Residual Variance or Unexplained Variation

#### 6.3 Detecting Model Misspecification

Standardised residuals refers to the estimates of the number of standard deviations the observed residuals are from the zero residuals that would exist if model fit were perfect. Values > 2.58 are considered to be large (Joreskog & Sorbom, 1993). By visual inspection of the AMOS output in Table 3, it can be seen that all the standardised residual values are below the cut-off point of 2.58, thus it can be said that there is no statistically significant discrepancy between any two observed variables in the model.

The modification indices (MI) can be conceptualised as an  $X^2$  statistics with one degree of freedom (Joreskog & Sorbom, 1993). In AMOS, an MI or an expected parameter change (EPC) value is provided in the "Par Change" column, which represents the predicted expected drop in overall  $X^2$  value if the parameter were to be freely estimated in the next run; and MI values for each fixed parameters would automatically be equal to zero after MI has been done. The MIs and EPC statistics related to the hypothesised model are shown in Table 4.

Table 3: Standardised Residual Covariance - Default model										
	TSal_C	Reti_C	LExp_C	AExp_C	Age_C	Tax_C	CNC_Grp	Pen2_C	OffNo_C	OffNa_C
TSal_C	.301	2000-2004		100000000000	04.500.5153	100000	00.00-07.98	2010/02/02/02	1000 Block	2000/11/2 FC
Reti_C	-574	020								
LExp_C	661	.171	.000							
AExp_C	.072	.801	098	035						
Age_C	.269	207	002	.246	.000					
Tax_C	.523	.648	.838	1.097	.606	.178				
CNC_Grp	.486	189	390	1.258	180	.218	.000			
Pen2_C	-1.130	080	531	.634	-1.467	.715	208	,018		
OffNo_C	656	495	378	.067	-1.035	.552	.240	.309	.166	
OffNa_C	011	-254	.249	1.321	507	-550	230	033	.021	,028

Table 4: Modification Indices and Parameter

\_ ..

able 4: Modification Indices and Parameter Covariance: (Default model)						
M.I. Par Chang						
e11	<>	EFTwo	4.030	.088		
e8	<>	e11	4.778	395		
e7	<>	EFFour	5.972	.124		
e7	<>	EFTwo	4.535	.023		
e7	<>	e11	14.494	.191		
e5	<>	e11	24.202	.841		
e5	<>	e7	4.639	.092		
e2	<>	e11	10.650	318		
e2	<>	e3	12.832	.348		
e1	<>	e3	6.794	463		

In Table 4, the parameters that make any practical sense are those representing error covariance. In this respect, the following 6 pairs of error terms have been free up that is e3 and e1, e3 and e2, e11 and e2, e11 and e5, e11 and e7, including e7 and e5; with their respective MI values.

# 6.4 Validating the Measurement Model

Using CFA model fit's parameter estimates, each construct is tested for convergent and discriminant validity. Convergent validity of a construct is established by examining the Average Variance Extracted (AVE) and the Composite Reliability (CR) by using auto design by James Gaskin-the Excel Stats Tool Package (ESTP). As shown in Table 5, the AVE estimates across the four constructs range from 0.436 to 0.646 and the CR estimates range from 0.645 to 0.782. It should be noted that although the AVE for BFOne and BFThree are below 0.500 both the CR estimates are above 0.600. This satisfies the Anderson & Gerbing (1988) third criteria. For discriminant validity, there are no issues on the construct.

Table 5: Convergent Validi	ty Estimates for Latent Construct
----------------------------	-----------------------------------

	AVE	CR	Cronbach Alpha
BFOne	0.482	0.726	.648
BFThree	0.436	0.669	.538
EFTwo	0.646	0.782	.460
EFFour	0.500	0.645	.612

Requirements: 1. Measurement model free from redundant items.

2. Correlation between each pair of latent exogenous construct is < 0.85

**Requirements:** 

- 1. Measurement model free from redundant items.
- 2. Correlation between each pair of latent exogenous construct is < 0.85

# 6.5 Final CFA Model (4-Factor Structure with 10-Item)

Having considered all the salient points: namely the feasibility and statistical significance of all parameter estimates, the adequate good fit of the model, and the lack of any substantial evidence of model misfit; it can be concluded that the new four-factor model as portrayed in Figure 1 represents an adequate description of the taxpayer compliance structure for audited business entities.





Figure 1: Measurement Model for CFA TACC Model (Standardised Regression Coefficients)

# 6.6 Hypothesis Testing

Firstly, the TACC structural model validity or first hypothesis is statistically tested by using CFA-CMIN.

Ho : TACC is not a 4-factor structure comprising BTSF, ETAF, BTEF and ENCOF.
H1: TACC is a 4-factor structure comprising BTSF, ETAF, BTEF and ENCOF.
Where TACC represents Taxpayer Audit Compliance Concept;
BTSF represents Behavioural Tax-System Factor;
ETAF represents Economic Tax-Audit Factor;

BTEF represents Behavioural Tax-Experience Factor; and

Asia Pacific Institute of Advanced Research (APIAR)

DOI: 10.25275/apjabssv5i1bus10

## ENCOF represents Economic Noncompliance-Opportunity Factor.

The test of the null hypothesis  $H_0$  as a 4-factor structure depicted in the path diagram yielded a  $X^2$  value of 24.067 with 25 degrees of freedom and a P-value (probability level) of .515 and greater than 0.05, thereby suggesting that the fit of the data to the hypothesised model is good. Therefore, it can be deduced that taxpayer audit compliance concept model is a multidimensional construct which consists of the 4 factors that is BTSF, ETAF, BTEF and ENCOF.

Secondly, the inter-relationship or second hypothesis is statistically tested by using CFA results as shown in Figure 1.

- $\mathbf{H}_{\mathbf{o}}$ : There are no inter-relationship or causal relations existing among the factors of taxpayer compliance.
- $H_2$ : There are inter-relationship or causal relations existing among the factors of taxpayer compliance.

Similarly, the null hypothesis is rejected with a significance level of 0.05. Therefore, there are inter-relationship or causal relations existing among the factors of taxpayer compliance.

# 6.7 Summary of CFA Model Fit

The results of the CFA indicate that ten items load well onto four latent factors except for the factor loading of 'audit experience' which is quite low compared to the other nine. This is logical as this variable is subject to a random element *i.e.* probability of being audited. Freedman (1987) believed that the results of a path analysis depend for their validity on some underlying causal theory; if the theory is rejected, the interpretations have no foundation. Based on this premise, the adapted Fischer et al. (1992) Tax Compliance Model is put to test.

# 6.8 Verification of the Fischer et al. (1992) Tax Compliance Model

The relative low factor loading for item 'audit experience' suggests additional testing to ensure better generalisation of the results. Pearson correlation test revealed that there is a significant relationship between the nine audit variables and TC except for 'audit experience'. Therefore, the item 'audit experience' is removed from the new TC model. Henceforth, the verified Fischer et al. (1992) Tax Compliance Model resulting from this statistical analysis process is as depicted in Figure 2.



Figure 2: Adapted & Modified Fischer et al. (1992) Tax Compliance Model

#### 7. Discussion

Study on compliance is important as it affects our everyday life and behaviour. This study examines key factors of service tax compliance with different proxies for the economic NCO and behavioural TSS variables of taxpayer compliance. The hypothetical constructs are latent and measured indirectly through observed indicators or scores. This research thus offers new clues on the Taxpayer Audit Compliance Construct (TACC) model and the corresponding Fischer et al. (1992) adapted model.

Cobham (2005) estimated that developing countries lose US\$385 billion per year due to tax evasion. This highlights an urgent need for more empirical research on tax compliance to improve our understanding of the two evils 'tax avoidance and tax evasion' in developing countries which are very heterogeneous (Fuest and Riedel, 2009). Furthermore, in pursuit of national economic, social goals in tandem, tax administration needs to shift to a voluntary compliance regime that is backed by both taxpayer service and enforcement strategies (Jenkins & Forlemu, 1993). It should be noted that the costs and benefits associated with Government compliance projects such as tax audit programmes may influence the business firms' decision to avoid, evade or pay taxes due. Therefore, this study also seeks to provide a means to enhance voluntary TC and reduce future expected cost for the taxpayers.

Last but not least, keeping historical service tax records (of indirect tax) is a useful, meaningful activity and work. Torgler, B (2007) supported this work and argued that:

Though tax records are generally looked upon as a nuisance, the day may come when historians will realize that tax records tell the real story behind civilized life. How people were taxed, who were taxed, and what was taxed tell more about a society than anything else. (p. 21)

This is certainly applicable to Malaysia, since the Service Tax Act 1975 was repealed beginning 1 April 2015 and reintroduced on 1st September 2018.

#### 7.1 Summary of the Results

In this study, data is drawn from 250 audited taxpayers; and a combined set of ordinal scale and categorical data is used to run factor analysis in SPSS. A Principal Component Analysis with a Varimax (orthogonal rotation method) is conducted on 10 questionnaire items (with scales of two to eight). The KMO measure of sampling adequacy suggests that the sample is factorable (KMO=.717). The factor analysis yields a ten-factor solution with a simple structure in which all factor loadings are more than .30; where three items load onto Factor 1,3, 4 while 2 items load on Factor 2. The first factor loads onto *penalty on return, offence types and nature of offence*; the second factor on *tax audit outcome and deficiency claim amount* ; the third factor loads on *licence period, audit experience and age*; and the fourth factor loads onto *annual taxable sales, tax returns submission and position*. The first factor (ETAF); the third as 'behavioural tax-system' factor' (BTSF); the second as 'economic tax-audit' factor (ETAF); the third as 'behavioural tax-experience' factor (BTEF); the fourth as 'economic noncompliance-opportunity' factor (ENCOF). All these identified factors are related to different aspects of taxpayer's compliance and tax audit outcome as well.

CFA is then conducted in which four latent factors and 10 observed variables for the underlying factor structure were found to be significant. The measurement model is tested positive for convergent and discriminant validity through Excel Stats Tool Package. This confirms that the audited Taxpayer Audit Compliance Construct (TACC) is a 4-factor structure consisting of BTSF, ETAF, BTEF and ENCOF.

#### 8. Conclusion

This study focuses on specific definitions and effective use of tax compliance variables or factors. It applies items relating to each of the respective factors that are derived from the literature on tax compliance. In the questionnaire, since participants are not revealing their own (deviant) behaviour, the answers are likely to produce more accurate and reliable reports about non-compliance. Even though, this research relies on a few items or variables (Torgler, 2005 and Wenzel, 2007) but validity and reliability have been successfully tested. Besides, the scale construction has withstood the test of factor analysis and the factor structure of the tax audit concept model has passed the CFA validation test. Last but not least, the tested instrument and scales can be used in future tax audit surveys to collect data for similar research and analysis on taxpayer compliance in Malaysia or other countries, having a similar tax system, structure or policy implementation.

An important step towards ensuring a higher tax compliance rate and tax revenue is by enhancing public confidence and trust in the Malaysian tax system. Public perception of fairness (Hofmann, Hoelzl, and Kirchler, 2008), equitability, transparency in the tax administrative system, legitimacy of the state (Levi, 1989) as well as the country's economic growth and government spending priorities will affect tax compliance behaviour (CP Lamberton, 2013). In addition, Bird (2003) stresses that irrespective of how good a tax policy is (in theory), or how good tax administration is (in practice), good results are only possible in a conducive environment for tax compliance and revenue enhancement. The political, economic, constitutional and legal environment, the tax administration, taxpayers, as well as or possibly collectively in-country realities, may impact on tax compliance.

As a consequence, the government's pro-compliance solution should focus on offering assistance to settle various tax compliance issues such as tax law complexities, tax debts or tax ruling; reduce social distance between the taxpayer and authorities, and make compliance easy for the honest taxpayers; which can indirectly cultivate a tax compliance habit and elicit voluntary compliance to improve the taxpayer compliance in the taxable service sector in Malaysia.

The road to success starts at grass root levels from the local communities and local authorities, a bottom-up approach in solving the tax noncompliance issues. For instance, local authorities should undertake effective measures to improve taxpayer compliance such as: educating the public, improving taxpayer services and facilities, providing free tax advisory services - on simple tasks like preparation of returns to complicated tasks like application for tax exemptions, benefits facilities, advance rulings and so forth. In the case of frequent noncompliance taxpayers, the authorities can take full force of the law to enforce compliance which may increase long-term level of taxpayer compliance. Nonetheless, incentives or prizes that reward positive changes in taxpayer behaviour can be used by tax authorities to encourage voluntary compliance as well as to enhance the taxpayer's intrinsic motivation to comply (Bornman & Stack, 2015).

## 9. Suggestion for Future Research

The 2012 tax audit compliance study could contemplate future analysis of indirect tax compliance survey in the form of a larger scale study such as national research, utilising supportive relational database or IBM SPSS Neural Network programme. Future research could build upon the survey results by investigating social noncompliance and compliance in other states or areas where the problems occur. Further investigation would relate to tax administration vis-a-vis regional practices.

For the topic of tax audit, more research needs to be undertaken on the taxpayer's audit perceptions of tax complexities, taxpayer services, fairness, tax aggressiveness and their satisfaction level after an audit, in order to have a more conclusive report on the implications of the tax authority's tax audit policy, practices and strategic plans. In addition, further investigation on the impact of tax audit on tax compliance is important such as on whether tax audit improves voluntary compliance and revenue collection.



#### References

- i. Alabede, J. O., Ariffin, Z. B. Z. & Idris, K. M., 2012. Public Governance Quality and Tax Compliance Behavior in Nigeria: The Moderating Role of Financial Condition and Risk Preference. *Issues in Social and Environmental Accounting*, vol. 5, no.1/2, pp. 3-24.
- ii. Allingham, M.G. & Sandmo, A., 1972. Income Tax Evasion: A Theoretical Analysis. *Journal of Public Economics* 1, No. 3/4, pp. 323–338.
- iii. Alm, J., 1999. Tax Compliance and Administration. *Handbook on Taxation*. New York: Marcel Dekker.
- iv. Bank Negara Annual Report, 2012. EMBARGO. [Online] Available at: Retrieved from www.bnm.gov.my/index.php?ch=en\_publication [Accessed 20 March 2013]
- v. Batrancea, L.M., Nichita, R. & Batrancea, I., 2012. Understanding the determinants of tax compliance behavior as a prerequisite for increasing public levies. *The USV Annals of Economic and Public Administration*, Vol. 12, no. 1, p. 15
- vi. Bobek, D. D., Hageman, A. H. & Kelliher, C. C., 2013. Analyzing the Role of Social Norms in Tax Compliance Behavior. *Journal of Business Ethics*, vol.115, no. 3, pp. 451-468.
- vii. Bornman, M. & Stack, L., 2015. Rewarding tax compliance: taxpayers' attitudes and beliefs. *Journal of Economic and Financial Sciences*, vol. 8, no. 10.
- viii. Bryant, F. B. & Yarnold, P. R., 1995. Principal-components analysis and exploratory and confirmatory factor analysis. In Grimm, L.G. & Yarnold, P. R. (Eds.), *Reading and understanding multivariate statistics*. Washington, DC, US: American Psychological Association, pp. 99-136.
- ix. Chau & Leung, 2009. A critical review of Fischer tax compliance model: A research synthesis. *Journal of Accounting and Taxation*, Vol.1, no. 2, pp. 030-034.
- x. Comrey, A. & Lee, H., 1992. A first Course in Factor Analysis. NJ: Hillsdale.
- xi. Custom Act, 1967 (ACT 235) & Regulation, Laws of Malaysia. International Law Book Services.
- xii. Fabrigar, L.R., Wegener, D.T., MacCallum, R.C. & Strahan, E.J., 1999. Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*. Vol. 4, No. 3, pp. 272-299.
- xiii. Fischer C.M., Wartick M. & Mark, M., 1992. Detection Probability and Taxpayer Compliance: A Review of the Literature. *Journal of Accounting Literature*, vol. 11, pp. 1-46.
- xiv. Freedman, D., 1987. As Others See Us: A Case Study in Path Analysis. *Journal of Educational Statistics*, vol. 12, no. 2, pp. 101-128.
- xv. Fuest, C. & Riedel, N., 2009. *Tax Evasion,Tax Avoidance and Tax Expenditures in Developing Countries: A Review of the Literature*. Report prepared for the UK Department for International Development (DFID), June 19<sup>th</sup>, 2009.
- xvi. HMRC-National Statistics: HM Revenue & Customs, 2013. '*HMRC Tax & NIC Receipts, Monthly and Annual historical record - The Economy*', HMRC Press Office, [Online] Available at: http://www.hmrc.gov.uk/statistics/receipts/info-analysis.pdf. [Accessed 20 September 2013]
- xvii. Hutcheson, G. & Sofroniou, N., 1999. *The Multivariate Social Scientist: Introductory Statistics Using Generalized Linear Models*. CA: Sage Publication.
- xviii. Blake, E.C., 2012. *IRS compliance trends for the next decade. A \$450 billion annual tax gap prompts Treasury to pursue aggressive compliance techniques.* US: Internal Revenue Services.
- xix. Internal Revenue Services, 2013. *Small Business Compliance: Further Analysis of Influential Factors*. Annual Report to Congress, Volume 2, section 3.
- xx. Isa, K., 2014. Tax complexities in the Malaysian corporate tax system: minimise to maximise. *International Journal of Law and Management*, Vol. 56 No. 1, pp. 50-65.

Asia Pacific Institute of Advanced Research (APIAR)

 $P_{age}114$ 

- xxi. Jackson, B.R. & Milliron, V.C., 1986. Tax Compliance Research: Findings, Problems and Prospects. *Journal of Accounting Literature*, vol. 5, pp. 125-165.
- xxii. Jenkins, G. & Forlemu, E., 1993. Enhancing Voluntary Compliance By Reducing Compliance Costs: A Taxpayer Service Approach. *Development Discussion Papers* 1993-04, JDI Executive Programs.
- xxiii. Jöreskog, K. G. & Sörbom, D., 1993. *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Chicago, US: Scientific Software International.
- xxiv. Kirchler, E, 2007. *The economic psychology of tax behaviour*. Cambridge: Cambridge University Press.
- xxv. Kirchler E. & Hoelzl E., 2008. Enforced versus voluntary tax compliance: The "slippery slope" framework. *Journal of Economic Psychology*, vol. 29, no. 2, pp. 210–225.
- xxvi. Kirchler, E., 2010. Tax Compliance Inventory: TAX-I: Designing an inventory for surveys of tax compliance. *Journal of Economic Psychology*, vol. 31, no. 3, pp. 331-346.
- xxvii. Md Noor, R., Jamaludin, N.E., Omar, N. & Rozainun, A.A., 2013. Measuring Tax Gap in the Service Industry. *Proceedings of the 3<sup>rd</sup> Global Accounting, Finance and Economics Conference,* Australia, 5-7 May, 2013.
- xxviii. Ministry of Finance, 2010. *Malaysia Federal Government Treasury Annual Economic Report* 2009-2010 & 2012-2013. [Online] Available at: www.treasury.gov.my/pdf/ekonomi/le/1213
- xxix. Mohd Yusof, N. A., Ling, L. M. & Wah, Y. B., 2014. Tax non-compliance among SMCs in Malaysia: Tax audit evidence. *Journal of Applied Accounting Research*, vol. 15, no. 2, pp. 215-234.
- xxx. Ng, S., 2015. Constructing common factors from continuous and categorical data. *Econometric Reviews*, vol. *34*, *no*. 6-10, pp.1141-1171.
- xxxi. Nik Mohd Rashid, N.M.N., Abd Hamid, N., Mohd, N., Md Amin, N., Mohd, F., Abdul Fahmi, Z., Shukri Rasit, A., Yazid & Alam, S., 2017. The Relationship Between Tax Evasion and Gst Rate. *World Applied Sciences Journal*, vol. 35, pp. 1930-1935.
- xxxii. National Taxpayer Advocate, 2012. Annual Report to Congress, vol. 2, no. 1, pp. 7-9.
- xxxiii. Oh, T.H. & Lim M.S. 2011. Intention of Tax Non-Compliance-Examine the Gaps. *International Journal of Business and Social Science*, Vol. 2 No. 7, Special Issue, April 2011.
- xxxiv. Service Tax Act, 1975 (ACT 151) and Regulations and Order. *Laws of Malaysia*. International Law Book Services.
- xxxv. Su, J-R., Lee, H-F., Wu, S-Y., Ueng, K.L., 2011. Academia Economic Papers, Vol. 39, no. 2, pp. 215-243.
- xxxvi. Tabachnick, B.G. & Fidell, L.S., 2001. *Using Multivariate Statistics*. 4<sup>th</sup> ed. Boston: Allyn and Bacon.
- xxxvii. Torgler B., 2005. Tax morale and direct democracy. *European Journal of Political Economy*, vol. 21, no. 2, pp. 525–531.
- xxxviii. Torgler, B., 2007. *Tax Compliance and Tax Morale: A theoretical and empirical analysis*. UK: Edward Elgar.
- xxxix. Wenzel, M., 2007. The Multiplicity of Taxpayer Identities and their implications for tax ethics. *Law & Policy*, vol. 29, no. 1, pp. 31-35.
  - xl. Yoon S-S., Yoo S-W. & Kim, J., 2011. Ambiguity, Audit Errors, and Tax Compliance, *Asia-Pacific Journal of Accounting & Economics*, vol. 18, no. 1, pp. 11-26.
  - xli. Zhou, F. & Oostendorp, R., 2014. Measuring true sales and underreporting with matched firmlevel survey and tax office data. *Review of Economics & Statistics*, vol. *96*, *no.* 3, pp. 563-576.