



**MEASURING THE IMPACT OF MODERNIZED TAX ADMINISTRATION
SYSTEM ON TAX COMPLIANCE BY TAX SANCTION, TAX MORALE,
AND
TAX SERVICE AS INTERVENING VARIABLES**

**MENGUKUR DAMPAK SISTEM ADMINISTRASI PERPAJAKAN MODERN
TERHADAP KEPATUHAN PERPAJAKAN DENGAN SANKSI PAJAK,
MORAL PAJAK DAN
PELAYANAN PAJAK SEBAGAI VARIABEL PERANTARA**

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Abstrak

Sektor pajak adalah sumber utama penerimaan negara di beberapa belahan dunia. Peran pentingnya untuk pembangunan dan pembiayaan operasional membuat suatu negara secara terus menerus melakukan perbaikan di segala sektor pajak melalui reformasi perpajakan. Salah satu elemen reformasi adalah memodernisasi administrasi perpajakan. Administrasi pajak menjadi pilihan karena dalam sistem perpajakan, administrasi pajak memegang peranan penting sebagai pengorganisasi data, pengolahan data sampai dengan penyetoran uang pajak. Secara umum, penerapan sistem administrasi perpajakan modern telah menghabiskan secara signifikan uang negara, sehingga perlu dievaluasi secara menyeluruh sebagai bentuk pertanggungjawaban negara kepada masyarakat. Paper ini menawarkan sebuah model untuk mengevaluasi penerapan sistem administrasi perpajakan modern dengan menggunakan analisis jalur untuk mengukur dampak sistem ini terhadap kepatuhan perpajakan dengan sanksi pajak, moral pajak, dan pelayanan pajak sebagai variabel perantara. Dengan menerapkan model ini, diharapkan akan ditemukan faktor-faktor dengan kontribusi terendah yang akan diperbaiki untuk mencapai sistem perpajakan yang optimal.

Kata kunci: evaluasi, modernisasi, variable perantara, kepatuhan, analisis jalur

Abstract

Tax sector is a main source of government income in the worldwide. Its important role for developing and financing operations makes government continuously to conduct improvements in various sectors of taxation through tax reform. One element of the reform is to modernize the tax administration. Tax administration to be an option because in the taxation system, tax administration plays an important role that handles organizing data, collecting and managing tax until remittance of the tax money. In general, the implementation of modernizing the tax administration has spent significantly the public fund so that it must be evaluated comprehensively as a manifestation of accountability from government. This paper offers a model to evaluate the implementation of modernized tax administration system by using the path analysis

to measure the impact on the tax compliance with the tax sanction, tax morale, and tax service as an intermediary variable. By exerting this model, it is expected to find factors that have the lowest contribution, which then to be improved to achieved the optimal tax system.

Keywords: *evaluation, modernization, intervening variable, compliance, path analysis.*

INTRODUCTION

The World Bank and OECD report implicitly inform us about there still exists the country's dependence on revenue from the tax sector. This is not surprising because almost 90% of countries in the world imposes a tax for people that are used to finance the construction, maintenance, and operations of the government. The considerable dependence to achieve a self-sufficient nation makes the government continuously to do improvements in the tax sector through tax reform.

One element of tax reform is to modernize tax administration. Reforms in this sector is very important because of its large role covering namely mapping taxpayers, tax collection, management and utilizing the tax money. Moreover, the need of public to get the better service in tax administration become increases yearly. Furthermore, it is no secret that the implementation of modernizing tax administration expends massively the public fund to transfer the technology, to develop or improve the infrastructure and human resource capacity building including to increase the administrator income. The magnitude of utilizing public money lead to the extent of public demands towards the results of these modernization activities. Therefore they should be evaluated in order to improve this sector so that expectations and demands of the public can be fulfilled as a manifestation of government accountability. The main question is whether there is an evaluation model providing a comprehensive overview

related to results of modernizing the tax administration.

To answer this question, the paper offers a simple model for evaluating the implementation of modern tax administration system by measuring its contribution to the tax compliance through tax sanction, tax morale, and tax service as an intermediary variable. The tax compliance elected is because of the role of tax compliance to achieve the optimum tax revenue. Likewise the tax sanction, tax morale, and tax service chosen as intermediary variables are expected to represent the external and internal elements that affect tax compliance.

Therefore, this paper is structured systematically through some parts. Section 1 provides an introduction, which is then followed by the theoretical foundation in Section 2. Section 3 presents the model and its explanation. The step-by-step methodology related to the model is shown in section 4. Finally, conclusions are remarked in section 5.

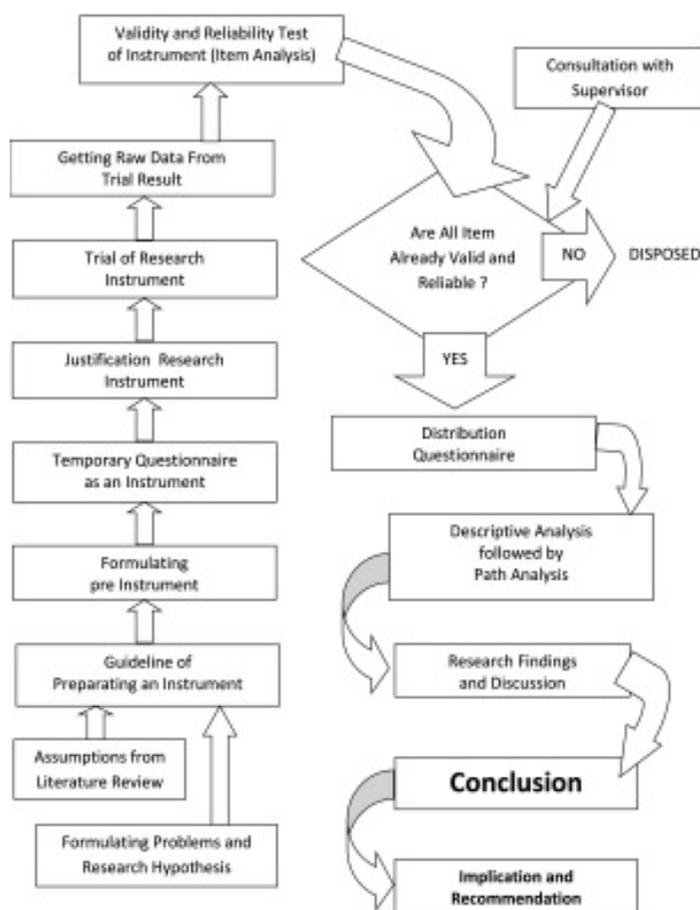
METHOD

Research procedure is intended in order to the research will give maximal result by conducting the right steps and reducing mistakes as small as possible. The research procedure is started by accomplishing the preparation such as determining the background of problem and formulating the problem and research hypothesis. The process is continued by determining assumptions from literature study, making the guidance of instruments; formulating the

pre research instrument, justifying the instrument, and testing the instrument in the outside of actual location.

The trial results are then analyzed per item by validity and reliability test. If not valid and reliable, question items are discarded. Items that are valid and reliable are then compiled into a fix questionnaire and then it is distributed to the actual location. The results of distributed questionnaires are then tabulated according to variables studied. The data used have the likert scale, therefore it can be tested directly by correlation and regression analysis as a requirement to do path analysis. These finding research are then discussed and interpreted in accordance with the analysis. Finally, they are then concluded and given some recommendations. The scheme of research procedure can be seen in Figure 2.

Figure 2. Research procedure



Source: Riduwan and Engkos A. K, 2010

RESULT

Making Steps of Examination

The measures of examination based on the model are:

1) Examining the Instrument with Validity and Reliability Test

a) Test of Validity

This test is used to examine the questionnaire before it is applied in the field. Validity test done relates to the accuracy of measuring instrument toward the concepts. According to Riduwan (2004:109-110), explains that validity is a measure that indicates the level of correctness or validity of a measuring instrument. To count the validity of measuring tool is, used Pearson Product Moment formula is:

$$r = \frac{N(\sum XY) - (\sum X \cdot \sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

where:

r = r count = coefficient of correlation

$\sum X_i$ = sum score of items

$\sum Y_i$ = total score (all items)

N = number of respondents.

Then, the result is calculated by t-test with the formula:

$$t_{count} = \frac{r \sqrt{n - 2}}{\sqrt{1 - r^2}}$$

t = t value

r = correlation coefficient
r result count

n = number of respondents.

Distribution (Table t) for $\alpha = 0.05$ and degrees of freedom ($df = n - 2$) in which rule-decision:

If $t \text{ count} > t \text{ table}$ means valid

Conversely $t \text{ count} < t \text{ table}$ means invalid

If the instrument is valid, then the interpretation of correlation index (r) as follows:

Between 0.800 to 1.000 : extremely high

Between 0.600 to 0.799 : higher

Between 0.400 to 0.599 : high enough

Between 0.200 to 0.399 : low

Between 0.000 to 0.199 : very low (not valid).

b) Test of Reliability

Reliability test is performed to measure the consistency of questionnaire. Reliability test was also carried out to obtain the level of congruence data collection tool (instrument) that is used. The formula is the Cronbach Alpha, and Anova Hoyt with the formula:

$$r_{ii} = \left(\frac{k}{k-1} \right) * \left(1 - \frac{\sum \sigma_1^2}{\sigma_t^2} \right)$$

r_{ii} = reliability of the instrument

k = number of the questions / statements

σ_1^2 = amount of variance of score points

σ_t^2 = variance of total score points

to seek the variance of the score of each item and the total variance question used the formula:

$$\sigma_1^2 = \frac{\sum X_i^2 - (\sum X_i)^2}{n(n-1)}$$

σ_1^2 = total score of each item variance

$\sum X_i^2$ = sum of squared score of each item

$(\sum X_i)^2$ = square of the sum of the scores of each subject each item

n = number of respondents

The rule-decision:

If $r_{11} > t \text{ table}$ means reliable

Conversely $r_{11} < t \text{ table}$ means unreliable

2) Analysis of Data Collection Result

a) Descriptive Analysis

This analysis was conducted to describe the condition of the data from questionnaire results.

• Frequency distribution

• Determining the range (R) = the largest point - the smallest point

• Determining the number of interval class by using sturger formula:

The number of classes = $1 + 3.3 \log n$,
 n = number of data / samples

Determining the length of the class interval (p) by means

$$p = \frac{\text{Range}}{\text{number of group}}$$

• Mean

$$\text{Mean} = \bar{x} = \frac{\sum f_i X_i}{n}$$

x = mean (arithmetic average)

Σ = sum

f_i = frekuensi to-i

X_i = the value of the data to - i

• Median

$$M_e = b + p \left(\frac{(1/2)n - F}{f} \right)$$

M_e = median

b = lower limit of median class (the class where the median lies)

p = length of the median class

n = sample size

F = the sum of all frequencies smaller than the frequency of the median class

f = frequency of the median class.

- **Mode**

$$Mo = n + p \left(\frac{b_1}{b_1 + b_2} \right)$$

Mo = mode

b = lower limit of the modal class (class interval with the highest frequency)

p = class length mode

b₁ = frequency of modal class minus the frequency of the class interval with a smaller class before the class mark mode

b₂ = frequency of modal class minus the frequency of the class interval with the larger class after class mark mode.

- **Standard Deviation**

$$SD = \frac{n \sum X_i^2 - (\sum X_i)^2}{n(n-1)}$$

SD = Standard Deviation

n = lots of data

Σ = sum

X_i = the value of the data to-i

- **Variance**

$$S^2 = n \sum f_i X_i^2 - (\sum f_i X_i)^2$$

S² = variance or standard deviation squared

Σ = sum

f_i = frequency of the i-th

X_i = the value of the data to-i

To analyze the descriptive data used SPSS applications.

b. Path Analysis

This analysis was first developed in the 1920s by a geneticist, namely Sewall Wright (Joreskog and Sorbon, 1996; Johnson & Wichernj, 1992). Path Analysis is a technique for estimating the effect's a set of independent variables has on a dependent variable from a set of observed correlations, given a set of hypothesized causal asymmetric relation among the variables. The main objective of path analysis is a method of measuring the direct influence along each separate path in such a system and thus of finding the degree to which variation of a given effect is determined by each particular cause. The method depend on the combination of knowledge of the degree of correlation among the variables in a system with such knowledge as many possessed of the causal relations (Maruyama, 1998:16).

Therefore, the path analysis models were used to analyze the pattern of relationships between variables in order to determine the direct and indirect effect of set of independent variables (exogenous) toward the dependent variable (endogenous) (Riduwan and Engkos, 2010). The assumptions that underly the use of Path Analysis are:

- Characteristics of relationship between the variables are normal, homogeneous, linear, and adaptive
- There is a one-way causal in which this relationship is proven by correlation test
- The dependent variable (endogenous) has minimaly ratio and interval scale
- It uses a probility sampling, that is a sampling technique to provide equal opportunities to each member of the sample
- There is a valid and reliable measurement instrument

- The model analyzed is specified or identified correctly based on the theories and relevant concepts

To meet the requirements of path analysis, the measures undertaken are:

1) Test of Data Normality

To determine whether normal or not research data, then it is conducted a measurement by using the Kolmogorov-Smirnov test (KS) test with criteria, namely:

If $a_{\text{count}} > a_{\text{table}}$ then the data are not normally distributed

If $a_{\text{count}} < a_{\text{table}}$ then the data were normally distributed

If the data above 35, then the critical values for the Kolmogorov-Smirnov Table (a_{table}) found using the formula:

(a) for $\alpha = 0.05$

$$K - S = \frac{1.36}{\sqrt{n}}$$

(b) for $\alpha = 0.01$

$$K - S = \frac{1.63}{\sqrt{n}}$$

For the calculation of a_{count} is used SPSS application. If the result is normally distributed, then the measurement can be continued.

2) Test of Regression

To determine the influence between variables and whether the dependent variable (Y) can be predicted/predictable if the independent variable (X) is known, then it is accomplished the regression test. The formula is:

Simple regression equation: $\bar{y} = a + bX$

$$a = \frac{\sum Y - b \cdot \sum X}{n}$$

$$b = \frac{n \cdot \sum XY - \sum X \cdot \sum Y}{n \sum X^2 - (\sum X)^2}$$

y = subject dependent variable is projected

X = independent variable that has a certain value for the predicted

a = constant price value Y if X = 0

b = value as a determinant of direction forecasts (predictions) that shows the value of the increase (+) or decrease the value of (-) variable Y

Multiple regression equation:

$$\bar{y} = a + b_1X_1 + b_2X_2 \dots$$

The significance value of regression equation can be seen from Sig-value. If $\text{Sig}_{\text{count}} < 0.05$ then the equation is significant. It means that the equation can be used to predict the value of dependent variable based on independent variable.

To calculate the significance of regression is used SPSS

3) Test of Correlation

After we know the influence between variables by looking at the significance of regression, then we can calculate the magnitude of relationship among variables by correlation test. The formula used is the Pearson Product Moment Formula:

Formula of Simple Correlation:

$$r = \frac{N(\sum XY) - (\sum X \cdot \sum Y)}{\left[N \sum X^2 - (\sum X)^2 \right] \left[N \sum Y^2 - (\sum Y)^2 \right]}$$

where:

r = r_{count} = coefficient of correlation

$\sum Xi$ = Total score of items

$\sum Yi$ = Total score total (all items)

n = Number of respondents.

Value of r exists between $-1 < r < +1$. If the value of $r = -1$, then correlation is perfect negative, if $r = 0$ means no correlation, and $r = 1$ means that the correlation is very strong. Table of interpretation of r values as follows:

Table 1. Interpretation of Correlation Coefficient r value

Interval Coefficient	Level Relations
0.800 to 1.000	very strong
0.600 to 0.799	strong
0.400 to 0.599	strong enough
0.200 to 0.399	low
0.000 to 0.199	very low

Source: Riduwan (2005:138)

To know the meaning/significance of the relationship can be calculated by t-test with t formula is:

$$t_{\text{count}} = \frac{r \sqrt{n - 2}}{\sqrt{1 - r^2}}$$

where:

t = t value

r = correlation coefficient r result count

n = number of respondents.

Distribution (Table t) for $\alpha = 0.05$ and degrees of freedom ($df = n - 2$)

Rule-making:

If $t_{\text{count}} > t_{\text{table}}$ means meaningful relationships

Conversely $t_{\text{count}} < t_{\text{table}}$ means no meaningful relationship.

Multiple Correlation formula:

To determine the relationship between variables X1 and X2...etc simultaneously toward variable Y

$$R_{x1.x2...y} = \frac{\sqrt{r^2_{x1.y} + r^2_{x2.y} \dots - 2(r_{x1.y}) \cdot (r_{x2.y}) \cdot (r_{x1.x2}) \dots}}{\sqrt{1 - r^2_{x1.x2\dots}}}$$

The interpretation and significance is the same with simple correlation. To calculate the value and significance of correlation is used SPSS application.

5) Testing with Path Analysis

The test is performed to measure the contribution represented by the path coefficient on each path of a causal relationship between the independent variable on the dependent variable. The steps performed are:

(a) The test as a whole

This test is carried out to know whether the individual contributions can be made. If the results is that Ha is accepted, then the test can be done individually. The stages are:

(1) Formulate statistical hypotheses

Ha: variable of X_1, X_2, \dots, X_i (independent) having a contribution simultaneously and significantly toward Y (dependent)

Ho: variable of X_1, X_2, \dots, X_i (independent) not having a contribution simultaneously and significantly toward Y (dependent)

(2) By ANOVA table, we obtain the F value and probability value (Sig). If $\text{Sig} < 0.05$ then Ho is rejected and Ha is received, so the next step can be done

• Testing manually is conducted by calculating the value of F with the formula:

$$F = \frac{(n - k - 1) \cdot R^2_{yXk}}{K(1 - R^2_{yXk})}$$

If $F_{\text{count}} > F_{\text{table}}$ Ha received so the next step can be done

(b) Testing individual and individual contributions

Tests are individually shown by Table Coefficient Strip. The steps are:

- Formulating the statistical hypothesis
 - Ha = variable of X_1 has a contribution significantly to the variable X_2
 - Ho = variable of X_1 does not has contribution significantly to the variable X_2

- (2) Conducting t test with the assistance of SPSS applications or manually by the formula:

$$t_{x1} = \frac{\rho_{x1}}{se_{\rho_{x1}}}$$

ρ_{x1} and $se_{\rho_{x1}}$ is obtained from computation result of the SPSS.

Interpretations are:

- If the probability of 0.05 is smaller than the probability of Sig value or $0.05 < \text{Sig}$, then Ho is accepted and Ha is rejected. It means the no significant result
 - If the probability of 0.05 is greater or equal than the probability of Sig value or $0.05 > \text{Sig}$, then Ho is rejected and Ha is accepted. It means the significant result
- (3) Measuring the contribution of independent variables to the dependent variable. The magnitude of contribution in accordance with the formula of Determinant Coefficient (DC) = $r^2 \times 100\%$ is: the magnitude of contribution = (path coefficient)² x 100%

(c) Measuring the overall contribution (simultaneous)

Measuring the simultaneous contribution of all independent variables to the dependent variable by formula:

$$R^2_{y(x1.x2 \dots)} = \sum (\tilde{n}y_{x_i}) \cdot (ry_i) = (\tilde{n}y_{x_1}) \cdot (ry_1) + (\tilde{n}y_{x_2}) \cdot (ry_2) + \dots$$

The magnitude of contribution =

$$R^2_{y(x1.x2 \dots)} \times 100\%$$

Theoretical Foundation

According to Guillermo Perry and John Whalley, when a country's tax system has been developed, approach to reform is put on the improvement in compliance and tax administration. Improving the compliance is very important in the tax reform, and perhaps more important than structural changes in the taxation system. Several concepts have been developed and research related to such matters are:

Modern Tax Administration System (MTAs) is the implementation of a transparent and accountable tax administration system by utilizing information technology systems that are reliable and up to date. Based on the theory of Caiden (1991), there are four indicators that become dimensions of modern tax administration, namely: (1) organizational structure, (2) organizational procedure, (3) organizational strategy, and (4) organizational culture. Research that examines the relationship between modern tax administration and tax compliance conducted by Dr. Chaizi Casucha (2004) in which the result is reform of the tax administration have a major impact on taxpayer compliance. Another study focused more on the relationship between the application of modern tax administration system with tax compliance, conducted by Marcus Typhoon Sofyan. In the thesis, Entitled Effect of the Application of Simplified Taxation System Against the Taxpayer Compliance Tax Services Office at the Environment Directorate General of Taxation Regional Office Large Taxpayer produced in 2005 that there is a positive

and significant effect (90.30277%) between the application of modern tax administration system with tax compliance.

Tax sanction is a guarantee that the provisions of tax legislation (tax norm) will be followed/complied and become a preventive tool so that the taxpayer does not violate the norms of taxation. In the tax laws, there are two kinds of sanction. Firstly, the administrative sanction that is loss payments to the state such as interest and increase pinalties. Secondly, criminal sanctions. Research about tax penalties and tax compliance was conducted by Michael Doran (2008), in which the result is that tax penalties should provide tax compliance, but it is not effective to raise extensively the compliance. Other research from Rahmanita (2011) indicates that the implementation of tax penalties and implementation of billing and have significant positive impact on taxpayer compliance. The simultaneous influence of 49.14%.

Tax morale is the principles, norms, and values that were held by individuals in realizing their tax obligations or intrinsic motivation. Research associated with the relationship between tax morale with tax compliance carried out by James Alm and Benno Torgler, 2006. The result is an existence of significant influence between the tax compliance with tax morale and culture in the country. It means that there are influence of values, social norms and attitudes toward the implementation of taxation in a country. This research also notes circumstances that affect tax morale among others: (1) perception of fairness including the government's treatment to taxpayers (fair or not), (2) trust toward government institutions, (3) characteristic of the fiscal exchange between taxpayers and government including how do government services in the exchange process, (4) government awards to

taxpayers such as giving fully the trust to taxpayers to calculate, pay and report their taxes (self assessment) including rewards to honest taxpayers (reward and punishment system).

Tax service is all forms of tax official activities in a certain period in order to fulfill the expectations/needs of taxpayers and to implement regulations. According to Zeithaml et al in "Delivering Quality Service Balancing Customer Perceptions and Expectations" (1990:26), there are five indicators to measure service quality (SERVQUAL/ methodology for measuring service quality), namely: (1) tangible, that is the appearance of physical facilities, equipment, labor, and tools of communication; (2) reliability, that is the ability to provide a service that has been promised reliably and accurately, (3) responsiveness, that is the willingness to help customers and to provide immediately services, (4) assurance, that is the knowledge and courtesy of employees in serving customers, including their ability to maintain customer trust, (5) emphaty, that is the individual concern and attention provided by the company to the customer. The research related to the relationship between the tax service and tax compliance performed by Lederman (2003) in his study entitled "Tax Compliance and the Reformed IRS". The result is IRS reform that focuses to tax service has succeed effectively to increase tax compliance. As suggestion, the maintenance of taxpayers is more focused on services.

Tax compliance is all activities of taxpayer to fulfill their tax obligations in accordance with the tax regulations. Indicators of compliance, according to Nasucha Chaizi cited by Siti Kurnia (2006:111), are: (1) tax compliance in registering taxes, (2) tax compliance in delivering notification letters, (3) tax compliance in calculatin and paying tax

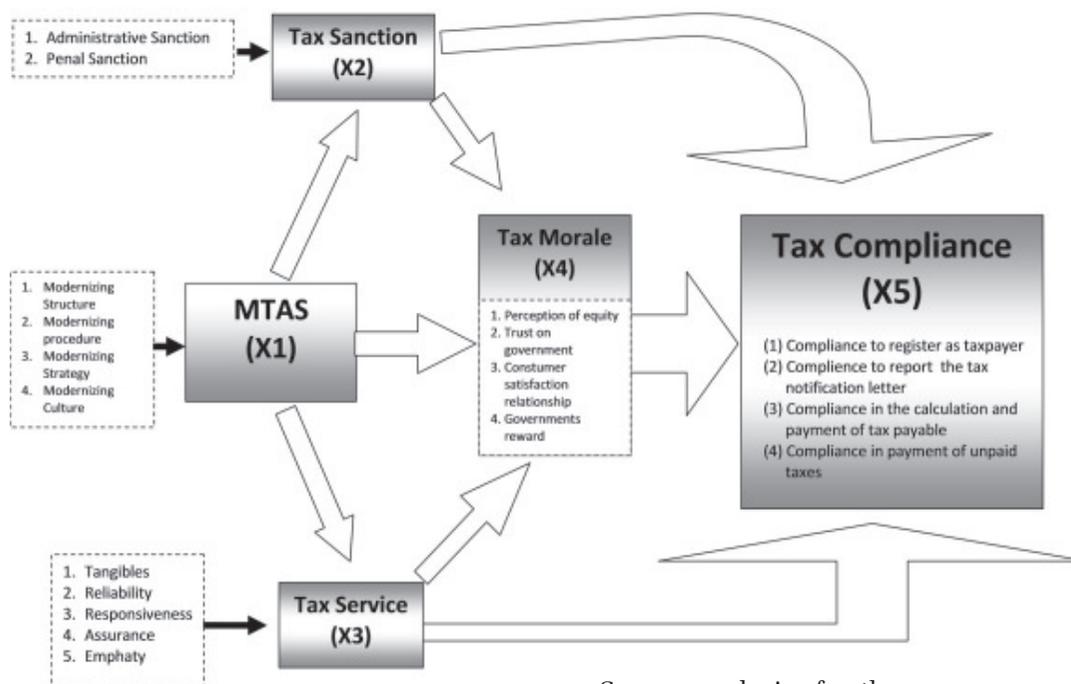
payables, and, (4) tax compliance in paying arrears.

Modernizing the tax administration is a state effort to improve tax compliance. Based on the research previously, there is a significant relationship between the modern tax administration and tax compliance. Another result is the existence of meaningful relationship between the modern tax administration with tax sanction, tax morale and tax service, in which these variables affects directly and indirectly the tax compliance

Design of Evaluation Model

From an overall perspective, both theoretically and empirically, and then it is developed an evaluation model of implementation of modern tax administration system with its influence toward tax compliance effect in which tax sanction, tax morale, and tax service act as an intermediary variable. Complete design model is as follows:

Figure 1. Model Evaluation of Modern Tax Administration System Towards Tax Compliance



In figure 1 is built the relationship between the modern tax administration system (MTAs) with tax compliance through saction tax, tax morale, tax service as an intervening variable. By this model is expected to facilitate measuring directly and indirectly the contribution of MTAS on tax compliance.

In the tax compliance system, it is possible if there are two models of compliance, namely voluntary and forced tax compliance. The variable of tax sanction, tax morale and tax service were expected to represent driving factors toward the 2 models of compliance.

The election of tax sanction, not the other variables such as tax audit, is because for all evaluation activities, the tax sanction has an important role. As well as any tax audit activities will be useless if there are no sanctions for irregularities. Other selected variable is tax morale. Tax morale is an internal element and becomes an important factor that affects tax compliance. The last intervening variable is the tax service. This variable chosen is because the one that affects tax compliance is tax

Source: analysis of author

administration service. Satisfaction on this aspect will influence the compliance of taxpayer.

Variable of tax sanction and service becomes an external intermediary variable and tax morale for internal intervening variable of tax compliance. Direct relationship of tax sanction variable to tax compliance describes the driving factor of forced compliance. On the other hand, the indirect relationship tax sanction and service through tax morale toward tax compliance shows the driving factors of voluntary compliance.

CONCLUSION

Currently, taxes are still the leading source for countries in the world in getting funds to finance economic activity and government. Its major role makes the government paid great attention to improve this sector through tax reform. One element of tax reform is modernizing the tax administration. This process takes much time and considerable expense where the source comes from public money. Therefore the government should accountable it by conducting the evaluation of modern tax administration implementation and make improvements immediately so that the tax system process can run appropriate with expectations.

This paper offers a model of evaluation of the modern tax administration implementation by measuring its contribution to tax compliance through tax sanction, tax morale, and tax services as an intervening variable. The stages to achieve that are namely making research procedure and systematic review flow, including measuring the data by using Path Analysis. With conducting the evaluation by using this model is expected to find variables that have the lowest contribution and should be the focus of government attention in making improvements and to give useful information in formulating the tax reform in the future.

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