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Measurement Model of Service Quality, Regional Tax Regulations, Taxpayer Satisfaction Level, Behavior and Compliance Using Confirmatory Factor Analysis

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ABSTRACT: The purpose of this research is to study the indicators and variables that form quality of tax services, regional tax regulations, taxpayer satisfaction level, taxpayer behavior, as well their compliance in theory using confirmatory factor analysis (CFA) approach. CFA measurement models are based on convergence validity test, discriminant validity test and reliability test. The research was conducted in Mataram. The results of this research provided that measurement model using CFA approach is the best model, based on goodness of fit criteria for taxpayer obedience and the indicators on tax service quality, regional tax regulations, taxpayer satisfaction level, taxpayer behavior and tax payer compliance are valid in convergence and discriminant also reliable. The strongest indicator for tax service quality is responsiveness, while the strongest indicator for regional tax regulations is explication of the regulations. The strongest indicator for taxpayer satisfaction level is hope, sanctions for taxpayer behavior and tax reporting for taxpayer obedience.

Key words: Taxpayer *compliance* · CFA · Convergence validity · Discriminant validity · Reliability · Goodness of Fit.1.

INTRODUCTION

Tax compliance can be identified from taxpayer obedience in self-reporting, obedience in returning back the Surat Pemberitahuan (Notification Letter/ SPT), obedience in calculating and paying the payable taxes and obedience in paying the arrears. Compliance issue became important because disobedience simultaneously would lead to tax avoidance, such as tax evasion and tax avoidance. It can cause the reduction of tax payment to the national funding. Tax compliance is basically effected by tax administration system circumstances including tax service and tax enforcement. Tax administration improvement itself expected to motivate tax compliance.

The tax collecting never being an easy job, aside from active role of the revenue officer also demanded taxpayer self-awareness. Other efforts which no less important are to increase taxpayer satisfaction through tax service improvement. The improvement of service quality and quantity will increase taxpayer satisfaction so that taxpayer would be more complying in paying the tax.

Based on [1] provided that service quality which are reliability, assurance, responsiveness and tangible had positive and significantly effect to motorcycle taxpayer satisfaction. While empathy is positive but not significant. Reliability, responsiveness, assurance, empathy and tangible awere simultaneously and significantly effect to motorcycle taxpayer satisfaction in Sragen regional. Reliability had dominant effect for motorcycle taxpayer satisfaction in Sragen regional.

Betty and Sally classified the factors related to taxpayer behavior: there is a perception that avoiding and not paying the tax is common and generally acceptable, unsatisfied citizen regarding the government expenditure priority, chance for avoiding and complicated law [2]. The higher the compliance level, the more nation tax

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Table 1: Latent Variables Indicators

No	Research Variables	Indicators	Source
1.	Tax service quality (X_1)	X1.1. Tangible X1.2. Reliability X1.3. Responsiveness X1.4. Assurance X1.5. Empathy	Theory: SERVQUAL (Service Quality) Parasuraman, Zeithaml and Berry (1990). Oliver's (1977) Research: Cords, 2006; Fitriandi, Birowo and Aryanto, 2007
2	Regional Tax Regulation (X_2)	X2.1. Regional Tax Regulation Clearance X2.2. Tax Incentive X2.3. Regulation Overlap	Theory: Institusional Theory Zukler (1987) Donaldson (1995). Research: Nurmantu (2003),
3.	Taxpayer Satisfaction (Y_1)	Y1.1. Perception Y1.2. Performance Y1.3. Importance	Theory: Cognitive Dissonance Theory Hunt (1991) Research: Mohamad (2010)
4	Taxpayer Behavior (Y_2)	Y2.1. Sanction and Fine Y2.2. Tax Avoiding Y2.3. Self-restrain	Theory: Theory of Planned Behavior Fishbein (1975) dan Ajzen (1980),(1991) Research: Misu (2011)
5	Taxpayer Compliance (Z_1)	Z1.1. Tax Calculation Z1.2. Punctual Tax Payment Z1.3. Tax Reporting	Theory: Compliance Theory Tyler, Saleh (2004) Research: Bobek and Hatfield (2003), Blanthorne (2000), dan Hanno and Violette (1996) dalam Mustikasari (2007:3) serta Hidayat and Nugroho (2010)

Source: [11;13;15;16]

revenue succeed. Hence, encouraging taxpayer compliance will lead to encouraging the succeed of tax revenue.

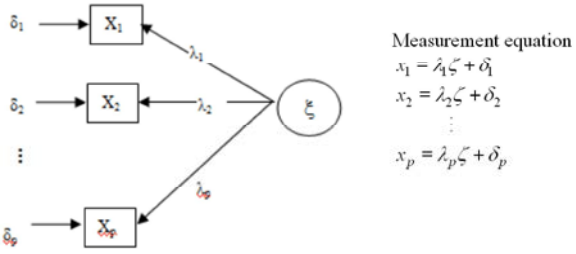
Tax compliance is a behavior of tax function as constellation of cognitive, effective and conative component interacting in understanding, feeling and behave towards the meaning and the function of tax. Kepatuhan wajib pajak dalam melaksanakan kewajiban di bidang perpajakan akan sangat mendorong bagi peningkatan penerimaan daerah dari sektor pajak.

Confirmatory factor analysis (CFA) CFA is a part of Structural Equation Modeling (SEM). Based on [4], CFA is not meant to determine factor structures, but to confirm the specific existence factor structure. One of the advantages of CFA is that its flexibility level on sophisticated hipothesis model. Estimation method for CFA using maximum likehood able to determine optimal loading factor [6].

This research was conducted on Mataram taxpayer. There will be a study of indicators and variables effecting taxpayer service quality, regional tax regulations, taxpayer satisfaction, taxpayer behavior and taxpayer compliance theoretically [7, 9-12, 14, 16]. Those were wrapped in theoretical model and proved by field data into data-driven model.

MATERIALS AND METHODS

Data collected was primary data via survey on economic sector. Data then analyzed using CFA method. The survey included 157 taxpayer as respondents in Mataram [5].



Source: [4; 6; 8]

Fig. 1: Measurement Model for Single Latent Variabel

Principal concepts of CFA starts with corfim several factors (problem dimension), each dimension then being deeply investigated based on theoretical indocators to test the process or phenomenon.

Measurement model for one latent variable was shown on the following picture.

In matrix form it could be writtent as follows:

$$X = \Lambda_x \xi + \delta \quad (1)$$

where:

X : Matrix of indicator variables
Λ_x : Matrix of lambda (loading factor)
ξ : Matrix of latent variable
δ : Error

Supposed latent variable can be measured by 2 indicators (p = 2), the measurement equation will be represented into these two following equations:

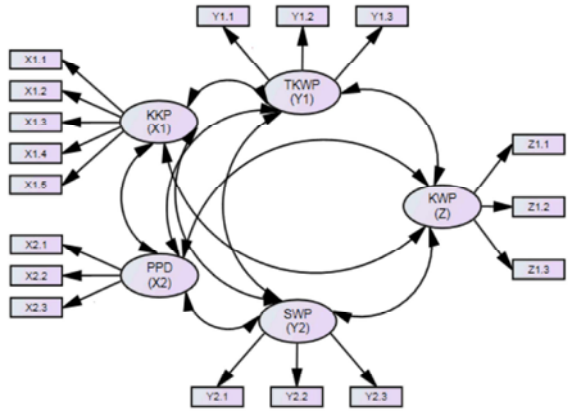


Fig. 2: Conceptual Model of Taxpayer Compliance

$$x_1 = \lambda_1 \xi + \delta_1 \; ; \; x_2 = \lambda_2 \xi + \delta_2 \qquad (2)$$

Determining whether indicator variables are genuinely valid in measuring factor or construct and explain the factor dimension well (unidimentionality) were conducted using t-test statistics. The use of this test was caused of the loading factor (Λ_i) of CFA using standardized estimate is on the same level with the regression. [8]. The hypothesis is as follows :

H_0 : $\lambda_i = 0$ (loading factors in measuring latent variables are insignificant)

H_1 : $\lambda_i \neq 0$, (loading factors in measuring latent variables are significant), i = 1,2,...p

where i = 1,2,.....p are indicator variables.

The test statistics for loading factor is:

$$t = \frac{\hat{\lambda}_i}{\hat{S}(\lambda_i)} \qquad (3)$$

Where:

$\hat{\lambda}_i$: Parameter estimator for causal relationship

$$\hat{S}(\lambda_i) = \sqrt{\frac{\hat{\sigma}^2}{\sum_{i=1}^{n}(X_i - \bar{X})^2}}$$

$\hat{\sigma}^2$: Variance of observation variable X

X_i : Value of observation variable X

$\bar{x}$: Mean of observation varioable X

If t-value < $t_{(\alpha,df)}$ then H_0 cannot be rejected and the parameter estimators of causal relationship (regression coefficients) in insignificant measuring causalities among the variables. In other words, it can be said that the variables do not form unidimensionality. This research conceptual were provided in the following graph.

Measurement model constructed of convergence validity and discriminant validity. Convergence validity is scored by the loading factors bigger than.5 dan critical ratio (CR) value bigger than t-table and also the latent variable satisfy unidimensional characteristic. While discriminant validity is scored by correlation value between small latent variable or insignificant covariance between latent variables.

RESULTS AND DISCUSSION

Convergence Validity and Reliability of Taxpayer Compliance: The test for complete model using AMOS shown in Table 2. In the table, it is seen that loading factor value and error variance for each indicator of latent variable: tax service quality, regional tax regulation, taxpayer satifaction, taxpayer behavior and taxpayer compliance. Tax service quality, since all the loading score are greater than 0.5, so there are 5(five) indicators measruing tax servide quality: tangible (X1.1), reliability (X1.2), responsiveness (X1.3), assurance (X1.4) and empathy (X1.5). Regional tax regulation since all the loadings were greater than 0.5, hence there were 3 indicators in measuring regional tax regulation: tax regulation clearence (X2.1), tax incentive (X2.2), regulation overlap (X2.3). Taxpayer satisfaction while all the loadings were greater than 0.5, hence there were 3 indicators to measure Taxpayer satisfaction: perception (Y1.1), performance (Y1.2), importance (Y1.3). Taxpayer behavior (SWP), since all the loadings were greater than 0.5, hence there were 3 indicators to measure taxpayer behavior: sanction and fine (Y2.1), tax avoiding (Y2.2), self-restrain (Y2.3). Taxpayer compliance, since all the loadings were greater than 0.5, hence there were 6 indicators to measure taxpayer compliance: tax calculation (Z1.1), punctual payment (Z1.2), tax reporting (Z1.3).

While for reliability as shown in Table 2, in fact latent variable tax service quality gave CR value 0.8666 over the cut-off (0.7). In other word, tax service quality was reliable. Each indicator for the same variable had p-variance value smaller than 0.05, hence the indicators were reliable. Latent variable regional tax regulation gave CR value 0.780 above the cut-off. It made the latent variable were reliable. Each indicators for the variable had p-variance value smaller than 0.05, hence the indicators were reliable. Taxpayer satisfaction gave CR value 0.839 over the cut-off. It made the latent variable were reliable.

Table 2: Convergence Validity and Indicators Reliability Validitas for tax services quality, regional tax regulation, taxpayer satisfaction level, taxpayer behavior,and taxpayer compliance

		Convergence Validity			Reliability			
Variable	Indicator	Loading Factor	*p*-value	Conclusion	*Variance Error*	p-value	Conclusion	Composite Reliability
Tax services quality	Tangible (X1.1)	0.651	0.000	Valid	0.200	0.000	Reliable	0.866
	Reliability (X1.2)	0.758	0.000	Valid	0.189	0.000	Reliable	
	Responsiveness (X1.3)	0.895	0.000	Valid	0.070	0.000	Reliable	
	Assurance (X1.4)	0.882	0.000	Valid	0.085	0.000	Reliable	
	Empathy (X1.5)	0.533	0.000	Valid	0.253	0.015	Reliable	
Regional tax regulation	Tax regulation clearence (X2.1)	0.770	0.000	Valid	0.284	0.000	Reliable	0.780
	Tax incentive (X2.2)	0.702	0.000	Valid	0.297	0.000	Reliable	
	Regulation overlap (X2.3)	0.736	0.000	Valid	0.336	0.000	Reliable	
Taxpayer satisfaction level	Perception (Y1.1)	0.804	0.000	Valid	0.134	0.000	Reliable	0.839
	Performance (Y1.2)	0.702	0.000	Valid	0.214	0.000	Reliable	
	Importance (Y1.3)	0.879	0.000	Valid	0.098	0.000	Reliable	
Taxpayer behavior	Sanction and fine (Y2.1)	0.852	0.000	Valid	0.107	0.000	Reliable	0.823
	Tax avoiding (Y2.2)	0.621	0.000	Valid	0.186	0.000	Reliable	
	Self-restrain (Y2.3)	0.852	0.000	Valid	0.246	0.000	Reliable	
Taxpayer complaince	Tax calculation (Z1.1)	0.736	0.000	Valid	0.217	0.000	Reliable	0.792
	Punctual payment (Z1.2)	0.740	0.000	Valid	0.171	0.000	Reliable	
	Taz reporting (Z1.3)	0.767	0.000	Valid	0.197	0.000	Reliable	

Table 3: Discriminant Valdity for tax services quality, regional tax regulation, taxpayer satisfaction level, taxpayer behavior,and taxpayer compliance

	Discriminant Validity				
Covariance	Estimator	Standard Error	Critical Rasio (CR)	*p*-value	Conclusion
Tax service quality with regional tax regulation	.025	.019	1.316	.167	Valid
Tax service quality with regional taxpayer satisfaction	.047	.035	1.343	.161	Valid
Tax service quality with regional taxpayer behavior	.042	.033	1.272	.177	Valid
Tax service quality with regional tax payer compliance	.062	.049	1.265	.178	Valid
Regional tax regulation with taxpayer satisfaction	.106	.097	1.093	.218	Valid
Regional tax regulation with taxpayer behavior	.068	.054	1.259	.179	Valid
Regional tax regulation with taxpayer compliance	.152	.139	1.094	.218	Valid
Taxpayer satisfaction with taxpayer behavior	.062	.057	1.088	.219	Valid
Taxpayer satisfaction with taxpayer compliance	.114	.098	1.163	.201	Valid
Taxpayer behavior with taxpayer compliance	.083	.073	1.137	.208	Valid

Table 4: Goodness of Fit Model Test for Taxpayer Compliance

Criterion	Cut-Off Value	Statistics Test	Remark
Chi - Square	Expected to be small	116.563	χ^2 with df = 105 is 129.918 Good
Significance Probability	≥ 0,05	0.207	Good
RMSEA	≤ 0,08	0.027	Good
GFI	≥ 0,90	0.922	Good
AGFI	≥ 0,90	0.887	Good
CMIN/DF	≤ 2,00	1.110	Good
TLI	≥ 0,95	0.986	Good
CFI	≥ 0,95	0.989	Good

Each indicators for the variable had *p*-variance value smaller than 0.05, hence the indicators were reliable. Taxpayer behavior CR value 0.823 over the cut-off. It made the latent variable were reliable. Each indicators for the variable had *p*-variance value smaller than 0.05, hence the indicators were reliable. Taxpayer compliance gave CR value 0.792 over the cut-off. It made the latent variable were reliable. Each indicators for the variable had *p*-variance value smaller than 0.05, hence the indicators were reliable.

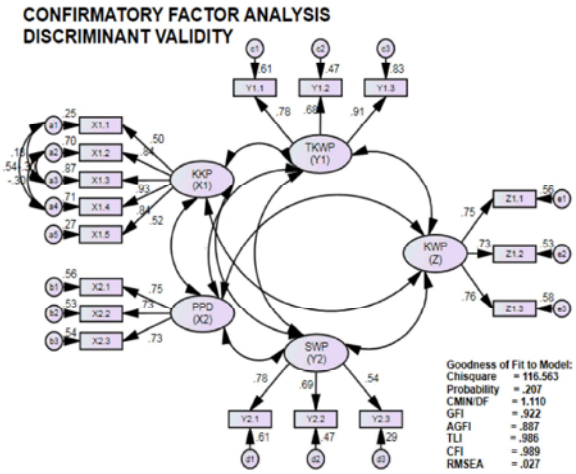


Fig. 3: Relationship of Tax Service Quality, Regional Tax Regulation, Taxpayer Satisfaction, Taxpayer Behavior and Compliance

Discriminant Validity of Taxpayer Compliance: Table 3 showed that *p*-value for every covariance between two latent variables among tax service quality, regional tax regulation, taxpayer satisfaction, taxpayer behavior, taxpayer compliance gave scores greater than 0.05. In other words, this condition fulfilled the discriminant validity.

The detail relationship diagram among the latent variables is shown in the following picture.

Measurement Model Goodness of Fit for Taxpayer Compliance: The test of measurement model using AMOS were summarized in this following table:

Based on Figure 3 and Table 4, we get that 8 (eight) criterias used to determine the model's fitness in fact provided good result. Hence, measurement model for discriminant validity was acceptable. In other words, the model was already suitable for the data.

CONCLUSION

The results of this research showed that CFA could provide fit measurement model for taxpayer compliance and tax service quality indicator, regional tax regulation, taxpayer satisfaction and compliance are valid in convergence and discriminat also reliable. The highest score for regional tax regulation indicator is assurance, it is regional tax regulation clearence for tax regulation. Satisfaction level indicator is importance, sanction and fine for taxpayer behavior and tac reporting for taxpayer compliance.

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