Service Delivered on New Transit System from Users Viewpoint (Case Study: TransJogja and TransMusi-Indonesia)

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Abstract:

Aiming to tackle the increased motorization in Indonesian cities, particularly motorcycles phenomenon, the Ministry of Transportation (MoT) of Indonesia enacted decree No 51 of 2007, promoting pilot cities for land transport improvement. From the target of thirty pilot cities by 2014, to date, twenty seven cities have signed a memorandum of understanding with MoT and launched more than twenty new transit systems, in addition to TransJakarta as the pioneer of a program. Unfortunately, after over five years of operation, most of the new transit systems have failed to expand to meet the increasing travel demand from population growth, including TransJogja of Jogjakarta and TransMusi of Palembang. This paper examines user perceptions of new transit operation, regarding service quality, subsidy and fare, satisfaction, and loyalty expressed by the customers of TransJogja and TransMusi services.

Authors' proposed a path analysis with structural equation modelling (SEM) due to its useful to researchers as a multivariate technique combining regression, factor analysis, and analysis of variance to estimate interrelated dependence relationships simultaneously.

The result illustrates that the subsidy and fare is the only one of the exogenous construct variable that significant in the both TransJogja and TransMusi models. Furthermore, all determinants of service quality, all determinants of subsidy and fare, all determinants of satisfaction and all determinants of loyalty are valid in the TransJogja model, while all determinants of service quality, two from three determinants of subsidy and fare, one from three determinants of satisfaction and two from three determinants of loyalty are valid in the TransMusi model

***Keywords**:*

New transit system, service quality, SEM, path analysis, Indonesia

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1 Introduction

Trying to suppress the increased motorization in Indonesian cities, particularly motorcycles, the Ministry of Transportation (MoT) enacted a decree No 51 of 2007 promoting pilot cities for land transport improvement. The decree mandates the pilot city candidates to reflect their commitments by providing documents declaring their preparedness in terms of institutional capacity, funding capacity, human resource availability and urban transportation master plan. Moreover, the initiatives gained stronger regulatory support by the enactment of the new Traffic Law No 22 of 2009. The law specifically promotes pro-public transport policy development in the cities. In Article 158, it's explicitly states that the government must ensure the availability of land-based mass transit system to meet urban mobility needs. As the implementation of the law, MoT provides technical assistance to promote new urban transit system in order to gradually replace the old buses and restructure the existing bus routes to create a more efficient urban bus networks.

The MoT funds several fleets, supports some of the infrastructures and local government is required to allocate resources and subsidies simultaneously to ensure the sustainability of new transit system's operation. From the target of twenty pilot cities by 2013, to date, fourteen cities have signed memorandum of understanding with MoT and launched such transit systems, in addition to TransJakarta as the pioneer of the programmed. TransJogja of Jogjakarta and TransMusi of Palembang are included in it. Both cases of selected cities are relatively different in terms of driving force of cities' economics where Palembang grows by contributing of natural resources such oil and coal while Jogjakarta is a city that relies on tourism and rental house services.

Unfortunately, after over five years of operation, most of the new transit systems have failed to expand to meet the increasing travel demand from population growth, including TransJogja of Jogjakarta and TransMusi of Palembang. Both cities are allocating subsidies to maintain the level of fares at affordable price. However, when the bus operations are subsidized, bus companies typically gain sufficient revenues to maintain their service quality. Because of this, it is interesting to know why the service quality continues decline as well as the number of passengers. It must be recognized that in the case of both TransJogja and TransMusi transit projects, the local governments guarantee the return on the investment by the operating company through only one type of government subsidy: compensation for fare revenue shortfall. There is no a grant provided for maintaining service levels as commonly applied in other countries. In addition, the fact on field survey also showed the different fare subsidy level of both cities Jogjakarta and Palembang. TransMusi set a flat rate of Rp 5,000, while TransJogja is only Rp 3,500, which means that TransJogja users receive fare subsidy of nearly 40%, while users of TransMusi receive fare subsidy of less than 30%. This research confirms the authors' hypothesis regarding the effect of subsidy and fare of user loyalty to Trans bus as a new mode of urban transport in the medium-sized cities of developing countries, such as Indonesia. To test the level conditions of service delivered, user perception analysis is needed to determine a rate of importance and a rate of satisfaction on each determinant.

This paper examines user perceptions of new transit operation, regarding service quality, subsidy and fare, satisfaction, and loyalty expressed by the customers of TransJogja and TransMusi services. Authors' proposed a path analysis with structural equation modelling (SEM) due to its useful to researchers as a multivariate technique combining regression, factor analysis, and analysis of variance to estimate interrelated dependence relationships simultaneously.

Some authors used SEM application in public transport (for example, Bamberg and Schmidt, 1998; Fillone, et al., 2005; Tam, et al., 2005; Joewono and Kubota, 2007). The model proposed in this paper investigates the impact of TransJogja and TransMusi aspects on global customer satisfaction. The service analyzed is most commonly used by students and government employees to reach the campuses and workplaces from outskirt of the Palembang and Jogjakarta cities. To calibrate the model, data collected in a series of field surveys addressed to a sample of TransJogja and TransMusi's users were used. The results of analysis might as well confirm why the number of transit passengers tends to decrease after over three to five years of operation. Moreover, the results of SEM can be used by local government in providing a better of supplied service quality of Trans bus that can attract further users.

This paper commences with an introduction to a theoretical framework of structural equation models. Furthermore, the experimental survey is described and the statistical descriptive analysis of the sample is showed. The last section discusses the general structure of the proposed model and presents the model result.

2 Structural Equation Models

Structural equation modeling

• is a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables.

• is a methodology for representing, estimating, and testing a theoretical network of (mostly) linear relations between variables.

• tests hypothesized patterns of directional and non-directional relationships among a set of observed (measured) and unobserved (latent) variables (MacCallum & Austin, 2000).

Two goals in SEM are (1) to understand the patterns of correlation/covariance among a set of variables and (2) to explain as much of their variance as possible with the model specified (Kline, 2005).

It is inevitable, the SEM methodology spread quick as a consequence of the rapid development of specific packages, like LISREL (Jereskog and Sorbom, 1988; 1989; 1995) and AMOS (Arbuckle and Wothke, 1999). The presence of these packages has encouraged some applications in different contexts. This approach enables the modelling of a phenomenon by considering both the unobserved latent construct and the observed indicators that describe the phenomenon.

Originally, SEM are made up of two components, i.e. the first describes the relationship between endogenous and exogenous latent variables, and permits the evaluations of both direction and strength of the causal effects among these variables (latent variable model); the second component describes the relationship between latent and observed variables (measurement model).

Generally, the structural equation modelling is estimated by using the maximum likelihood method (ML). In other cases, the structural equation model parameters can be estimated by using other estimation methods, such as unweighted least squares (ULS), weighted least squares (WLS), and generalized least squares (GLS), and so on. These estimation methods are described in Bollen (1989) and Washington, et al. (2003).

2.1 Path analysis with structural equation modeling

Analyzing research data and interpreting results could be complex and confusing. Traditional statistical approaches to data analysis specify default models, assume measurement occurs without error, and are somewhat inflexible. However, structural equation modeling requires specification of a model based on theory and research, is a multivariate technique incorporating measured variables and latent constructs, and explicitly specifies measurement error. A model (diagram) allows for specification of relationships between variables.

Path analysis with SEM is similar to traditional methods like correlation and regression in many ways. First, both regression and path analysis are based on linear statistical models. Second, statistical tests associated with both methods are valid if certain assumptions are met. Regression methods assume a normal distribution and path analysis assumes multivariate normality. Third, neither approach offers a test of causality.

Regression analysis differs from path analysis in several areas. First, path analysis is a highly flexible and comprehensive methodology. Second, regression methods specify a default model whereas path analysis with SEM requires formal specification of a model to be estimated and tested. SEM offers no default model and places few limitations on what types of relations can be specified. SEM model specification requires researchers to support hypothesis with theory or research and specify relations a priori.

Third, path analysis is a multivariate technique specifying relationships between observed (measured) variables. Multiple, related equations are solved simultaneously to determine parameter estimates. Variables in path analysis could be independent and dependent whereas variables in Regression Analysis are either independent or dependent. Fourth, path analysis allows researchers to recognize the imperfect nature of their measures. SEM explicitly specifies error or unexplained variance while regression analysis assumes measurement occurs without error.

Fifth, traditional analysis provides straightforward significance tests to determine group differences, relationships between variables, or the amount of variance explained. Path analysis provides no straightforward tests to determine model fit. Instead, the best strategy for evaluating model fit is to examine multiple tests. Finally, a graphical language provides a convenient and powerful way to present complex relationships in path analysis. Model specification involves formulating statements about a set of variables. A diagram, a pictorial representation of a model, is transformed into a set of equations. The set of equations are solved simultaneously to test model fit and estimate parameters.

2.2 Statistics

Traditional statistical methods normally utilize one statistical test to determine the significance of the analysis, R Square for regression analysis. Structural equation modeling, however, relies on several statistical tests to determine the adequacy of model fit to the data. The chi-square test indicates the amount of difference between expected and observed covariance matrices. A chi-square value close to zero indicates little difference between the expected and observed covariance matrices. In addition, the probability level must be greater than 0.05 when chi square is close to zero.

The Comparative Fit Index (CFI) is equal to the discrepancy function adjusted for sample size. CFI ranges from 0 to 1 with a larger value indicating better model fit. Acceptable model fit is indicated by a CFI value of 0.90 or greater. Root Mean Square Error of Approximation

(RMSEA) is related to residual in the model. RMSEA values range from 0 to 1 with a smaller RMSEA value indicating better model fit. Acceptable model fit is indicated by an RMSEA value of 0.06 or less.

If model fit is acceptable, the parameter estimates are examined. The ratio of each parameter estimate to its standard error is distributed as a z statistic and is significant at the 0.05 level if its value exceeds 1.96 and at the 0.01 level it its value exceeds 2.56. Unstandardized parameter estimates retain scaling information of variables and can only be interpreted with reference to the scales of the variables. Standardized parameter estimates are transformations of unstandardized estimates that remove scaling and can be used for informal comparisons of parameters throughout the model. Standardized estimates correspond to effect-size estimates.

If unacceptable model fit is found, the model could be revised when the modifications are meaningful. Model modification involves adjusting a specified and estimated model by either freeing parameters that were fixed or fixing parameters that were free. The Lagrange multiplier test provides information about the amount of chi-square change that results if fixed parameters are freed. The Wald test provides information about the change in chi-square that results if free parameters are fixed.

3 Data Collection

In this research, the sample surveys were addressed to both TransJogja and TransMusi passengers who used these urban transit services as a daily transport mode. As a city of tourism, education and culture, population of Jogjakarta is 510,108 with a density 15,695 people/km^2, while Palembang, whose growth relied on natural resources is higher more than three times (1,708,413) but with a density only 4,765 people/km^2 (2012). Both Jogjakarta and Palembang started to operate a new transit system in 2008 and 2010, respectively. Daily ridership of TransJogja and TransMusi is about 16,000 and 22,000 passengers, respectively (2013). However, these number of transit users tend to decrease gradually, though the bus operations supported by the local governments through fares subsidy.

A single transit agency manages the transit bus in each city. They are the Jogja Tugu Trans Limited in Jogjakarta and the Sarana Pembangunan Palembang Jaya Limited in Palembang. Generally, the service is available from 6 am to 21 or 22 pm but a service frequency is delivering without timetable. Based on field survey, the service frequency is varying from twenty five to sixty minutes depend on level of congestion along route and also weather conditions, since the buses running in the mix traffic. In rainy season, the travel time tends to be longer because of some roads are flooded, causing delay that exceeds normal travel time.

The field surveys, conducted in June to July 2014, were addressed to transit passengers who use the Jogjakarta's TransJogja and Palembang's TransMusi services. A total of 242 TransJogja passengers and 334 of TransMusi passengers were interviewed, for a sampling rate of 1.5 percent of daily ridership. Respondents were asked to fulfill information about their socioeconomic characteristics and Trans bus service quality. Some passenger socioeconomic characteristics requested were: gender, age, marital status, place of living, number of family members, education, job, income, motorized vehicle ownership, reason for making use of Trans bus, trip purpose, and overall satisfaction.

Table 1 Factor and attributes of service quality, satisfaction and loyalty

1. **Service Quality (Q)**
   Frequency and reliability (X1)
   Safety and security (X2)
   Customer service and information availability (X3)
2. **Subsidy and Fare (C)**
   Affordability of fare (X4)
   Benefits of subsidy (X5)
   Subsidy mechanism (X6)
3. **Satisfaction (S)**
   Satisfaction with overall services (Y4)
   Satisfaction with comfort (Y5)
   Satisfaction with helpfulness of personnel (Y6)
4. **Loyalty (L)**
   Loyalty to use Trans bus if service quality improved (Y1)
   Loyalty to use Trans bus if the overall services satisfy (Y2)
   Loyalty to use Trans bus if the fares affordable (Y3)

To evaluate Trans bus service quality, the respondent of both TransJogja and TransMusi was asked about three important determinants with nine attributes, in which each determinant factor has three attributes (see Table 1). In all question, respondents were asked to rate each attribute on a five point scale of satisfaction, ranging from very dissatisfied to very satisfied. Furthermore, the last one is a question regarding the loyalty of transit's user. The respondent asks whether he or she will make use of Trans bus in the future. For each question, the respondent was shown several prerequisites, such as if service quality improved, overall services satisfy, and the fares affordable. In all question, respondents were asked to rate each attribute on a five point scale of loyalty, ranging from strongly disagree to strongly agree. Commonly, the three prerequisites aim to capture requirements asked by the user when they become loyal.

4 Descriptive Statistics

The descriptive statistics of respondents regarding socioeconomic characteristics of both TransJogja and TransMusi users are provided in Table 2. As shown in the table, more than a half of Trans users of both Jogjakarta and Palembang cities are students. Another striking characteristic of respondent is the age of the majority of users is under 40 years old and single status. Furthermore, the women constitute as the largest portion of TransJogja user, otherwise the male is the primary user of TransMusi. Nearly 40 percent of TransJogja users residing outside the municipality indicate nearly half of the traveler to travel across the region. At the same time, the figure was 26 percent in the city of Palembang. His presentation could potentially continue to grow, since the population of both cities are continues to increase.

Table 2 Socioeconomics' data of Trans users

Characteristics	TransJogja's users n= 242	TransMusi's users n= 334
1. Sex	Male (48%); Female (52%)	Male (56%); Female (44%)
2. Marital status	Married (34%); Single (66%)	Married (38%); Single (62%)
3. Age	≤20 (42%); 21-30 (30%); 31-40 (21%); >40 (7%)	≤20 (39%); 21-30 (33%); 31-40 (24%); >40 (4%)
4. Place of living	Municipality area (62%); Outside the municipality (38%)	Municipality area (74%); Outside the municipality (26%)
5. Family members	1 (11%); 2 (16%); ≥3 (73%)	1 (14%); 2 (19%); ≥3 (67%)
6. Job	Student (60%); civil servant (15%); private employee (16%); entrepreneur (6%); others (3%)	Student (51%); civil servant (22%); private employee (20%); entrepreneur (3%); others (4%)
7. Education	Junior high school or less (16%); Senior high school (48%); Diploma or higher (36%)	Junior high school or less (15%); Senior high school (56%); Diploma or higher (29%)
8. Income (IDR)	<1 million (41%); 1-2.5 million (39%); 2.5-5 million (12%); >5 million (8%)	<1 million (43%); 1-2.5 million (35%); 2.5-5 million (9%); >5 million (13%)
9. Motorized vehicle ownership	Did not own any car (37%); motorcycle (48%); automobile (15%)	Did not own any car (29%); motorcycle (52%); automobile (19%)
10. Reason for making use of Trans bus	Did not own any car (35%); prefer to make use of new transit (49%); unable to drive (16%)	Did not own any car (28%); prefer to make use of new transit (51%); unable to drive (21%)
11. Trip purpose	School/university (57%); work (27%); recreation (10%); social activity (4%); others (2%)	School/university (48%); work (35%); recreation (8%); social activity (6%); others (3%)
12. The way to reach bus stop	Walking (78%); park and ride (4%); others (18%)	Walking (81%); park and ride (2%); others (17%)
13. Number of trip using Trans bus per day	Once (31%); twice (48%); three time or more (21%)	Once (38%); twice (43%); three time or more (19%)
14. Overall satisfaction	Very dissatisfied (9%); dissatisfied (18%); neutral (43%); satisfied (21%); very satisfied (9%)	Very dissatisfied (13%); dissatisfied (14%); neutral (39%); satisfied (29%); very satisfied (5%)

5 Analysis

5.1 TransJogja of Jogjakarta model

In this paper, path analysis was employed to reveal the relationship among variables. This section is consisted of a single analysis where TransJogja and TransMusi users were separated and the model for each passenger transit is analyzed separately as well. Parameter estimates for

TransJogja user is presented in Table 3 and Figure 1, respectively, while parameter estimates for TransMusi user is presented in Table 4 and Figure 2, respectively. The TransJogja model has the chi-square as much as 64.055 (df = 49) resulting in the models being rejected at .05. This model has the normed chi-square (chi-square/df) as much as 1.307 or less than two as a perfect fit.

Table 3 Parameter estimates for TransJogja user

Parameter	**Standardized estimate**	**Significance level**
	Regression weights	
Satisfaction ← Service quality	.247	**
Satisfaction ← Subsidy and fare	.651	***
Loyalty ← Service quality	-.213	**
Loyalty ←Subsidy and fare	.930	***
Loyalty ←Satisfaction	.226	**
Frequency and reliability ← Service quality	.652	*
Safety and security ← Service quality	.784	***
Customer service and information availability ← Service quality	.764	***
Affordability of fare ← Subsidy and fare	.734	*
Benefits of subsidy ← Subsidy and fare	.708	***
Subsidy mechanism ← Subsidy and fare	.833	***
Loyalty to use Trans bus if service quality improved ← Loyalty	.799	*
Loyalty to use Trans bus if the overall services satisfy ← Loyalty	.695	***
Loyalty to use Trans bus if the fares affordable ← Loyalty	.779	***
Satisfaction with comfort ← Satisfaction	.873	***
Satisfaction with helpfulness of personnel ← Satisfaction	.816	***
Satisfaction with overall services ← Satisfaction	.832	*
Service quality ⟷ Subsidy and fare	.881	***
Goodness of fit	Chi-square= 64.055; df= 49; Cmin/df= 1.307; Probability level= .073; GFI= .957; AGFI= .932; NFI= .963; IFI= .991; CFI= .991; RMSEA= .036	

Note: ***significant at 1%; **significant at 5%; *significant at 10%

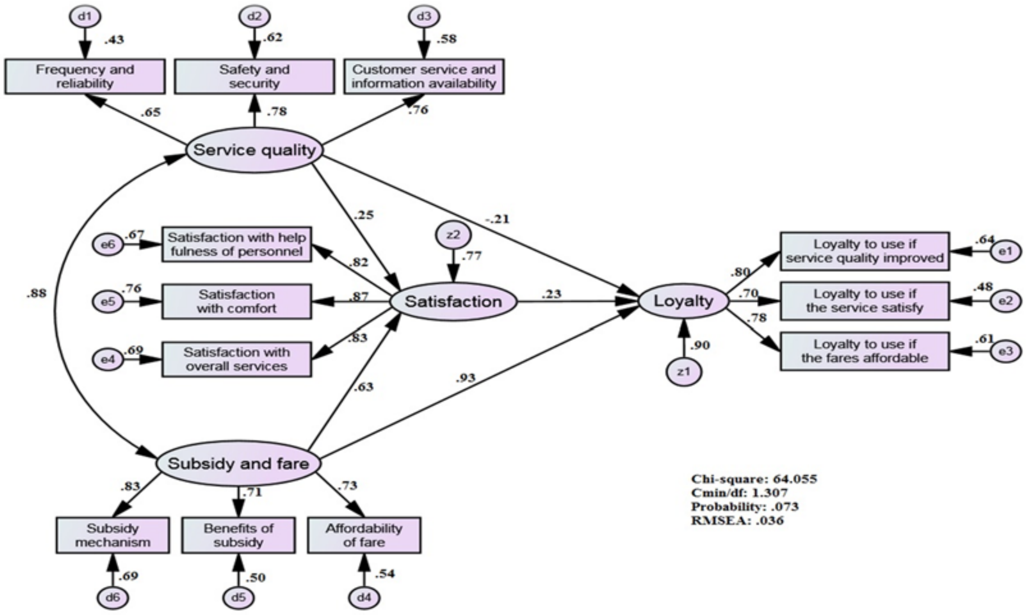

Figure 1 Direct and indirect relationship among variables of TransJogja model

The GFI of TransJogja model is .957 which is a value near one, meaning the model is a perfect fit. The values of the AGFI, NFI, IFI, and CFI for the TransJogja model are .932, .963, .991, and .991, respectively, which these values are near one, meaning the model is a perfect fit. The RMSEA of this model is .036, which the value near to zero as a perfect fit. Based on these results, it is clear that the TransJogja model has a good fitness, since all parameter fit values are obtained, which implies a good fit model. According to AMOS results in both Table 3 and Figure 1, it is clear that only the subsidy and fare of the exogenous construct variable significant at the .001 level, while other exogenous variables are not significant in the TransJogja model as shown by the p-values are far greater than 0.001. For example, the p-value for the path Satisfaction ← Service quality is .139, which means that the probability of getting a critical ratio as large as 1.48 in absolute value is .139. In other words, the regression weight for Service quality in the prediction of Satisfaction is not significantly different from zero at the .05 level.
Referring to Standardized Regression Weights in Table 3, it is clear that all determinants of service quality, all determinants of subsidy and fare, all determinants of satisfaction and all determinants of loyalty are valid, which these values are more than .5. Furthermore, the two structural equations resulted by TransJogja model is as follow:

Satisfaction = .247 Service quality + .651 Subsidy and fare, and
Loyalty = -.213 Service quality + .930 Subsidy and fare + .226 Satisfaction

Thus, it can be concluded that the subsidy and fare play a significant roles in influencing both satisfaction and loyalty of TransJogja user rather than service quality. On the other hand, it is difficult for local governments to subsidize bus Trans continuously, since most of them are faced with the burden of increased expenditures without the power to raise revenues on the scale needed.

5.2 TransMusi of Palembang model

In this part, path analysis was also employed to reveal the relationship among variables. The parameter estimates for TransMusi user is presented in Table 4 and Figure 2, respectively. The TransMusi model has the chi-square as much as 9.555 (df = 15) resulting in the models being rejected at .05. This model has the normed chi-square (chi-square/df) as much as 0.637 or less than two as a perfect fit. While the values of the AGFI, NFI, IFI, and CFI for the TransMusi model are .983, .985, 1.009, and 1.000, respectively. The RMSEA of this model is .000, which the value same to zero as a perfect fit. Based on these results, it is clear that a few parameter fit values of TransMusi model is exceeded one, which implies a marginal fit model.

Referring to AMOS results in both Table 4 and Figure 2, it is clear that only the subsidy and fare of the exogenous construct variable significant at the .001 level, while other exogenous variables are not significant in the TransMusi model as shown by the p-values are far greater than 0.001. For example, the p-value for the path Loyalty ← Satisfaction is .974, which means that the probability of getting a critical ratio as large as 0.033 in absolute value is .974. In other words, the regression weight for Satisfaction in the prediction of Loyalty is not significantly different from zero at the .05 level.

Table 4 Parameter estimates for TransMusi user

Parameter	Standardized estimate	Significance level
	Regression weights	
Satisfaction ← Service quality	-.084	**
Satisfaction ← Subsidy and fare	.004	**
Loyalty ← Service quality	.016	**
Loyalty ←Subsidy and fare	.392	***
Loyalty ←Satisfaction	.002	**
Frequency and reliability ← Service quality	.822	*
Safety and security ← Service quality	.834	***
Customer service and information availability ← Service quality	.514	***
Loyalty to use Trans bus if service quality improved ← Loyalty	.793	*
Satisfaction with overall services ← Satisfaction	.996	*
Subsidy mechanism ← Subsidy and fare	.641	***
Loyalty to use Trans bus if service satisfy ← Loyalty	.725	***
Benefits of subsidy ← Subsidy and fare	.954	*
Service quality ⟷ Subsidy and fare	-.091	**
Goodness of fit	Chi-square= 9.555; df= 15; Cmin/df= .637; Probability level= .847 GFI= .993; AGFI= .983; NFI= .985; IFI= 1.009; CFI= 1.000 RMSEA= .000	

Note: ***significant at 1%; **significant at 5%; *significant at 10%

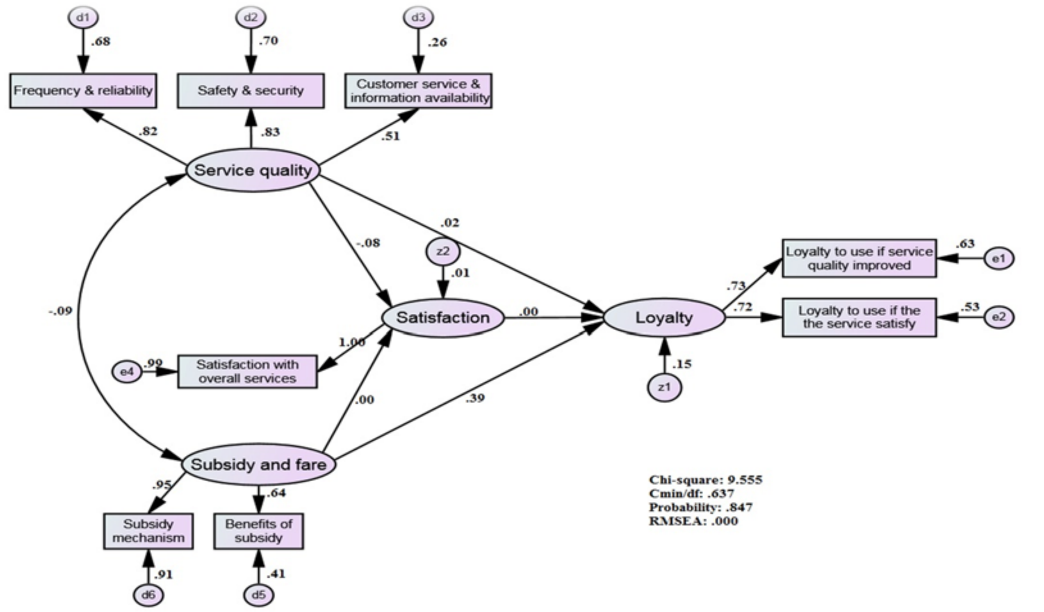

Figure 2 Direct and indirect relationship among variables of TransMusi model

Moreover, referring to Standardized Regression Weights in Table 4 and Figure 2, it is clear that all determinants of service quality, two from three determinants of subsidy and fare, one from three determinants of satisfaction and two from three determinants of loyalty are valid, which these values are more than .5. In the TransMusi model, a number of determinants of each construct variable, except service quality, were removed since the regression weight values are less than .5. Furthermore, the two structural equations resulted by TransMusi model is as follow:

Satisfaction = -.084 Service quality + .004 Subsidy and fare, and
Loyalty = -.016 Service quality + .392 Subsidy and fare + .002 Satisfaction

As the TransMusi model tended marginal fit, it is evident that the same both determinants and variables developed of TransJogja model not always suitable to be applied in other places, where the characteristics of the city is different. For example, both service quality and subsidy fare are excluded in determining of satisfaction of TransMusi user as well as service quality and satisfaction in determining of loyalty. In contrary, these variables are the most effect in influencing both satisfaction and loyalty of TransJogja user.

By comparing these results, it can be concluded that the TransJogja's model seems to have a closer similarity with the model of all respondents. In other words, the perception of TransJogja user tends to be able to represent the perception of the respondent refers to the developed model.

6 Conclusions

In this paper, authors examine passenger perception which was expressed by transit user participation in rating the new mode's condition, including service quality, satisfaction and loyalty. Authors try to explore more deeply with regard to the effects of subsidy and fare of exogenous variable, since both operators of TransJogja and TransMusi receive an amount of subsidies from their local governments. The distribution of questionnaire to TransJogja and

TransMusi passengers took places in Jogjakarta and Palembang, Indonesia. These cities have been chosen because these are the most populated areas and the most rapid growth of transit systems, respectively. They are also of comparable size in terms of transit system operations and data is available for both selected cities.

This research employs the path analysis to reveal and examine the data. The subsidy and fare is the only one of the exogenous construct variable that significant in the both TransJogja and TransMusi models. Furthermore, all determinants of service quality, all determinants of subsidy and fare, all determinants of satisfaction and all determinants of loyalty are valid in the TransJogja model, while all determinants of service quality, two from three determinants of subsidy and fare, one from three determinants of satisfaction and two from three determinants of loyalty are valid in the TransMusi model. Moreover, the findings from path analysis suggested that both local governments should pay more attention regarding the subsidy and fare aspect rather than service quality and satisfaction aspects in order to enhance the public satisfaction and loyalty. It can be said that more improved subsidy mechanism and benefits of subsidy can increase the user loyalty to use Trans bus in future.

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