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Acceptance letter

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Dear Corresponding author:

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Paper Title:

**Public Transport Service Quality Model The Intended Users Using
Structural Equation Modeling**

I send you best wishes and respect.

We fell pleasure to inform you that your paper that mention above has been reviewed by expert referees and accepted for publication in **Australian Journal of Basic and Applied Sciences (AJBAS)** Indexed in *THOMSON REUTERS (Formerly known as ISI)*". Our reviewers have made some corrections during the evaluation process. Additional questions concerning your paper will be sent along with the galley proof, if needed. Your article has been scheduled to appear in the coming issue of **Australian Journal of Basic and Applied Sciences (AJBAS)** (October issue 2013).

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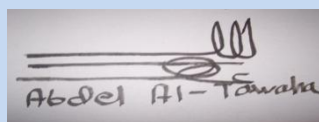
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Public Transport Service Quality Model The Intended Users Using Structural Equation Modeling

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ABSTRACT

Transportation problem is a complex issue, because the rate of growth of road infrastructure is not proportional to the increase in the amount of motion meningkat. Hal as shown by the high level of private vehicle ownership, mobility journey, an indication of public transport services are inadequate and limited highway. So that the resulting cause congestion, delay time, and a decrease in the level of comfort. This study will examine models of public transport services Surabaya - Sidoarjo desired by the user. The analytical method used is Confirmatory Factor Analysis (CFA) to confirm the indicators of the latent variables and Structural Equation Modeling (SEM) to determine the effect between the latent variables. The results showed that the services, facilities, operations, accessibility, ethics and infrastructure positive and significant effect on the model of public transport services with GFI at 69.3 percent. Model quality public transport service desired user community is

$$Y = 1,229X1 + 0,288X2 + 0,131X3 + 0,276X4 + 0,288X5 + 0,113X6$$

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INTRODUCTION

Mass transit by Act No. 2 of 2009, has a definition that is road transport which is held to mewujudkan traffic and road transport with a safe, secure, fast, smooth, orderly and organized, comfortable and efficient and is able to integrate other modes of transport, to reach all corners of the land area to support equity, growth and stability as a driver, driving and supporting national development at reasonable costs by purchasing power.

The concept of urban movement has always dominated the movement of commuters, especially with the availability of land in the city of Surabaya increasingly difficult, so many choose expansion to the south (Sidoarjo) and the West (Gresik). Indicates the increasing population density of traffic flow and the higher trip generation of the corridors of the transition to Surabaya and vice versa. This is also indicated by the severity of the bottlenecks that occur on the highway and the length of travel time.

Segment transport conditions Surabaya - Sidoarjo today still rely on road transport, the majority use motorcycle transport modes by 55.19 percent. It is necessary for the development of models of service quality desired user community. Specifically this study aims to obtain a model of service quality in the corridor Sidoarjo - Surabaya.

In this study assessed indicators and variables that affect service quality theoretical models, which are then compiled into a theoretical model which will be evidenced by the field data into a data-based model. These variables will be analyzed using Structural Equation Modeling (SEM).

Metodologi:

Sampling was carried out against the people who use the corridor Surabaya-Sidoarjo. The data will be analyzed in this study were primary data taken directly by giving the questionnaire questions via questionnaires. The sampling method which will be used is probability sampling using simple random sampling SEM for models of service quality is based on the factors and indicators of service, facilities, operations, accessibility, ethics and infrastructure are taken from the literature. Conceptual studies are presented as follows:

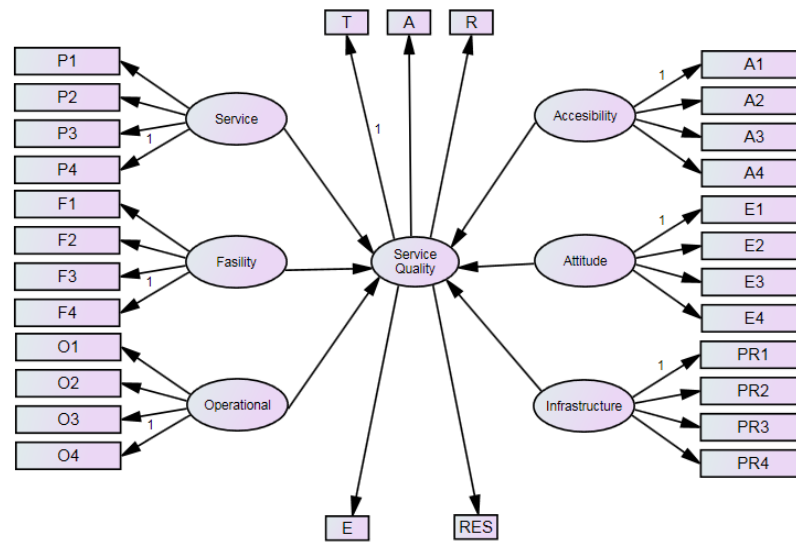


Fig. 1: Conceptual Model of Service Quality Research Based Public Transport Users

Structural equation model (Structural Equation Modeling) is one of the multivariate method that allows researchers to examine the complex relationship between the variables. SEM is an integrated approach to factor analysis, path analysis and structural models (lines). SEM is also called Covariance Structure Model or Model LISREL (Linear Structural Relationship) in (Hair et al., 2010). On the other hand SEM is also an integrated approach to the analysis of the data by construction concept. In the structural model are two variables, namely the exogenous and endogenous variables. Exogenous variable is a variable whose value is determined outside the model, such as the independent variable and variable instrument.

The steps in this research are as follows.

1. Compiled questionnaire as a tool or instrument of research.
2. Test the validity and reliability using CFA on each exogenous and endogenous latent variables, such as service, facilities, operations, accessibility, ethics, infrastructure and quality of service
3. SEM analysis
 - Establish lines on exogenous variables on endogenous variables
 - Testing the model simultaneously through Goodness of fit criteria Model
 - Test parameters partially.

RESULTS AND DISCUSSION

Testing the validity and reliability of indicators on latent variables Services (X1), Facilities (X2), Operational (X3), Accessibility (X4), Ethics (X5), Infrastructure (X6) and services (Y) are presented in Table 1 below.

Table 1: Convergent Validity and Reliability Indicators In Latent Variable Services (X1), Facilities (X2), Operational (X3), Accessibility (X4), Ethics (X5), Infrastructure (X6) and services (Y)

Variables	Indicator	Validitas Konvergen			Reliability			Composite Reliability
		Loading Factor	p-value	Information	Estimate error	p-value	Information	
Service (X1)	Waiting time of Bus (X1.1)	0.977	0.000	Valid	0.012	0.018	Reliabel	0.945
	Passengers standing (X1.2)	0.974	0.000	Valid	0.013	0.009	Reliabel	
	Cleanliness in the bus (X1.3)	0.840	0.000	Valid	0.080	0.000	Reliabel	
	Density of passengers in bus (X1.4)	0.799	0.000	Valid	0.132	0.000	Reliabel	
facilities (X2)	Conditions seat (X2.1)	0.858	0.000	Valid	0.073	0.000	Reliabel	0.963
	conditions window	0.949	0.000	Valid	0.043	0.000	Reliabel	

operational (X3)	(X2.2) availability of AC (X2.3)	0.931	0.000	Valid	0.062	0.000	Reliabel	0.973
	handle on the bus (X2.4)	0.980	0.000	Valid	0.022	0.015	Reliabel	
	Tariffs applied (X3.1)	0.951	0.000	Valid	0.064	0.000	Reliabel	
	Facilities and public transport facilities (X3.2)	0.971	0.000	Valid	0.044	0.000	Reliabel	
Aksesibility (X4)	Dense settlements to shelter (30-300mt) (X3.3)	0.962	0.000	Valid	0.056	0.000	Reliabel	0.862
	Less dense settlements to shelter (500-1000mt) (X3.4)	0.913	0.000	Valid	0.097	0.000	Reliabel	
	Ease of Mass Public Transport (X4.1)	0.805	0.000	Valid	0.175	0.000	Reliabel	
	After the use of Mass Public Transport (X4.2)	0.807	0.000	Valid	0.193	0.000	Reliabel	
Ethics (X5)	Availability of public transport during peak hours (X4.3)	0.634	0.000	Valid	0.424	0.000	Reliabel	0.832
	Availability of public transport to destination (X4.4)	0.865	0.000	Valid	0.139	0.000	Reliabel	
	driver attitudes (X5.1)	0.553	0.000	Valid	0.219	0.001	Reliabel	
	skill of driver (X5.2)	0.816	0.000	Valid	0.184	0.000	Reliabel	
	hospitality conductor (X5.3)	0.728	0.000	Valid	0.246	0.000	Reliabel	
	Accuracy refunds (X5.4)	0.858	0.000	Valid	0.170	0.000	Reliabel	

Table 1: (continued) Convergent Validity and Reliability Indicators In Latent Variable Services (X1), Facilities (X2), Operational (X3), Accessibility (X4), Ethics (X5), Infrastructure (X6) and services (Y)

Variables	Indicator	Validitas Konvergen			Reliability			Composite Reliability
		Loading Factor	p-value	Information	Estimate error	p-value	Information	
Infrastructure (X6)	Condition of the route (X6.1)	0.813	0.000	Valid	0.251	0.000	Reliabel	0.941
	Condition of the shelter (X6.2)	0.969	0.000	Valid	0.029	0.016	Reliabel	
	Availability of shelter on the route (X6.3)	0.947	0.000	Valid	0.052	0.000	Reliabel	
	Infrastructure development plan (X6.4)	0.841	0.000	Valid	0.292	0.000	Reliabel	
Quality of Service (Y)	Tangible (Y1.1)	0.879	0.000	Valid	0.071	0.000	Reliabel	0.959
	Empathy (Y1.2)	0.962	0.000	Valid	0.127	0.000	Reliabel	
	Reliability (Y1.3)	0.964	0.000	Valid	0.027	0.000	Reliabel	
	Responsiveness (Y1.4)	0.895	0.000	Valid	0.017	0.000	Reliabel	
	Assurance (Y1.5)	0.833	0.000	Valid	0.116	0.000	Reliabel	

Test by loading factor measurement model was conducted to determine the validity of indicators of convergent validity by looking at the value of the existing indicators in the model. Each indicator in the model must meet the convergent validity ie loading factor has a greater value 0.5 and said significant if p-value $< \alpha = 0.05$ level. While the reliability of the test aims to test the reliability of the construct variables using Composite reliability (CR). Composite reliability showed satisfactory value if the value of CR > 0.7 .

Table 1 shows the service indicator (X1), Facilities (X2), Operational (X3), Accessibility (X4), Ethics (X5), Infrastructure (X6) and Quality of Service (Y) all give you loading values above 0.5 and p-value less than 0.05. It can be concluded that the indicator-indikator on each latent variable is valid and significant. So is the p-value pegujian reliability has more value than 0.05. So it can be said to be reliable and significant indicator. While the variable CONSTRUCTS also provide composite reliability values above 0.7, it can be said variable kontruknya reliable.

Structural Model test results are shown through structural path coefficients. More structural path coefficient results shown in the following figure.

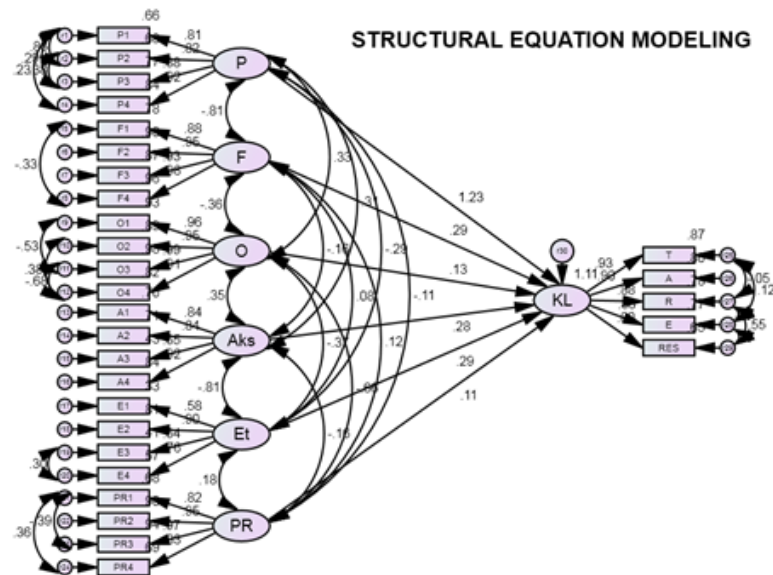


Fig. 1: Service (X1), Facilities (X2), Operational (X3), Accessibility (X4), Ethics (X5), Infrastructure (X6) on the Quality of Service (Y)

The test results on the complete model with AMOS program is available at the following table:

Table 2: Servicing Model Testing Results (X1), Facilities (X2), Operational (X3), Accessibility (X4), Ethics (X5), Infrastructure (X6) on the Quality of Service (Y)

Criteria	Value Cut – Off	Calculation Results	Information
Chi – Square	Small Expected	597.973	χ^2 with df = 340 is 383.999 Not good
Significance Probability	$\geq 0,05$	0,000	Not good
RMSEA	$\leq 0,08$	0,079	Good
GFI	$\geq 0,90$	0,693	Good Enough
AGFI	$\geq 0,90$	0,607	Good Enough
CMIN/DF	$\leq 2,00$	1,759	Good
TLI	$\geq 0,90$	0,896	Good Enough
CFI	$\geq 0,90$	0,913	Good

Based on Table 1, shows that 6 (six) the criteria used to judge the worth / declare whether or not a model of good turns. It can be said that the model is acceptable, which means there is a match between the model with the data, so it is not necessary modifications to the model.

Of a suitable model, it can be interpreted each path coefficient. The path coefficients are hypothesized in this study, which can be presented in the following structural equation:

$$Y = 1,229X1 + 0,288X2 + 0,131X3 + 0,276X4 + 0,288X5 + 0,113X6$$

wherein:

Y = Model the desired Quality of Service

X1 = Services

X2 = Facility

X3 = Operational

X4 = Accessibility

X5 = Ethics

X6 = Infrastructure

Testing path coefficients are presented in detail in the following table:

Table 3: Path Coefficients Testing Results Model of Service Quality

Variables	coefficient	C.R.	Prob.	Information
Service (X1) → Quality of Service (Y)	1.229	8.768	.000	Significant
Facilities (X2) → Quality of Service (Y)	.288	2.486	.013	Significant
Operational (X3) → Quality of Service (Y)	.131	2.037	.042	Significant
Aksesibility (X4) → Quality of Service (Y)	.276	2.903	.004	Significant
Ethics (X5) → Quality of Service (Y)	.288	2.657	.008	Significant
Infrastructure (X6) → Quality of Service (Y)	.113	1.976	.048	Significant

Table 3 is based on the interpretation of each path coefficient is as follows:

- Service (X1) positive and significant impact on the Quality of Service (Y). This is evident from the marked positive path coefficient of 1.229 with a value of CR of 8768 and gained significance probability (p) of 0.000 which is greater than the significance level (α) is set at 0.05. Thus Care (X1) directly affects the Quality of Service (Y) of 1.229, which means that whenever there is increase in Services (X1) then it will raise the Quality of Service (Y) for 1,229

- Facility (X2) positive and significant impact on the Quality of Service (Y). This is evident from the marked positive path coefficient of 0.288 with a value of CR amounted to 2,486 and gained significance probability (p) of 0.013 which is greater than the significance level (α) is set at 0.05. Thus Facility (X2) directly affects the Quality of Service (Y) of 0.288, which means that whenever there is an increase Facility (X2) then it will raise the Quality of Service (Y) of 0.288

- Operations (X3) positive and significant impact on the Quality of Service (Y). This is evident from the marked positive path coefficient of 0.131 with a value of CR amounted to 2,037 and gained significance probability (p) of 0.042 which is greater than the significance level (α) is set at 0.05. Thus Operations (X3) directly affects the Quality of Service (Y) of 0.131, which means that whenever there is an increase of Operations (X3) then it will raise the Quality of Service (Y) of 0.131

- Accessability (X4) positive and significant impact on the Quality of Service (Y). This is evident from the marked positive path coefficient of 0.276 with a value of CR amounted to 2,903 and gained significance probability (p) of 0.004 which is greater than the significance level (α) is set at 0.05. Thus Accessibility (X4) on the direct effect of Service Quality (Y) of 0.276, which means that whenever there is increase in accessibility (X4) it will raise the Quality of Service (Y) of 0.276

- Ethics (X5) positive and significant impact on the Quality of Service (Y). This is evident from the marked positive path coefficient of 0.288 with a value of CR obtained at 2.657 and significance probability (p) of 0.008 which is greater than the significance level (α) is set at 0.05. Thus Ethics (X5) directly affects the Quality of Service (Y) of 0.288, which means that whenever there is increase in Ethics (X5) then it will raise the Quality of Service (Y) of 0.288

- Infrastructure (X6) positive and significant impact on the Quality of Service (Y). This is evident from the marked positive path coefficient of 0.113 with a value of CR amounted to 1,976 and gained significance probability (p) of 0.048 which is greater than the significance level (α) is set at 0.05. Thus Infrastructure (X6) directly affects the Quality of Service (Y) of 0.113, which means that whenever there is an increase Infrastructure (X6) it will raise the Quality of Service (Y) of 0.113

Conclusion:

The results showed that the measurement model to service, Facilities, Operations, Accessibility, Ethics, Infrastructure and Quality of Service are valid and reliable. The next model of service quality of public transport corridors desired user community Sidoarjo - Surabaya for 1,229 affected services, facility by 0288; operational by 0131, the accessibility of 0276, 0288 and the ethics of infrastructure by 0113. Best solution models that should be taken should also be seen from the model of service quality based on stakeholders.

REFERENCES

- Brown, T.A., 2006. *Confirmatory Factory Analysis for Applied Research*. The Guilford Press, New York.
- Hair, J.F., JR. Anderson, R.E. Tatham, R.L. & W.C. Black, 2010. *Multivariate Data Analysis*. Six Edition. New Jersey : Pearson Educational, Inc.
- Johnson, R.A & D.W. Wichern, 1992. *Applied Multivariate Statistical Analysis*. Prentice Hall, Englewood Chiffs, New Jersey.
- Kenny, D.A dan C.M. Judd, 1984. "Estimating the Non-linear and Interactive Effect of Latent Variables". *Psychological Bulletin*. 96.
- Kline, R.B., 2005. *Principle and Practice of Structural Equation Modeling*. The Guilford Press, New York: London

- Levy, P.S., and L. Stanley, 1999. Sampling of Populations: Methods and Applications. Third Edition. John Wiley and Sons. Inc. New York.
- Mulaik, S.A., 2009. *Linear Causal Modeling With Structural Equation*, Chapman and Hall, USA
- Sekaran, U., 2006. *Metodologi Penelitian untuk Bisnis 2* (Edisi 4). Jakarta: Salemba Empat.