Causal Relationship Regarding Quality of Service of Public Transport in Indonesian Cities

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Abstract: The service of public transportation in Indonesia nowadays faces a critical condition, as the competition with motorization becomes harder. Government and operator should provide a suitable and acceptable service quality of public transport to retain the current user as well as to attract new user. To anticipate the future, the exploration regarding many related aspects with service quality is imperative. The aim of this study is to explore the causal relationships among the quality of service, satisfaction, negative experience, and future decisions. Data gathered by questionnaire distribution from two cities, i.e. Bandung and Yogyakarta, is analyzed by employing structural equations modeling (SEM). The result shows a difference level of importance of aspects of service quality among cities, which presents the unique characteristics of each city. The analyses also confirm the causal relationship between the service quality with several other related constructs, i.e. satisfaction, negative experience, and future decisions.

Key Words: public transportation, quality of service, causal relationship.

1. INTRODUCTION

In the last few decades, the ownership and usage of private vehicles rapidly increases in many big cities in Indonesia. Many negative effects in social, economic, and environment as the impact of rapid growth of motorization in Indonesian urban area become a common phenomenon. Susilo et al. (2007) shown that the growth of motorization trends will still continue. If there are no improvement actions, then a negative impact will grow and put the sustainability of the system in critical situation. One of the solutions to cope with the negative effect of rapidly growth of motorization is to increase the usage of public transportation.

As a matter of fact, transportation policy in Indonesia has not strongly taken side to support the usage of public transportation yet. It is also a common fact to see and experience a low

quality of transportation services as well as unbalance supply of services with demand. The facts reveal a challenge to the government and all related stakeholders to provide a more supporting transportation plans and policies. It is needed to retain current users and to attract new users. Thus, the process of policy and scenario development should carefully consider the need, expectation, and perception of the community. It means it is not enough to rely solely on the point of view of government or operator. It also poses a challenge to investigate the community, user and non-user, in more detail as a way to know better the need of community, as well as the decision process in selecting mode of transport. Banister (2005) said that transport's planners have to think more imaginative about the conditions in the future. It is better than stayed in nowadays tendencies, so there is a need of innovative solutions with a strong basic to face the generally changing future.

Transportation service in Indonesia at present is measured mainly by referring to technical measurement. Although, it is argued that transportation, as its nature, has a strong interaction with many facets of human aspects, e.g. psychology, economic, or culture. A deep knowledge regarding many aspects of the community is beneficial to provide a more adaptive service of public transport. Many studies show the importance of the explorations of passenger's characteristics, behaviors, expectations, needs, or perceptions, as a basic of transportations policy development (see as an example Friman and Gärling, 2001; Hensher, 2003; Winder, 2005).

In general, the study about service quality employed data from develop countries, but it is a fact that there are so many things differentiate the characteristics, behaviors, expectations, needs, and perceptions between develop and developing countries. Limited number of studies explore data from developing countries, e.g. Koushki et al. (2003), Kim et al. (2005), Moriyama et al. (2005), Senbil et al. (2005), Zhang et al. (2005), and Joewono and Kubota (2007a, b, c).

The basic motivation of this study is to corroborate the relationships between the construct of quality of service and its related constructs. The quality of service of public transport is explained by several attributes, and the aspects are possible to be measured based on different basis, i.e. based on the level of importance as well as based on the satisfaction of factual experience. It is also argued that the measurement has a relationship with other aspects of user's decision making, i.e. the related constructs like the negative experience and future decisions.

Thus, this study has an aim to explore the causal relationship regarding the service quality of public transportation in Indonesian cities. The analyses also try to compare the causal relationships of two Indonesian cities, i.e. Bandung and Yogyakarta. These cities were selected as have similarity as a city with a large number of education institutions. Data was gathered by distributing questionnaire to the user of public transport in these two cities. Structural equations modeling (SEM) is employed to test the hypotheses of several relationships, as well as to figure out the important factor of the aspect of service quality.

This article is organized in five parts. After the introduction, part 2 provides a brief literature review regarding quality of service in public transportation. A description regarding data collection is provided in section 3. Estimation results, accompanied by the significance tests, are discussed in section 4. In the last section, conclusion of the finding of this study is provided.

2. QUALITY OF SERVICE IN PUBLIC TRANSPORT

The operation of public transportation has a tight relation with the opinion and perceptions of the society. The most concerned opinion is the perception regarding the quality of service. A comprehension about service quality perception is very beneficial for the operator to provide an appropriate service. A good comprehension about quality of service can guarantee the continuity of the business of public transportation (see Hensher and Brewer, 2001, for more detail).

The quality of service is a measurement of how well the expectation of level of service has given is appropriate to the consumer (TRB, 2003). Delivering quality of service means conforming to customer expectation on a consistent basis, however, clearly the fact that expectations are confined is not always sufficient for satisfaction (TRB, 1999). The measurement of quality of service has a base on the difference (discrepancy) between expectations of service and service in a matter of fact. The perception of quality of service has been described into several types of ranking, such as, from ideal quality up to unacceptable quality. There is a point to show the quality itself, as the length of the level of satisfaction of the service (Parasuraman et al., 1995).

A service can be qualified as has a high quality when it is given a comfortable condition. In reality, quality of service has not always matched with the passenger wants. The image of quality of service could be higher or lower than the existing service based on the perception of passengers. The image regarding the quality of service of public transport has a possibility to refer to the level of importance, while the experienced quality is represented by the level of satisfaction.

Friman and Gärling (2001) stated that in public transport services, negative critical incidents may have the highest impact, and that avoiding dissatisfaction is likely to be one of the users' goals in using public transport services. If service performance is low (e.g. slow performance, long delays, no direct line), passengers are likely to be less satisfied over time. Conversely, high service performance is assumed to increase satisfaction with the service. An implication of this logic is that quality improvements should increase overall satisfaction and decrease the total frequency of negative critical incidents (Friman, 2004).

Most major conceptual and measurement models of customer satisfaction explicitly include elements related to customer value and customer loyalty (TRB, 1999). Satisfaction is a necessary condition for customer loyalty, but not sufficient alone (Brandt, 1996; TRB, 1999). Customer loyalty is not based on repeat users or transit-dependent riders, where many repeat customers may be choosing transit because of necessity, convenience, or habit (TRB, 1999). If an alternative becomes available, these customers may quickly switch to that particular service or mode. Instead, customer loyalty is reflected by a combination of attitudes and behaviors. It is usually driven by customer satisfaction, yet also involves a commitment on the part of the customer to make a sustained investment in an ongoing relationship with transit service. Attitudes and behaviors that go with customer loyalty include i) an intention to use the transit service again; ii) a willingness (often an eagerness) to recommend the transit service to friends, associates, and other persons; iii) commitment to, and even identification with, the transit service; and iv) disinterest in and/or a general resistance to alternative means of transportation, when these are available (TRB, 1999). In other words, the secure customer is one who says that s/he is very satisfied with the service, will definitely continue to use the service in the future, and would definitely recommend the service to others (Brandt, 1996).

3. DATA COLLECTION AND DESCRIPTION
3.1 Data Collection

The revealed preference (RP) is the selected type of questionnaire in this research. It has an aim to know the user characteristic during the decision making process of the traveler in making use of public transportation. This data represents the collected data based on the choices made by the traveler in actual conditions. The questionnaire was distributed in three selected big cities in Indonesia, i.e. Jakarta, Bandung, and Yogyakarta, while only the results from Bandung and Yogyakarta are reported in this article. These two cities have a similarity in term of number of school and university, while the distance from the capital city of Indonesia and cultural background are different. The distribution took time between 1st up to 16th August 2008, both in weekday and weekend. The number of answered questionnaires in each city is slightly different, where Bandung has 494 respondents and Yogyakarta 498 respondents. More detail explanation regarding data collection can be found in Santosa et al. (2008).

This questionnaire consists of five parts with 50 questions, including a provided detail explanation for each part so that respondent would fill the questionnaire in the right way. Five parts of the questionnaire are trip characteristics, general information, negative experiences, evaluations, and future conditions. The first part of the questionnaire, with seven questions, asks about trip characteristics of the user, e.g. type of public transport modes that the respondent use to make a trip, trip purpose, or frequency in using the mode. The second part, with 14 questions, explores the social demographic characteristic of the passenger, including monthly salary or stipend, monthly transportation expenses, and ownership of autos.

Part three asks the user rating regarding the frequency of negative experience. There are seven questions in this part. Respondent was given a 4-point scale rating, ranging from "never" had negative experience in making use of public transportation indicated by 1 to "very often" indicated by 4. As an example, it is provided a question to ask the respondent experience regarding the waiting time. A typical question for this part is as follows:
Question: Have you ever experienced a very long waiting time to get the mode?
Possible answer: never (1), very rare (2), sometime (3), and very often (4).

Part four is an evaluation of service quality based on the level of importance and level of satisfaction. The rating also applies a 4-point scale, ranging from "very important" indicated by 1 to "very un-important' indicated by 4. A 4-point scale is also applied for the level of satisfaction, i.e. 1 to indicate very satisfied and 4 to indicate very un-satisfied. There are fifteen questions in this part to represent fifteen aspects of the service quality. A way of asking this type of question is as follows:
Question: What do you think about the aspect of vehicle cleanliness?
Possible answer for the level of importance: very important (1), important (2),
                                    not important (3), and very un-important (4).
Possible answer for the level of satisfaction: very satisfied (1), satisfied (2),
                                    not satisfied (3), and very un-satisfied (4).

The last part of the questionnaire consists of seven future conditions of public transport. The provided questions cover several aspects that are possible to change, e.g. fare, quality, driver ability, comfort, or cleanliness. It can also be classified as a stated-preference-like question. For each condition, the users were provided by two choices, i.e. to continue or dropped off in making use of public transport. One question from this part is as follows:

Questions: What will you do when the cleanliness of the public transport is increased, while the fare is also increased?

Possible answer: continue in using public transport (1) or move to other mode of transport (2)

3.2. Descriptive Statistics of the Respondents

Descriptive statistics regarding the respondents of Bandung and Yogyakarta are provided in Table 1. The result of the questionnaire shows that female slightly dominated the user of public transportation in Bandung (53.6%), while higher percentage appears in Yogyakarta (61.6%). The users of public transportation in both cities mainly are young people, i.e. 29-years-old or younger for Bandung and Yogyakarta, where the percentage reaches more than 70 percent. The marital status of the user is dominated by single user. Student as the occupation has the highest percentage in both cities.

Based on Bandung's dataset, the respondent with monthly income less than one million IDR covers around 65% of the total respondent. On the contrary, around 58% of the respondent has a monthly income less than a half million IDR. In the time of this study, one USD was equal with around 9300 IDR. Study and work are the main trip purposes in both cities. Paratransit (minivan) is the main mode of transport in Bandung (around 90%). Bus (small and large) and paratransit are the main mode in Yogyakarta with the percentage as much as 54.4% and 36.5%, respectively. Although the lack of automobile has the highest percentage as the main reason for making use of public transport, but similar percentages of the benefits of making use of public transport appear in both cities.

4. DATA ANALYSIS
4.1 Result of Structural Equations Modeling

Structural equations modeling (SEM) is employed to analyze data by applying AMOS software (Arbuckle and Wothke, 1999; Arbuckle, 2003). This model analyzes some hypotheses, i.e. the relation between the construct of the level of importance and the level of satisfaction of service quality, the relation between the construct of negative experience and the level of importance, the relation between the construct of negative experience and the level of satisfaction, the relation between the construct of negative experience and future condition, and the relation between the construct of the level of importance and future condition. Besides analyzing those hypotheses, the model also performs factor analysis to indentify the level of prioritization of each aspect for several constructs, i.e. level of importance, level of satisfaction, negative experience, and future condition. The construct of the level of satisfaction and level of importance are explained by fifteen factors, while the construct of negative experience and future condition are formed by seven factors.

The causal relationship among construct as well as the attributes of each construct is presented in Figure 1. The model is applied for the analyses of each city. The loading factors and the regression weights are presented by specific notation. Explanation of each notation follows the standard explanation of SEM model analysis (see for an example Raykov and Marcoulides, 2000; Klem, 2000; Kline, 2005; Hair et al., 2006). The construct or latent variables are usually labeled as an ellipse, while the attributes or observed variables are labeled as a square. δ is the parameter which is describing a measurement error in observed variable. This parameter is correlating to instrument reliability. λ is defined as the parameter describing structural coefficient which are connecting manifest variable with latent variable. This parameter is correlating with construct validity of latent variable. ξ is the parameter

describing measurement error on latent variable (Sugiyono, 2008)

Table 1 General characteristics of the respondent

Characteristics		Proportion	
		Bandung (n=494)	Yogyakarta (n=498)
1. Sex	Female	53.6%	61.6%
	Male	46.2%	38.4%
2. Age	Less than 17-years-old	20.2%	30.5%
	18-29-years-old	59.5%	48.8%
	30-39-years-old	8.7%	9.0%
	40-49 -years-old	5.5%	6.0%
	50-years-olds or more	6.1%	5.6%
3. Marital status	Single	78.7%	78.1%
	Married	20.9%	21.9%
4. Occupation	Student	66.6%	68.5%
	Private officer	16.6%	12.7%
	Public officer	3.2%	6.4%
	Entrepreneur	5.7%	9.0%
	Housewife	6.9%	2.6%
	Retired	1.0%	0.8%
5. Educations	Junior High School or less	18.2%	32.7%
	Senior High School	58.6%	47.0%
	Diploma	9.3%	5.2%
	Bachelor's degree or higher	13.8%	15.1%
6. Income (IDR)	< 500.000	27.1%	58.2%
	500.000-1 million	37.9%	24.3%
	1-2.5 million	27.1%	11.6%
	2.5-5 million	6.9%	4.8%
	5 million or more	1.0%	1.0%
7. Cars ownership	Did not own any car	41.7%	77.7%
	A unit	33.4%	18.1%
	Two units	17.8%	3.8%
	Three units or more	7.1%	0.4%
8. Motorcycles ownership	Did not own any m-cycle	30.2%	21.7%
	A unit	41.7%	36.9%
	Two units	18.6%	33.7%
	Three units or more	9.5%	7.6%
9. Trip purpose	Work	20.9%	23.5%
	Study	53.4%	55.2%
	Shopping	11.9%	5.6%
	Business	1.8%	0.6%
	Social activity	2.0%	2.0%
	Vacations	4.5%	7.2%
	Others	5.5%	5.8%
10. Reason for making use of public transport	Did not own any car in their family	40.3%	42.2%
	Convenience	7.3%	6.0%
	Cheaper fare	13.0%	14.7%
	Easier in get car	10.7%	6.2%
	More practical	16.6%	15.9%
	Faster	1.0%	2.0%
	Other	11.0%	13.1%

δ_1

The vehicle's cleanliness

δ_2

The s cleanliness

δ_3

Physical conditions of the vehicles

δ_4

Physical conditions of the shelter

δ_5

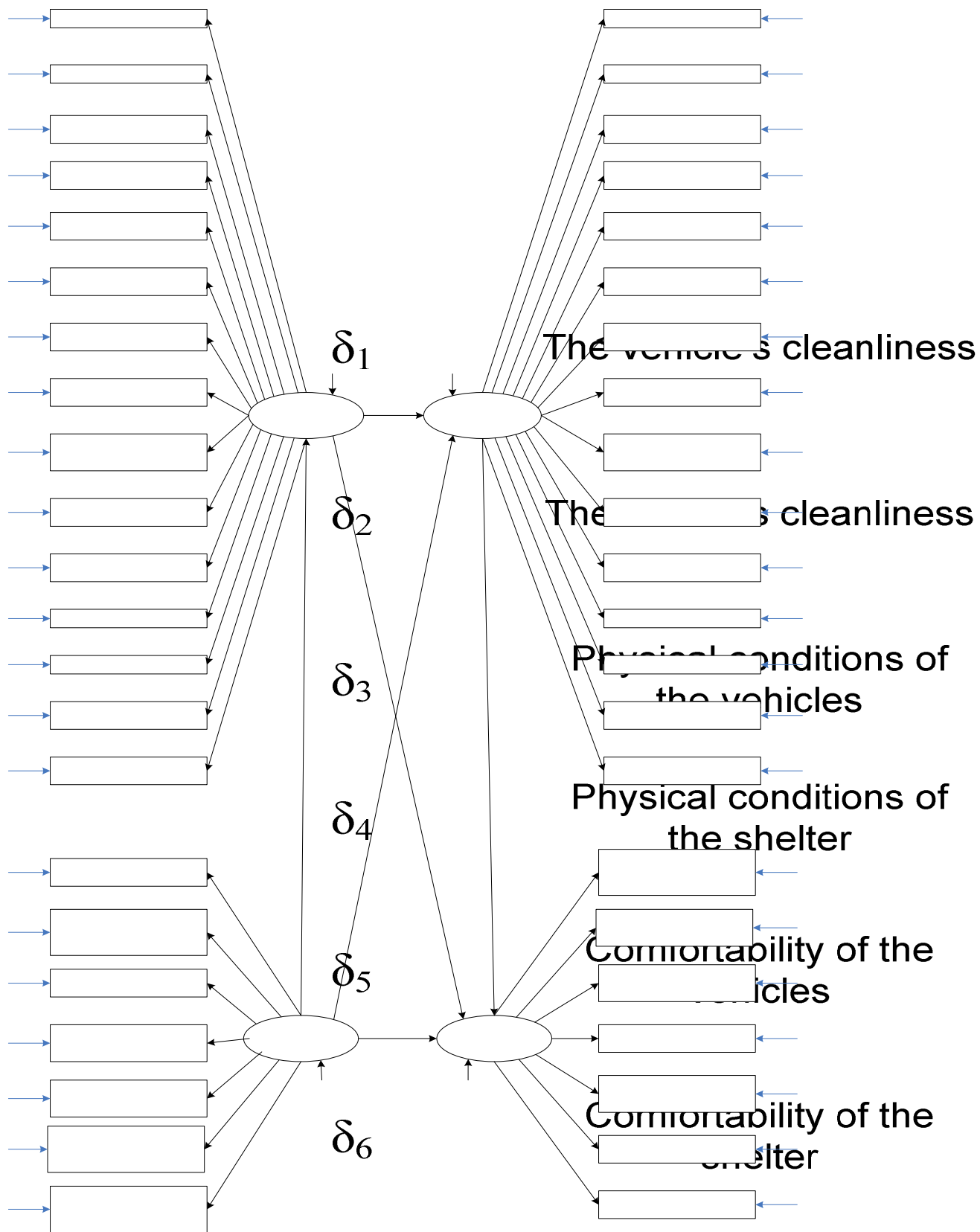Comfortability of the vehicles

δ_6

Comfortability of the shelter

Figure 1 Structural model of the relationships between importance, satisfactions, feature experience, and future's conditions

δ_7

route's information access

The complete measures of the goodness of fit of this model appear in Table 2. The values of

δ_8

cost's information access

χ^2 for Bandung and Yogyakarta are 2617.5 and 2379.34, with a degree of freedom as much as 896 and 896. The p-value associated with this result is small, which indicates a significant Type I error rate, even at 0.01. Kline (2005) stated that the hypothesis tested by χ^2 is likely to be implausible, that is to say, it may be unrealistic to expect a model to attain a perfect population fit. In addition, the model χ^2 is affected by sample size, specifically if the sample size is large. The values of normed chi-square (NC) from the model of Bandung and Yogyakarta are 2.921 and 2.656, respectively. Both models seem significant as it have a value of NC lower than five.

The values of Root-mean-square (RMR) of Bandung and Yogyakarta are 0.025 and 0.062, which are near to zero as a perfect fit, while the values of RMSEA are 0.023 and 0.058, respectively. All values are less than 0.08, which explain a good result. The value of GFI, Bentler-Bonnet normed fit index (NFI), incremental fit index (IFI), and comparative fit index (CFI) is close to one as a fit model. Based on the measures, it can be concluded that the model is fit.

Table 2 Goodness of fit for each models estimation

Parameters	Goodness of fit	
	Bandung	Yogyakarta
χ^2	2622.628	2434.518
d.f.	896	896
NC (χ^2/df)	2.927	2.717
RMR	0.025	0.023
RMSEA	0.063	0.059
GFI	0.788	0.806
AGFI	0.766	0.786
NFI	0.646	0.732
IFI	0.735	0.812
CFI	0.733	0.811

4.2 Factor Analysis

This study employed confirmatory factor analysis (CFA) to load the attributes for each factor of public transport's service quality. The CFA this study used assumed a reflective measurement theory based on the idea that latent constructs cause the measured variables, and that this error results in an inability to explain these measures fully (Hair et al. 2006). The researchers did not reduced the initial complete factors and attributes, as all attributes have quite high standardized loadings or high standardized residuals, and all attributes are statistically significant.

The results of factor analysis are presented in Table 3 up to Table 6. Table 3 shows the attributes and its loading factor for the construct of level of importance for both cities. The highest loading value of the attribute can be interpreted as the most important aspect by the users. The attribute of physical conditions of the shelter has the highest loading in both cities. It can be interpreted as this attribute has been rated as the most important aspect of service quality. On the other hand, it is surprising to notice the result that the attribute of safety and

security in the vehicle has the lowest loading. This result appears in both cities. It means this attributes has been rated as the least importance.

Table 3 Attributes and loading factors for the construct of the level of importance

Attributes	Loading Factor	
	Bandung	Yogyakarta
The cleanliness of the vehicle (λ_1)	0.997	0.995
The cleanliness of the shelter (λ_2)	1.050	1.224
Physical conditions of the vehicles (λ_3)	1.003	1.221
Physical conditions of the shelter (λ_4)	1.200	1.430
Comfortability of the vehicles (λ_5)	0.913	1.077
Comfortability of the shelter (λ_6)	1.157	1.305
Access to the route's information (λ_7)	1.061	1.086
Access to the cost's information (λ_8)	1.125	1.121
Security and safety in the vehicle (λ_9)	0.573	0.629
Security in the shelter (λ_{10})	0.838	1.027
Access to get into the car of public transportation (λ_{11})	1.077	1.143
Driving ability (λ_{12})	0.737	0.827
Schedule adherence (λ_{13})	0.838	0.922
The politeness and attitude of the crew (λ_{14})	1.049	1.143
Access to find modes (λ_{15})	1.000	1.000

Table 4 presents the loading factor for the attributes of the construct of level of satisfaction based on the response in Bandung and Yogyakarta. People in Bandung rate the security in the shelter as the attribute that provides the highest satisfaction, while comfortability of the vehicle is rated as the attribute that provides the highest satisfaction in Yogyakarta. The access to find the mode has the lowest loading in Bandung, while access to the information of cost has the lowest loading in Yogyakarta. It means these attributes provide the lowest satisfaction to the user.

Table 5 shows the loading for each attribute of the construct of negative experience. The problem with fare has the highest loading based on Bandung's dataset, while the problem with delay has the highest loading for Yogyakarta's dataset. It means those experiences have the largest contribution to the negative experience of the users.

Relation between the attribute of future condition and its loading appears in Table 6. This part of analysis reveals a different preferred future scenario. Respondent in Bandung has the highest preference on improving the ability of the drivers, although there is a fare increment. The improvement in comfort with fare increment is preferred the most by the respondent in Yogyakarta. It reveals a fact regarding the existence of different expectation by the user in different city.

Table 4 Attributes and loading factors for the construct of the level of satisfaction

Attributes	Loading factor	
	Bandung	Yogyakarta
The cleanliness of the vehicle (λ_{16})	1.000	1.000
The cleanliness of the shelter (λ_{17})	1.200	0.885
Physical conditions of the vehicles (λ_{18})	1.238	1.034
Physical conditions of the shelter (λ_{19})	1.228	0.878
Comfortability of the vehicles (λ_{20})	1.341	1.070
Comfortability of the shelter (λ_{21})	1.333	0.896
Access to the route's information (λ_{22})	0.807	0.640
Access to the cost's information (λ_{23})	1.025	0.630
Security and safety in the vehicle (λ_{24})	1.416	0.974
Security in the shelter (λ_{25})	1.450	0.803
Access to get into the car of public transportation (λ_{26})	0.784	0.622
Driving ability (λ_{27})	1.177	0.825
Schedule adherence (λ_{28})	1.435	0.833
The politeness and attitude of the crew (λ_{29})	1.254	0.826
Access to find modes(λ_{30})	0.764	0.631

Table 5 Attributes and loading factors for the construct of negative experience

Attributes	Loading factor	
	Bandung	Yogyakarta
Waiting too long to find public transportation (λ_{31})	1.459	1.240
Experience delay to reach destination (λ_{32})	1.902	1.284
Experience an accident (λ_{33})	0.455	0.219
Losing something while using public transportation (λ_{34})	0.387	0.522
Had some problem with the fare (λ_{35})	2.086	1.117
Less information about the routes, schedules, and fare (λ_{36})	1.804	1.182
Problem with the changing routes caused by the driver (λ_{37})	1.000	1.000

4.3 Causal Relationship

In this part, the result of model estimation regarding the testing hypotheses of causal relationships is presented. Referring to the model as appears in Figure 1, the regression estimates of the relation can be gathered as appears in Table 7. The significance of each relationship is explained by *p*-value.

All relations, which incorporate the construct of the level of importance, level of satisfaction, and negative experiences, are significant for both cities. On the other hand, the relation between the negative experience and future decision is significant only for Bandung. All relations with the construct of future decision are not significant, based on the dataset of Yogyakarta. It can be summarized that the model is able to confirm only some causal relationships regarding the service quality.

Table 6 Attributes and loading factors for the construct of the future decision

Attributes	Loading Factor	
	Bandung	Yogyakarta
Constant quality of service and constant tariff (λ_{38})	1.000	1.000
Upgrading the quality of cleanliness, increasing the fare (λ_{39})	2.779	6.599
Upgrading the driver's ability, increasing the fare (λ_{40})	3.405	6.548
Upgrading the fleet, increasing the fare (λ_{41})	3.059	5.750
Upgrading the quality of safety and security, increasing the fare (λ_{42})	2.937	5.285
Upgrading comfortability, increasing the fare (λ_{43})	2.810	6.822
Decreasing fare, decreasing comfortability (λ_{44})	0.889	-0.174

Table 7 Causal relationships among constructs

Parameters	Bandung			Yogyakarta		
	Regression value	SE	p-value	Regression value	SE	p-value
Importance ← Negative experience	-0.275	0.083	0.001	-0.233	0.056	0.000
Satisfaction ← Importance	-0.232	0.061	0.000	-0.359	0.087	0.000
Satisfaction ← Negative experience	0.608	0.117	0.000	0.944	0.117	0.000
The condition in the future ← Negative experience	0.079	0.033	0.017	0.014	0.012	0.229
The condition in the future ← Satisfaction	0.003	0.016	0.830	-0.010	0.007	0.155
The condition in the future ← Importance	0.009	0.017	0.589	0.006	0.008	0.411
Variance						
Importance	0.081			0.091		
Satisfaction	0.084			0.199		
Negative experience	0.053			0.115		
The Condition in the future	0.006			0.001		

4.4 Discussion

The growth of motorization in Indonesia creates hard time for public transportation. Government and operators need to anticipate this competition by exploring all facet of service quality. This study tries to corroborate the causal relationships between the service quality of public transport with other related aspects of the service of public transport. The aspects are the negative experience and future decision, while the service quality is explained by two types of rating, i.e. the level of satisfaction and level of importance. Moreover, this study tries to elaborate the significance attributes of each construct. The construct represents the aspects of the service implementation of public transport.

This study has successfully found the important attributes of each aspect, which represents the level of priority of the attributes. The loading of each factor can also be interpreted as the level of priority for the improvement to be made in the future. It is also found the difference of the level of priority between two Indonesian cities, i.e. Bandung and Yogyakarta. It means the approach to improve the service quality should be made differently by considering the specific attribute of each city. It is interesting to notice that people percepts differently the

attributes of service quality, i.e. based on the level of importance and level of satisfaction. The attributes rated as important, in reality, has not always experienced as satisfied. It explains the existence of gap between the expectation and the reality. The gap exists in both cities.

The other construct is the negative experience. The experience in making use of public transport in Bandung and Yogyakarta has different level or frequency. The problem of fare and delay has been experienced as the most frequent in different city. The finding also shows the difference condition of the operation of public transport in Indonesian cities. Moreover, the construct of future decision has also expressed by several attributes. The attribute with the highest loading in Bandung has different loading in Yogyakarta. It reveals a fact regarding the existence of different expectation regarding future condition of public transport in different city.

The last analyses completed in this study are testing hypotheses. There are several hypotheses to explain the causal relationship among construct. The model is able to confirm several relationships, while some relationships have no enough support from the data. It can be noticed the existence of similar relationship in both cities. It is understandable as the model tries to test the relationship which is familiar.

Furthermore, contribution of this study seems to be easily noticed. As there are very rare studies regarding the user preferences and experiences in making use of public transport in developing countries, this study can be judged as an initial study in this field. This study is a continuation of previous study by Joewono and Kubota (2007a, b, c). This study contributes significantly in finding the specific characteristics of the service of public transport in some Indonesian cities. This study provides useful information to enrich the knowledge regarding the public transport in Indonesia, as well as a basic for building a more suitable policy. As a matter of fact, it is believed that there are significant different between develop and developing countries. Thus, it is important to understand the service and the market as well, to retain the existing user and to attract new user.

Policy implication in managing the operation and planning a policy for the provision of public transport is argued as one way to show the usefulness of this research. Based on the result of factor analysis, the manager or the government will be able to arrange a list of priority in improving the service. As resources are very limited in developing cities, thus finding a list of priority is important in allocating the resources. This list of priority will also useful in developing a more suitable plan for each city. Current practices are usually a copy policy from developed cities, or other cities. This study shows that makes a copy of policy does not have an enough support, as each city has different prioritized aspect or need. Some aspects that rated as important in one city do not necessarily have a same rating in other cities. This study suggests a tailor-made policy for each city, which is based on well-understanding regarding the specific need and preferences of each of these two cities.

Moreover, the knowledge regarding the causal relationships is useful for the government and the manager in planning a policy. The relation between the ratings of the level of satisfaction of the existing service with the future decision provides information regarding the needed improvement in specific aspect of the service to retain the customers. Based on this study, the government and the manager of the operator of public transport will understand the future direction of the user preference. It also provides knowledge to understand the most sensitive aspect when one policy is applied. In developing countries, like Indonesia, this knowledge is also useful as the level of welfare and cultural situation in each city in Indonesia is varied.

The change of fare is believed as sensitive for the user in Indonesia, while each aspect of service quality does not have the same influence in each city in Indonesia.

5. CONCLUSIONS

This article refers to the distributed questionnaires to the user of public transportation in two cities in Indonesia, as a representation of typical Indonesian urban area, i.e. Bandung and Yogyakarta. The motivation to conduct this study is the existence of several questions regarding the causal relationships of several aspects, such as level of importance and level of satisfaction regarding the service quality, as well as the negative experience and the expectation of the conditions in the future. Moreover, it is questioned whether there is different of perceived service quality and future direction between one city with the other.

The analysis of this research is completed by developing SEM. The model is able to elaborate the relation between each construct, including finding the level of priority of each attributes of each related construct in the operation of public transportation.

The model can be judged as fit, which means the model is confirmed by the data. It reveals a fact regarding the existence of gap between expectation and experience. The gap implies the need of improvement for the attributes which have been experienced differently.

The study also reveals the difference characteristics of the operation of public transportation between these two cities. The expected operation of public transport in the future is also different, when dataset from both cities are compared. It explains the need to provide a specific approach for each city. A matched link between the expectation and the approach will increase the acceptance by the user as well as community.

This study is able to confirm several relations among constructs. It also strengthens the applicability of this result of study. The government, as well as the operator, should provide more attention to this result of study, as a way to incorporate the specific characteristics of each city regarding the operation of public transport. The study provides beneficial knowledge to maintain the number of user, as well as to increase the number of passenger in the future.

Lastly, some policy implications based on the findings of this study are as follows. Specific policy in planning an improvement of the service quality is suggested, where the planning should incorporate the suggested priority of each aspect. Copying a policy from one city to another, or generalize the policy to every city, is not recommended. A needed improvement in one city does not necessarily accepted as a need in another city, where the finding from Bandung and Yogyakarta shows this finding. Furthermore, this study also provides a knowledge regarding the future direction of the user in making use of public transport. It shows the preferred situation, which means it reflects the requirements by the user to make the user stay with the service.

Thus, further study is an imperative to continue this research. It is beneficial to explore in more detail the specific group of user, e.g. women, children, senior citizen, or user with special needs. This kind of exploration will enrich the knowledge regarding the user, which finally useful in developing a more suitable service.

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