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1. Introduction

In Indonesia, public private partnership (PPP) offers an important way to develop infrastructure and public services such as transport. PPP arrangements come in many forms and are still an evolving concept that must be adapted to the individual needs and characteristics of each project and project partners¹⁾.

In Yogyakarta City, the DIY Provincial Government (DIY) developed the Trans Jogja bus system (TJ) using PPP. Its aims are to provide an affordable and convenient urban public transportation system, solve congestion problems and help private firms profit from public bus provision. **Figure 1** shows the TJ service area which covers all areas of Yogyakarta City and some areas of Sleman Regency and Bantul Regency. **Table 1** shows the chronological process of TJ which started on February 2008; 4 routes are in operation with 74 buses. Each bus has 22 seats and 19 standing passenger spaces.

This study aims to analyze the PPP contract scheme of TJ; the difference among project operation costs, target revenues and actual revenues; and users' perceptions of performance level.

2. Questionnaire Survey and Data

The data used in this research were obtained from interviews, document reviews and field surveys. The information on TJ was obtained through interviews with key persons who worked for its development: public officers, private sector staff, NGO staff and academicians. TJ performance was analyzed based on the Service Quality Dimension which consists of five dimensions of measurement: tangibles, reliability, responsiveness, assurance and empathy²). The questionnaire was administered to 110 passengers³ as TJ users to conduct an Importance Performance Analysis (IPA) to measure the relationship between passenger perceptions and priorities of improving the quality of the product/services. The IPA method combines the measurement factors of importance and satisfaction levels in two-dimensional graphs.

3. Results

3.1. PPP contract of TJ

Figure 2 shows the PPP contract scheme of TJ. DIY wanted existing bus companies to agree to establish a consortium company. As a result, PT. Jogja Tugu Trans (PT. JTT), a consortium company, was established through the cooperation of five bus companies that were equity investors. The first contract of three TJ routes, shown in the fifth row in **Table 1** was contracted without a bidding process. In order to protect the interests of local bus companies, DIY added the special requirement that the consortium must replace two buses on the same route as one TJ bus. This requirement, called "2 for 1", was one of the DIY plans to reduce the number of public buses in Yogyakarta, eliminating 54 buses that operated along the same three routes.

The contract refers to the technical standard issued by the Ministry of Transportation. The basic scheme of TJ is that PT. JTT receives payment from DIY for bus mileage according to fare per mileage. The contract period is only seven years which was stipulated based on the analysis of buses' technical ages. DIY collects all revenue from users/passengers and has to evaluate the implementation of TJ every year in order to analyze all the operational cost components. DIY established the Supervisor Board to monitor the contract implementation of both parties. As an official/public institution, TJ's Government Technical Services Unit (UPT TJ) is responsible for the management of TJ, including daily monitoring and reporting activities.



Figure 1. Service area of Trans Jogja

Table 1. Chronology and operation

Year	Stages
2004	Preliminary plan of urban bus transport system in Yogyakarta
2005	Detail Feasibility Study of bus rapid transit in Yogyakarta
2007	Government establish the public institutional, UPTD Trans Jogja, to prepare the operation of bus rapid transit.
August 2007	Contract signatory between PT. JTT and DIY Provincial Government.
February 2008	Fleet started to operate in 3 routes, 54 buses, 76 bus stop
2009	Additional 34 unit of bus stop and 2 parking area
2010	Additional 1 unit of mobile bus stop and "bike rack" on 8 unit bus
	The opening of route no. 4 and the trial operation of 20 additional buses



Figure 2. PPP scheme of Trans Jogja

DIY uses the existing road lane and invests in part of the fleet, bus stop units and other traffic facilities. Technically, DIY shares 40 buses of the 74 fleets with the Yogyakarta City Local Government. By the end of 2010, DIY had built 78 units; the remaining 34 units were built by Yogyakarta City Local Government. DIY is responsible for bus stop operations and maintenance through UPT TJ. PT. JTT owns 34 buses and is responsible for all the operational and maintenance facilities stipulated in the contract.

3.2. Operational costs, revenues and passengers

DIY has to evaluate and stipulate the payment fare, targeted revenues and ticket fares every year. **Figure 3** shows TJ's annual operational costs and revenues. Annual revenue grew by 14.04% from 2009 to 2010, although a gap exists between the operational costs and actual revenues. In 2010, DIY had to pay 33.39% of the operational costs. **Figure 4** shows that the number of passengers is increasing every year. The additional facilities shown in **Table 1** (e.g., bus stop, parking lot, and number of fleet) might lead increased passengers, but data were not adequate data for concluding which factors caused the increased in passengers. At the end of 2010, the load factor of TJ is only $40\%^{4}$. This must reach 54% as the minimum percentage of load factor for operational cost recovery under existing ticket fare.

The operational costs in **Figure 3** do not include the cost to employ the government staffs in UPT TJ and the field staff to support the public bus transit system, such as ticketing staff and night watchmen. UPT TJ employs at least 750 persons for the field staff at bus stops. Their salaries and the bus stop maintenance costs are charged to UPT TJ under the annual budget of the Transportation, Communication and Information Department.

3.3. Importance Performance Analysis (IPA)

The performance level of the TJ transport service was analyzed using 106 completed questionnaires. The questionnaires used five-point Likert scales. **Table 2** shows the analysis results after weighting. **Figure 5** shows two graphs of IPA results using the mean value of the Likert scales (X = 2.5, Y = 2.5) and using the mean value of the survey result (X = 3.92, Y = 4.32) as a graph axis. Four quadrants (I, II, III, and IV) represent the measuring level of performance and importance; the quadrant I demonstates the best result (high importance, low performance). The numbered dots represent five dimensions of measurement: 1: Tangibles, 2: Reliability, 3: Responsiveness, 4: Assurance and 5: Empathy.

The upper graph shows that all dimensions are located in quadrant I (high importance, high performance), indicating that all respondents rated the TJ service performance as good. The second lower graph shows a different result: "1: Tangibles" and "2: Reliability" are located in quadrant III (low importance, low performance), whereas "4: Assurance" and "5: Empathy" are in quadrant I (high importance, high performance), and "3: Responsiveness" is in quadrant II (high importance, low performance).

4. Summary

- 1) The TJ contract scheme is a modified PPP scheme to improve the bus transportation system in Yogyakarta urban area, including a better quality of public bus transport and the sustainability of local bus companies.
- 2) The comparison of operational costs and revenues indicates that TJ's performance does not meet DIY's expectations. In 2010, revenues account for 66.6% of DIY's total payments to PT. JTT.
- 3) The performance results of the TJ transport service analyzed using the IPA method with 106 respondents (users/passengers) indicate that the "Reliability" dimension is the lowest level among the other service quality dimensions.



- 1) British Columbia Government (1999). Public-Private Partnership A guide for Local Government, British Columbia: Canadian Cataloguing in Publication Data.
- Tate, M. (2010). Reflection on perceived online service quality: Structure, antecedents, ontology, theory and measurement. Thesis, Victoria University of Wellington.
- 3) UNS web site database (2010). Teknik Penarikan Sampel, < <u>http://www.uns.ac.id/data/0019a.pdf</u>> (Accessed on 8 September 2010).
- Cities Development Initiative for Asia (2011). RETA 7506: Final Report of "Pre-Feasibility Study in Urban Transport, Yogyakarta, Indonesia". Philippines: Global Works.



Figure 3. Operational cost and revenue



Table 2. Mean of service quality dimension

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No.	Dimensions	Importance	Performance	
1	Tangibles	4.01	3.49	
2	Reliability	3.87	3.38	
3	Responsiveness	4.47	3.92	
4	Assurance	4.56	4.67	
5	Empathy	4.69	4.15	
	Mean	4.32	3.92	

