

6_SAFETY INDICATOR

by Amelia Makmur

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THE CORRELATION OF SAFETY INDICATORS OF TOLL ROAD IN INDONESIA

Amelia Makmur¹, Wimpy Santosa², Ranto Rajagukguk³.

¹Lecturer of Civil Engineering, Krida Wacana Christian University, Jl. Tanjung Duren Raya no. 4, Jakarta Barat, Indonesia, amelia@ukrida.ac.id

²Profesor of Civil Engineering, Parahyangan Catholic University, Jl. Ciumbuleuit No. 94, Bandung, Indonesia, wimpy.santosa@yahoo.com

³Head of Sub Division of Supervision, Indonesian Toll Road Regulatory Agency, Ministry of Public Works and Public Housing, Jl. Pattimura No. 20, Jakarta Selatan, Indonesia, ant_bimtek@yahoo.com

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ABSTRACT:

The Minimum Service Standard for Toll Roads is a requirement that should be completed by all toll roads in Indonesia. However, field monitoring still shows that some indicators in the Minimum Service Standard for are not met. The indicators which are not completed are related to safety, such as the availability and well function of road signs, road markings, guide posts, KM signs, road lightings, and right of way fence. In this study the monitoring data, from surveys conducted in 2012, 2013 and 2014, were explored and statistically examined. The results show that there is a strong positive correlation for the availability and well function of road signs and road markings for both urban and inter-city toll roads, that the accomplishment of road signs tend to be followed by the road markings. It is also found a strong positive correlation for the availability and well function of right of way fence and guide posts for inter-city toll roads, that the accomplishment of the indicators are interacted. The strongest correlation among the indicators is the correlation between road signs and road markings for inter-city toll road. On the other hands the indicators of KM Sign with road marking and road lighting have a negative and weak correlation with the provision of road signs and road markings for both urban and inter-city toll road. The results show that good provision of one or more indicators do not necessarily mean that other indicators are well provided.

Key Words: Minimum Services Standard, Safety Substance, indicators, toll roads

INTRODUCTION

The road infrastructure in Indonesia play a strategic role in supporting all the activities of the economic, social, cultural, and defense and security. Based on the report from Indonesian Monitoring and Evaluation of National Transport Policy team, 95% of freight logistic and 90% of passenger transportation using road as an infrastructure facility (Direktorat Jenderal Otonomi Daerah 2011). This condition has given the implications for the Indonesian Government to provide the best quality of road infrastructure for the community.

Toll road is the one of the alternative which provide services are more better than other roads, including the performance, accessibility and facility. One of the government's policy in realizing the implementation of the quality road infrastructure, especially for Toll Road is stated the Toll Road Minimum Service Standards (Toll Road MSS) as a reference for the fulfillment services for toll roads in Indonesia. Minimum Service Standards, or abbreviated in Indonesia to SPM Jalan Tol, issued through the Minister of Public Works 392/PRT/M/2005 on Minimum Service Standards Toll Road. Indonesian Toll Road Regulatory Agency, which abbreviated in Indonesia to BPJT (Badan Pengatur Jalan Tol) as a part of the Ministry of Public Work and Public Housing, arranges a regular monitoring to assess the fulfillment of indicators performance the Toll Road MSS by the Toll Road Operator (in Indonesian language is Badan Usaha Jalan Tol, BUJT).

Regarding to performance evaluation issue, the results of the field survey of monitoring and evaluation SPM Jalan Tol in 2012, in 2013 and in 2014, show that more of the indicators are still not met, including the Safety Service Substance. The indicators which are not always be met on this Safety Service Substance such as the availability and well function of road signs, road markings, guide posts, KM signs, road lightings, and right of way fence. In accordance with that facts are necessary to review the correlation between these accomplishment indicators of Toll Road Minimum Service Standards. Besides, they could be calculated to know the relevance among these accomplishment indicators of the Minimum Service Standards for Safety Service Substance. So it can be known the dependency between the accomplishment indicators and their correlation.

The purpose of this study was to determine the correlation between the indicators in the Safety Services Substance of the Toll Road Minimum Service Standards. The relevancy and dependency among them are needed and knowing the correlation between the indicators that contribute to the non-fulfillment of Substance Safety Services are also needed too that will be informed how to maintain the performance of toll road in future.

The approach taken is to collect secondary data from the accomplishment of indicators of Safety Services Substance for 27 toll roads in Indonesia, including urban and inter-city toll road. The data came from the routine field survey of Monitoring and Evaluation conducted by BPJT (Indonesian Toll Road Regulatory Agency) in 2012, 2013 and 2014. All indicators fulfilled are no longer discussed in this study, such as the indicator of the handling of accident and the indicator of security and law enforcement. Using statistical method of correlation, it will be shown the correlation between all indicators of the Safety Services Substance for Toll Road Minimum Service Standards in Indonesia from 2012 until 2014.

MINIMUM SERVICES STANDARDS OF TOLL ROADS

The Minimum Service Standards for toll roads in Indonesia refers to the Regulation of the Minister of Public Works No. 392/PRT/M/2005 on Minimum Service Standards Toll Road. Minimum Service Standards has 21 (twenty-one) indicator is incorporated in 6 (six) service substances. The substance of these services are: toll road conditions, the average of traffic speeds, accessibility, mobility, safety, rescue unit or the rescue and relief services. The substance of services that will be addressed

in this study is the Safety Services Substance. Safety Services Substance has the goal of safety and smoothness for toll road users. This substance consists of several indicators of traffic regulation means that the expected accomplishments all met or 100% of the benchmarks specified. The indicators of Service Safety Substance is an indicator of vehicle traffic control, namely: road signs, road markings, guide post/reflectors, KM Sign, road lighting, right of way fence, the handling of accidents, as well as security and law enforcement. The detailed of These Safety Service Substance will be shown on Table 1.

Table 1. The Safety Services Substance of Minimum Service Standard of Indonesian Toll Road

| Traffic Facility Indicator | Scope of Assesment | Minimum Requirements of Minimum Service Standard of Indonesian Toll Road |
|-----------------------------------|---|---|
| a. Traffic Sign | Complete, availability, and well function (clear instruction and guiding) | 100% |
| b. Road Marking | Well function and availability | 100% & reflector \geq 80% |
| c. Guide post | Well function and availability | 100% & reflector \geq 80% |
| d. KM Sign | Well function and availability | 100% |
| e. Road Lighting | Well function and availability | 100% |
| f. Right of way fence | Well function and availability | 100% |
| g. The Handling of accidents | a. Accident victims | Free evacuation |
| | b. Vehicles accident | Free for towing |
| h. Security and Law enforcement | Toll road | Police patroly for 24 hours |

ACCOMPLISHMENT INDICATORS OF SAFETY SERVICES STANDARD

The data, taken in 2012, 2013, and 2014, show that some of indicators of Safety Services Standard are not fulfilled as a minimum requirement of the Minimum Services Standard by some of toll road, both for urban and inter-city toll road. On the other hand, the indicators of the handling accidents and indicators of security and law enforcement are always be fulfilled.

Indonesia have 14 inter-city toll roads and 13 urban toll roads, which have been evaluated their performance indicators of Minimum Standard Services. The accomplishment result of Safety Services Substance are shown in Table 2 for inter-city toll road and Table 3 for urban toll road.

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