



## INTISARI

Pekerjaan pemeliharaan jalan dalam skema *long segment* menuntut pemenuhan indikator kinerja jalan (IKJ) yang bertujuan untuk mendapatkan umur perkerasan jalan yang direncanakan. Penyedia jasa yang gagal mencapai IKJ sesuai waktu tanggap perbaikan dikenakan sanksi finansial. Penelitian ini bertujuan menganalisis pengaruh komponen kinerja jalan dan indikator kinerja jalan untuk menentukan rumus sanksi keterlambatan pemenuhan tingkat layanan jalan (SKPTLJ).

Pengumpulan data dilakukan melalui: (a) data sekunder: data kondisi, LHR, dan peta ruas jalan nasional, data penerapan SKPTLJ, data laporan/aduan masyarakat terkait kerusakan jalan di Balai Besar Pelaksanaan Jalan Nasional Jawa Tengah-Daerah Istimewa Yogyakarta; (b) data primer dilakukan melalui pengisian kuesioner yang memuat indikator pada setiap faktor yang berkontribusi terhadap SKPTLJ serta waktu tanggap pemenuhan IKJ. Metode analisis data menggunakan *Structural Equation Modeling* (SEM) dengan CFA (*Confirmatory Factor Analysis*) dan *Full Model SEM*.

Hasil analisis *full model SEM* mengindikasikan komponen kinerja jalan berkontribusi signifikan terhadap SKPTLJ sebesar 77,0%. Perkerasan jalan, bahu jalan, drainase, perlengkapan jalan, bangunan pelengkap, dan *clearance* berkontribusi signifikan terhadap komponen kinerja jalan secara berturut-turut sebesar 88,0%; 80,9%; 81,4%; 51,3%; 78,1%; dan 79,1%. Rumus SKPTLJ hasil analisis yaitu  $S = \text{Koef} \times T \times F_v \times N \times F_A \times J$  dengan S: SKPTLJ. Nilai koefisien (Koef) tiap komponen jalan: perkerasan jalan: 0,027; bahu jalan: 0,020; drainase: 0,011; perlengkapan jalan: 0,001; bangunan pelengkap: 0,006; *clearance*: 0,017. Faktor volume lalu lintas ( $F_v$ ) pada Jalan Arteri Primer: 1,0 dan Jalan Kolektor Primer-1: 0,9. Nilai pengali denda (N) adalah Harga Perkiraan Sendiri lingkup pemeliharaan rutin jalan (rupiah). Faktor aduan masyarakat ( $F_A$ ) dengan kriteria tanpa aduan: 1,0; aduan terverifikasi: 1,5; dan terdapat kecelakaan: 2,0. J adalah  $\frac{P_{jc}}{P_{jl}}$  = panjang jalan yang tidak memenuhi indikator kinerja dengan panjang segmen minimal 100 m ( $P_{jc}$ ) dibagi dengan panjang jalan dalam kontrak berdasarkan lingkup pekerjaan ( $P_{jl}$ ). Rumus hasil penelitian ini memberikan nilai sanksi keterlambatan yang signifikan bagi kontraktor untuk mematuhi serta dapat meningkatkan kinerja jalan nasional melalui paket *long segment*.

Kata kunci: *long segment*, preservasi jalan, indikator kinerja jalan, sanksi keterlambatan pemenuhan tingkat layanan jalan.



## ABSTRACT

*Road maintenance work in the long segment scheme requires the fulfillment of road performance indicators (RPI) which aims to obtain the planned pavement life. Financial penalties may be imposed on contractors who don't achieve road performance indicators based on repair response time. This study aims to analyze the effect of road performance components and road performance indicators to determine the formula of penalty for late fulfillment of road service levels (PLFRSL).*

*Data collection was carried out through: (a) secondary data: condition data, LHR, and maps of national roads, PLFRSL implementation data, community report/complaint data regarding road damage at the Central Java-Special Region of Yogyakarta National Road Implementation Center; (b) primary data is collected by filling out a questionnaire containing indicators for each factor that contributes to PLFRSL and the response time for RPI fulfillment. The data analysis method uses Structural Equation Modeling (SEM) with CFA (Confirmatory Factor Analysis) and Full Model SEM.*

*The results of the full model SEM analysis indicate that the road performance component contributes significantly to PLFRSL of 77.0%. Pavement, shoulders, drainage, road equipment, auxiliary buildings, and clearances contributed significantly to the road performance components respectively by 88.0%; 80.9%; 81.4%; 51.3%; 78.1%; and 79.1%. The analysis result of PLFRSL formula is  $S = Koef \times T \times F_v \times N \times F_A \times J$  with S as PLFRSL. Coefficient value (Koef) of each road component: pavement road: 0.027; shoulder: 0.020; drainage: 0.011; road equipment: 0.001; complementary buildings: 0.006; clearance: 0.017. Traffic volume factor ( $F_v$ ) on Primary Arterial Roads = 1.0 and Primary Collector Roads-1: 0.9. The multiplier value of the penalty (N) is Owner's Estimate for the scope of routine road maintenance. Factor of public complaints ( $F_A$ ) with criteria without complaints: 1.0; verified complaint: 1.5; if there is an accident: 2.0. J is  $\frac{P_{jc}}{P_{jl}}$  = the length of the road that does not meet the performance indicators in the specified road segment with a minimum segment length of 100 meters ( $P_{jc}$ ) divided by the length of the road in the contract based on the scope of work ( $P_{jl}$ ). The formula for the results of this research provides contractors a reasonably high penalty value for compliance and can enhance the performance of national roads through the long segment scheme.*

**Keywords:** long segment, road preservation, road performance indicator, penalties for late fulfillment in road service levels.