

**BRIDGE CONDITION VALUATION USING NYSDOT METHOD
AS PART OF DECISION MAKING SUPPORT SYSTEM
(A Case Study of Bridges in Yogyakarta)**

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ABSTRACT

Visual valuation on bridge condition is required to recognize the existing overall condition of a bridge. This research is carried out for 3 bridges in Yogyakarta : Tegal Gendu Bridge (concrete bridge), Muja Muju Bridge (truss bridge), and Sayidan Bridge (concrete bridge)

The objective of this study is to value bridge condition and its component using the Bridge Inspection Manual of NYSDOT (New York State Department of Transportation). This study also designs a valuation application for bridge condition under a computer base called BriCAS (Bridge Condition Analysis System), which is also used to support in giving priorities on bridge constructions by indicating the lowest BCR (Bridge Condition Rating) as the most priority. Other consideration is also based on the vital component of the bridge with the most severe damage. This study also describes the component scoring of NYSDOT using the AHP (Analytical Hierarchy Process) Method approach by comparing each bridge component based on each condition : primary members, abutment, pier, deck, bridge seat, bearings, wingwalls, backwalls, secondary members, joint, wearing surface, sidewalk, and curb. These components represent the bridge overall condition.

Valuation results based on NYSDOT for Tegal Gendu Bridge, Muja Muju Bridge, and Sayidan Bridge show condition index of 4,944 (fair), 5,099 (good), and 5,531 (good), respectively. Under the AHP method, the result show index of 4,838, 5,149, and 5,539, respectively. Subsequently order of range between the two different methods for the three above mentioned bridges are 0,106, 0,052, 0,008. Bridge component scoring under the NYSDOT can be calculated using the AHP method. Sensitivity level between components valued using AHP method is insignificant due to the shifting of the component importance level and will be distributed evenly. Thus changes are insignificant.

Keywords : condition index, bridge, component, valuation