ANALYSIS OF CONCESSION PERIOD DETERMINATION USING SIMULATION MODEL CASE STUDY KERTOSONO-MOJOKERTO TOLL ROAD PPP PROJECTS

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ABSTRACT

Implementation of toll roads in Indonesia is now the government's top priority in promoting development acceleration through Public Private Partnership (PPP) cooperation. In the concessions cooperation scheme, the concession period is very important for the government and the private sector in order to benefit both parties. Determination of the concession period does not only consider the interests of the government but also to accommodate the private interests by considering risk factors and uncertainties. The purpose of this study was to determine the optimal of the concession period for Kertosono-Mojokerto toll road PPP projects.

Determination of the concession period is done by calculating the NPV with certain level of IRR. Identification of risk factors and uncertainties is obtained from literature review and expert judgment that produce quantitative data analysis. Simulation model was built by using Montecarlo simulations on @Risk for Excel version 5.5 and scenarios simulation were created in 3 models of concession period as follows, 25 years, 30 years and 35 years. To validate the model, Kertosono-Mojokerto toll road PPP projects is used as a case study.

There are several risk factors and uncertainties are accommodated by this model namely, the risk in the construction, traffic volume risk and the risk that influenced by the economic situation. Calculation results that obtained from the simulation are the mean NPV of Rp. 2,183,874,704,000, - and the IRR mean value of 16.84% with optimal concession period of 30 years.

Keywords: Concessions, Public Private Partnership and Risk.
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