ABSTRACT

Infrastructures is the most important needs in support of a country's economic activity. One of the public facility that has an important role in society is the drinkable water infrastructure. PDAM Region X is a local supplier of drinkable water needs in Region X. One of way to help improve the water supply is to increase the installation, but to perform additional installation is very costly. Alternative action that can be choosed is to do a public-private partnerships.

The form of cooperation that used in the KPS PDAM Region X project is Rehabilitation Uprising Operate Transfer (RUOT) project. Implementation of RUOT on KPS PDAM project in water supply will rising a lot of risks, because many parties involved in cooperation, where the interests of each party is different. These risks will affect the sustainability of the project both financially and economically. In this study, the financial evaluation will be done by the method of Risk-Cost Benefit Analysis. Stage to be conducted in this study is to determine the critical risk factors, determine the
shape of an influence on the components of cash flow and capital costs, identify cost benefit financially, determine the probability distribution function of cost and benefit’s components, and calculate the value of FNPV and FIRR of the project by performing a monte carlo simulation. The results of this study are critical risk factor in the drinkable water project are electricity blackout and low quality of raw water risks and those risks gave a huge impact to raw material cost, chemical material cost, energy cost, and maintenance cost, the probability distribution of investation cost is triangular distribution, tariff and water volume have normal distribution, and other costs have normal distribution and the methods of risk-cost benefit analysis that evaluated the drinkable water KPS projects in Region X and the result shows that this project is feasible to be implemented.

**Key Words**: Risk, Cost benefit Analysis, KPS Project, Monte Carlo