ABSTRACT

PT XYZ is an outsource company with an engineer to order strategy which provides production, repair, and cleaning services for engine components. In the raw material procurement process, there are several cases and obstacles that occur from vendors such as late delivery, inappropriate specifications, price difference, less amount of raw material and shipping errors. The absence of vendor selection system and determining criteria also makes it difficult for decision maker to choose right vendor.

This study solves the problem of vendor selection by using a combination of Fuzzy Analytical Hierarchy Process (FAHP) and Fuzzy Technique for Order of Preference by Similarity to Ideal Solution (FTOPSIS) methods. Calculations using FAHP can identify the priority of the criteria used, while calculations using FTOPSIS are used to sort the best vendors with an assessment based on criteria.

The result of this research is the design of a decision support system for PT XYZ in the selection of vendors using the FAHP and FTOPSIS methods created using the Microsoft Excel application.

*Keywords — [**Vendor Selection, FAHP, FTOPSIS**]*