

ABSTRACT

CV ABC is a company engaged in the field of plumbing material distributors. In conducting its business, CV ABC certainly tries to maximize performance in selling plumbing material products. However, there is a backorder rate on several products sold with a percentage more than 5%, while the company has a backorder rate policy on each product approximately from 1-5%. This occurs due to changes in supplier policies, namely delivery schedules, change in product quality, reject rates, and limited product stock from suppliers. So, CV ABC needs products that can fulfill the wishes of buyers. In running its business, CV ABC has 3 suppliers who supply plumbing material products. Each supplier certainly has advantages and disadvantages from various indicators, so the company needs to determine the criteria and sub-criteria that can be prioritized. The purpose of this research is to find out the right decision method in supplier selection based on supplier criteria and sub-criteria based on company strategy. So, to solve these problems, this study uses the Internal-External (IE) Matrix, Analytical Network Process (ANP) and TOPSIS methods to identify supplier criteria and sub-criteria, and supplier rankings based on the weights obtained. The result obtained in this study are selected criteria and sub-criteria in selecting suppliers using the Analytical Network Process (ANP) method, supplier ranking identified by the TOPSIS Method, and the right decision support system to make it easier for companies to select suppliers. The result in this study are 8 criteria with 27 sub-criteria that can be used as indicators of companies in choosing suppliers, and the ranking order of criteria and sub-criteria that can be prioritized.

Keyword: Supplier selection, IE Matrix, Analytical Network Process (ANP), TOPSIS, decision support system.