ABSTRACT

PT. GHI is a logistics company that exports automotive parts. From April 2022 to February 2023, the company faced 14 cases of defective parts caused by damaged packaging materials, resulting in replacement costs of Rp. 1,044,538,560. The main problem was that the company's supplier evaluation system was subjective, allowing poorly performing suppliers to be chosen again for next year contracts. To solve this, this research used the Green SCOR method to design Key Performance Indicators (KPIs) and the Fuzzy AHP method to calculate the importance of each KPI. The DANP and VIKOR methods were then applied to rank and select suppliers for the next contract period.

The study created 14 KPIs to measure supplier performance. Current suppliers were evaluated, and the results showed: DJRY scored 88.16, HLVT (Steel case) 57.63, WCKY 92.87, and HLVT (Submaterial) 91.61. Improvement strategies were implemented to HLVT (Steel case), the lowest-performing supplier, which helped raise its KPI score to 79.02 and reduced the number of defective parts by 53.85%, surpassing the company's goal of reducing defects by 30%.

In the next supplier selection period, all candidates were evaluated based on the supplier selection criteria that had been designed and using the same KPIs for supplier performance. The results showed that TTID was chosen as the best supplier for the Steel Case category, surpassing HLVT. DJRY was reselected for the carton box category, WCKY was reselected for the wooden pallet category, and HLVT (Submaterial) was reselected for the submaterial category. Further evaluation showed that during its partnership with PT. GHI, TTID had never caused any defective part issues due to damaged packaging materials.

Keywords: Supplier performance, Green SCOR, Supplier selection, DANP, VIKOR