ABSTRACT:

This study was aimed at evaluating the performance of the reverse logistics process in the automotive industry. Fuzzy logic was applied in assessing the performance of the reverse logistics process using a case study. Linguistic variables were used to represent the performance of the metrics, and the variables were converted into fuzzy numbers. Fuzzy operators were applied to these numbers to obtain the performance of the measures and the entire process. From the results obtained, it was found that the approach adopted is applicable in evaluating the reverse logistics performance of the automotive industry. Based on this study, managers can assess their reverse logistics processes with ease and identify areas which are deficient, thus improving the overall performance of their reverse logistics. This will in turn support environmental management through waste reduction. In essence, this paper contributes to knowledge in performance measurement at large, thus putting forth a measurement approach for reverse logistics operations in the automotive industry. It also gives guidelines for future research in reverse logistics management.