## APPLYING FUZZY TOPSIS METHOD IN DETERMINING THE BEST BRAND FOR BOTTLED WATER PRODUCTS

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## ABSTRACT

Bottled Drinking Water (AMDK) is an essential resource for the community; however, the multitude of brands available on the market makes it challenging for consumers to identify the best option. This study aims to apply the Fuzzy TOPSIS method to facilitate the decision-making process in selecting the optimal AMDK brand. The Fuzzy TOPSIS method was chosen for its effectiveness in managing uncertainty and subjectivity in multi-criteria evaluations. The study utilized several key parameters, including pH, Total Dissolved Solids (TDS), weight, and price as evaluation criteria. Data were collected through direct measurements of various AMDK brands available in Indonesia. The data collection process for this study was conducted in stages, from March to November 2024. The Fuzzy TOPSIS method is a valuable tool that helps consumers identify the most suitable AMDK brands based on their preferences. The study's findings indicate that the Fuzzy TOPSIS method consistently generates reliable results in brand ranking. The Alfa, Aqua, and Club brands obtained the highest preference value of 1, followed by Super O2, while other brands had lower values. This outcome demonstrates the efficacy of the Fuzzy TOPSIS method as a reliable decision support system, particularly in scenarios involving multi-criteria assessments. The study's conclusion asserts the effectiveness of the Fuzzy TOPSIS method in identifying the optimal AMDK brand, taking into account both water quality and price considerations.

Keywords: Fuzzy TOPSIS, AMDK, Decision Support System, pH, TDS.