ABSTRACT

IMPLEMENTATION OF K-MEANS CLUSTERING METHOD TO DEVELOP STRATEGIES FOR IMPROVING SCHOOL QUALITY BASED ON ACADEMIC DATA

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The new student enrollment process plays a crucial role in the education system, directly influencing school quality. SMA Negeri 1 Pagelaran, the only public senior high school in Pagelaran Subdistrict, Pringsewu District, Lampung Province, is committed to continuously enhancing its educational quality in both academic and non-academic aspects. One effective strategy for achieving this is the use of data analytics tools to comprehensively evaluate student performance. This study aims to apply the K-Means Clustering method in analyzing academic data to devise strategies for improving school quality. The study considered variables such as gender, major, grade, non-academic performance, and alumni status. The data, spanning from 2000 to 2023, were analyzed using the RapidMiner tool with a quantitative approach. The findings of this study are expected to assist school management in identifying student groups based on their characteristics and formulating targeted strategies to improve educational quality. In doing so, hidden insights from academic data can be fully utilized for more informed and strategic decision-making.

Keywords: K-Means, Clustering, School Quality, Academic Data, RapidMiner, Senior High School