

**IMPLEMENTASI *DASHBOARD* VISUALISASI DENGAN *CLUSTERING*
PADA DATA PENDIDIKAN DASAR DAN MENENGAH DI KABUPATEN
BULELENG MENGGUNAKAN BI *ROADMAP***

Oleh

Nyoman Wahyu Candra Nata, NIM 2215091064

Program Studi Sistem Informasi

Jurusan Teknik Informatika

Fakultas Teknik dan Kejuruan

Universitas Pendidikan Ganesha

ABSTRAK

Penelitian ini bertujuan merancang dan mengembangkan dashboard visualisasi data pendidikan sekolah dasar dan menengah di Kabupaten Buleleng menggunakan pendekatan BI Roadmap dan metode K-Means Clustering. Data yang digunakan berasal dari Dapodikdasmen dan SatuData Kabupaten Buleleng periode 2022-2024, mencakup 601 sekolah pada jenjang SD, SMP, SMA, dan SMK. Dashboard dikembangkan menggunakan Microsoft Power BI melalui enam tahapan BI Roadmap dan menghasilkan empat halaman visualisasi. Penerapan K-Means Clustering pada 594 sekolah menghasilkan tiga cluster, yaitu Sekolah Besar (62 sekolah), Sekolah Sedang (449 sekolah), dan Sekolah Kecil (83 sekolah), dengan nilai Davies-Bouldin Index sebesar 0,5575 (kategori baik). Hasil UAT menunjukkan seluruh 18 fungsi sistem berhasil, dengan skor kepuasan pengguna 4,42 dari 5 (kategori sangat layak). Dashboard ini terbukti layak digunakan untuk mendukung pengambilan keputusan berbasis data pendidikan di Kabupaten Buleleng.

Kata kunci: BI Roadmap, K-Means Clustering, Dashboard, Power BI, Data Pendidikan.

***IMPLEMENTATION OF VISUALIZATION DASHBOARD WITH
CLUSTERING FOR PRIMARY AND SECONDARY EDUCATION DATA IN
BULELENG REGENCY USING BI ROADMAP***

By

Nyoman Wahyu Candra Nata, NIM 2215091064

Information Systems Study Program

Department of Informatics Engineering

Faculty of Engineering and Vocational Studies

Universitas Pendidikan Ganesha

ABSTRACT

This study aims to design and develop a data visualization dashboard for primary and secondary education in Buleleng Regency using the BI Roadmap approach and the K-Means Clustering method. Data were obtained from Dapodikdasmen and SatuData Buleleng Regency for 2022-2024, covering 601 schools at the elementary, junior high, senior high, and vocational levels. The dashboard was developed using Microsoft Power BI through six BI Roadmap stages, producing four visualization pages. Applying K-Means Clustering to 594 schools produced three clusters: Large Schools (62 schools), Medium Schools (449 schools), and Small Schools (83 schools), with a Davies-Bouldin Index of 0.5575 (good category). UAT results showed all 18 system functions succeeded, with a user satisfaction score of 4.42 out of 5 (highly feasible category). The dashboard is proven feasible for supporting education data-based decision-making in Buleleng Regency.

Keywords: BI Roadmap, K-Means Clustering, Dashboard, Power BI, Education Data.