

PERANCANGAN VISUALISASI PENYAJIAN INFORMASI WAWASAN KETAHANAN PANGAN NASIONAL PADA ASPEK *SUSTAINABILITY* DAN *ADAPTATION* DENGAN METODE *TIMEVIZ BROWSER* DAN *DATA VAULT*

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ABSTRAK

Ketahanan pangan merupakan isu strategis di Indonesia, khususnya dalam menghadapi tantangan perubahan iklim, degradasi lingkungan, dan ketimpangan distribusi. Penelitian ini bertujuan untuk merancang visualisasi penyajian informasi ketahanan pangan nasional pada aspek sustainability dan adaptation menggunakan pendekatan *TimeViz Browser* dan *Data Vault*. Metodologi yang digunakan mencakup perancangan skema data dengan model *Data Vault*, transformasi ke dalam bentuk Star Schema untuk *Data Mart*, serta implementasi visualisasi interaktif menggunakan Apache Superset. Dataset simulasi dikembangkan berdasarkan parameter *Global Food Security Index* (GFSI) dan divalidasi secara konseptual oleh instansi terkait. Hasil akhir berupa dashboard business intelligence yang menyajikan indikator-indikator ketahanan pangan secara historis dan geografis. Evaluasi dilakukan dengan metode VLAT terhadap responden untuk mengukur pemahaman pengguna terhadap visualisasi. Hasil menunjukkan bahwa model yang diusulkan mencapai efektivitas sebesar 82%, termasuk dalam kategori baik, yang mencerminkan peningkatan pemahaman pengguna dalam menginterpretasikan kondisi dan tren ketahanan pangan.

Kata Kunci : *Business Intelligence, Data Vault, Ketahanan Pangan, Sustainability, Adapation, TimeViz Browser*

DESIGN OF VISUALIZATION OF PRESENTATION OF NATIONAL FOOD SECURITY INSIGHT INFORMATION ON SUSTAINABILITY AND ADAPTATION ASPECTS USING TIMEVIZ BROWSER AND DATA VAULT METHODS

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ABSTRACT

Food security is a strategic issue in Indonesia, particularly in facing the challenges of climate change, environmental degradation, and distribution inequality. This study aims to design a visualization of national food security information focusing on sustainability and adaptation aspects using the TimeViz Browser and Data Vault approach. The methodology includes designing a data schema using the Data Vault model, transforming it into a Star Schema for the Data Mart, and implementing interactive visualizations using Apache Superset. A simulated dataset was developed based on parameters from the Global Food Security Index (GFSI) and was conceptually validated by relevant institutions. The final result is a business intelligence dashboard that presents food security indicators both historically and geographically. Evaluation was carried out using the Visualization Literacy Assessment Test (VLAT) to measure user comprehension of the visualizations. The results show that the proposed model achieved an effectiveness score of 82%, classified as good, indicating improved user understanding in interpreting the conditions and trends of food security.

Keywords: Business Intelligence, Data Vault, Food Security, Sustainability, Adaptation, TimeViz Browser