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Design of a Computational Model to Support the Calculation of a Structural Health Index for Bridges

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Abstract : In many Latin American countries, including Costa Rica, the poor condition of national road bridges significantly hinders socioeconomic progress. Addressing this issue, this article introduces a computational method designed to evaluate and monitor bridge health over time. It outlines a business intelligence model that facilitates data storage from bridge inspections and supports structural health index calculations. A Power BI prototype displays crucial visualizations that improve decision making on infrastructure investments. This approach leverages business intelligence and hierarchical visualization techniques, offering a solution to quantitatively assess bridge health and prioritize investments in national infrastructure efficiently.

Keywords : bridges, business intelligence, structural health index, structural health monitoring
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