

158ª DEFESA DE TESE EM ENGENHARIA INDUSTRIAL

PROGRAMA DE PÓS-GRADUAÇÃO EM ENGENHARIA INDUSTRIAL - PEI

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Título: PERFORMANCE MEASUREMENT SYSTEM MODEL ORIENTED TO HEALTH SERVICES MANAGEMENT.

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Resumo:

This thesis develops and empirically validates a Performance Measurement System model oriented toward the management of complex health services, using Primary Health Care as a critical empirical field. The study recognizes that public health services operate under conditions of organizational complexity, fragmented data, institutional constraints, territorial inequalities, limited technological maturity, and permanent demand for evidence-informed decision-making. Methodologically, the thesis articulates three complementary studies aligned with its specific objectives. The first study identifies, through a systematic literature review, constructs, methods, indicators, dimensions, and research gaps associated with Performance Measurement Systems in Primary Health Care. The second study develops and empirically validates a PMS in a vulnerable semi-arid municipality, based on formative diagnosis, co-production with local actors, indicator construction, pilot application, and longitudinal monitoring. This process resulted in an 18-indicator PMS structured for managerial use in Primary Health Care. The third study extends the system using Machine Learning techniques and a PMS-based Analytical Digital Twin, leveraging seven months of monitoring data from seven PHC units to assess forecasting, scenario analysis, systemic interpretation, and decision-support capacity. The findings indicate that the central contribution of the thesis lies in proposing a situated methodological architecture that articulates scientific evidence, contextual adaptation, stakeholder participation, longitudinal monitoring, and analytical-predictive expansion. The thesis contributes to the field of Performance Measurement Systems by showing how a PMS model can be developed, validated, and analytically expanded in complex health services under real public management conditions, without reducing performance governance to isolated indicators, retrospective dashboards, or purely technological solutions.

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Palavras-chave: Performance Measurement System; Health Services Management; Primary Health Care; Machine Learning; Analytical Digital Twin; Decision Support.

