



"CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION"

## The Measurement of Environmental Performance in Hospitals: A Framework and Process

PASQUALINI BLASS, A.  $^{a,c^*}$ , GOUVÊA DA COSTA, S. E.  $^{a,b}$ , PINHEIRO DE LIMA, E.  $^{a,b}$ , BORGES, L. A.  $^{c}$ 

a. Industrial and Systems Engineering - Pontifical Catholic University of Parana – PUCPR, Curitiba, PR, Brazil

b. Federal University of Technology - Parana, Curitiba, PR, Brazil

c. UNIDAVI, Rio do Sul, SC, Brazil

\*Corresponding author, apasqualini@unidavi.edu.br

## **Abstract**

Since the publication of the Brundtland Report (1987), academics and practitioners have raised concerns on the measurement of environmental sustainability performance. In the healthcare sector, especially in hospitals, measuring environmental performance relates to the reduction of environmental impact and continuous improvements in the quality of processes and outcomes. The literature review highlighted concerns on the lack of strategic focus of performance indicators, relevance and robustness of metrics and difficulties for the deployment of measures within different hierarchical levels. New frameworks are necessary to define relevant and meaningful indicators for monitoring and assessing environmental performance if healthcare systems and operations are to be improved. Moreover, field studies conducted with 10 hospitals in the Southern region of Brazil underlined the scarcity of consistent frameworks applied in practice to measure, monitor and improve environmental performance. Considering this context, the study seeks to propose an alternative framework drawn from the review of literature and current legislation. The proposed framework is operationalized through a 'process approach' and evaluated in terms of feasibility (can the process be followed?), usability (is the approach easily followed?), utility (are the results useful for managers?).

Keywords: Healthcare Operations. Environmental Performance. Measurement. Hospitals. Framework