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An approach based on Artificial Neural Networks

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Does regional belonging explain the similarities in the expenditure determinants of Italian healthcare deliveries? An approach based on Artificial Neural Networks.

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Abstract

The investigation of the determinants of public health expenditure is the focus of a vivid debate among health economists whereas the actual crisis of the welfare systems calls for the adoption of innovative tools to inform rational decisions, in the light of stringent budget constraints.
The purpose of this paper is to show the potentialities of Artificial Neural Networks (ANNs) in investigating whether healthcare providers belonging to the same jurisdiction show similarities in their health care expenditure determinants.
Similarities are reproduced in terms of fuzzy dependencies between health budgetary data of the healthcare providers belonging to five Italian regions. The analysis carried out sees the application of Auto Contractive Maps (AutoCM) model.
The methodology is effective in illustrating regional patterns of expenditure and similarities across Local Health Units (Aziende Sanitarie Locali - ASLs).
The results give interesting insights on the presence of notable regional models for health expenditure.

Keywords

Health expenditure, Artificial Neural Networks, AutoCM model, Budget data, Local Health Units.

JEL classification

H75, I18, C6, C8.

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None

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