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Stream: **Comparative Methodology**

Welfare states and social sustainability

An application of SEM and SOM in a virtuous circle environment

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Abstract

A central concept of the first part of this study is the virtuous circle. We use it here to refer to the propensity of actions with positive effects to function in a self-reinforcing manner. In the welfare state context, this means that to the extent that a welfare effort has a positive effect on well-being and the reduction of inequality, the citizens are willing to maintain and even to intensify such an effort.

We study in a comparative perspective the hypothesis that risks should be covered by the welfare state. This hypothesis argues that the welfare state increases equality between people by covering risks and by equalizing opportunities and the income distribution. The core of our hypothesis is that the equality created by the welfare state is positively interrelated both with generalized trust between the people and with bridging participation. This interrelation diminishes risks and is itself interrelated with the well-being of the people. We combine variables in a way that produces a continuous process chain. For this purpose we are using several indicators from developed OECD countries and latent variable structural equation modelling (SEM).

The aim of the second part of this study is to assess the appropriateness of a new method for comparative welfare research. We approach here the problem of classification and clustering of welfare states by means of a novel method invented and developed by Academician Teuvo Kohonen at the Helsinki University of Technology for purposes of data analysis and information visualization. This neural network algorithm can cluster cases characterized by multidimensional data on a two-dimensional output space known as the Self-Organizing Map (SOM), where the central dependencies among the data are represented on a kind of two-dimensional grid, or map. The learning is carried out by iterative regressions. The neurons of the map (node) represent a model. The models become ordered so that similar models move closer to each other while dissimilar models move away from each other as the iterations proceed. The Self-Organizing Map is employed to test the sustainability of the welfare state models using indicators revealed by the empirical estimation of the virtuous circle. By tightening the criteria for clustering (SOM-Ward-clusters) it is found that the Nordic welfare state model remains coherent while the other welfare state models are dispersed. This emphasizes the relation between the idea of the virtuous circle and the social sustainability of the welfare state.

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