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## Measurement of cognitive growth factors of regional economy based on panel data

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### Abstract

© MCSER-Mediterranean Center of Social and Educational Research. The article seeks to demonstrate the need for improved mesoeconomical measurement by separating the sphere of production and dissemination of knowledge and formulate an approach to the measurement of cognitive factors in the economic growth of the regional economy. This suggests presenting a classification of growth factors, theoretical principles of knowledge management, knowledge base and the methods of multivariate data analysis: crossed classification and panel data. The study intends to provide a method for measuring changes in the economy of the region under the influence of new knowledge by means of an econometric analysis of the knowledge indicators system - predictors of the cognitive factors of economic growth in the region. The author applies a multidisciplinary approach to the study, carrying out a synthesis of scientific publications on the problems of economic growth, knowledge management, and accumulation of knowledge in the information space of the region, applied analysis. It is emphasized that there is the need for multivariate statistical methods in the analysis of stochastic information. It is proposed to measure and simulate the spatial heterogeneity of the innovation economy based on panel data. The article stresses the need for and the importance of measuring cognitive growth factors for the innovation regional economy. The result is a methodical approach to the calculation of integral indices on the basis of a system of knowledge indicators in the regional economy. The article presents the more conceptual judgments and general recommendations. Therefore, future studies can perform more detailed calculations and experimental development. The presented methodical approach can be useful for improving the monitoring in the system of the state strategic planning to increase the efficiency of innovation and gain competitive advantages of the region's economy.

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### Keywords

Economic growth, Innovations, Integral index, Knowledge management, Models of panel data, Regional economy