

Index Construction: Expert-statistical Technique

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There are lots of ways to construct indices. However, when algorithms are chosen and some results obtained, the following question arises: How to show adequacy of the calculated indices? To answer the question analysts invite experts. The experts express their opinion and then the second question arises: How to show that expert estimations are valid?

There are three ways to construct an index. The first is to make index with a method that used measured data with no expert estimations. The second is to make index where experts estimate the feature significance weights. Both methods use feature linear combination for measured data to make the index.

Unlike all the mentioned methods the expert estimations concordance technique uses as measured data as well expert estimations of object quality and feature significance weights. According to the technique the experts extricate the contradictions between measured data and expert estimation by mean of alignment features' weights versus objects' quality importance for given data model.

As a result we have: first, precise valid indices. Second, we have the reasoned expert estimations; we know why expert valued an object and what contribution a feature makes to index. And we have weights to make future indices by using "non-expert" methods.

The method was used for solution different economical, sociological and ecological problems: Russian nature protected areas management effectiveness evaluation; Integral indicator for quality of life in Russian regions; Human Development Index in Russia; Kyoto-index of US power plants.

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Bibliography

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