

Forecasting innovation performance via neural networks – Evidence from manufacturing industry in Europe

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Non-linear modelling techniques are the subject of increasing interest in innovation economics, with neural networks assuming a prominent role. Neural networks form a field of research which has enjoyed rapid expansion and increasing popularities in both the academic and industrial research communities. Neural networks are essentially statistical devices for performing inductive inference. From the statistician's point of view they are analogous to non-parametric, non-linear regression models. The novelty about neural networks lies in their ability to model non-linear processes with few – if any – a priori assumptions about the nature of the generating process.

This is particularly useful in forecasting innovation performance, where much is assumed and little is known about the nature of the processes determining innovation performance. The objective of the dissertation project is to design a feedforward neural network model to forecast innovation performance of manufacturing firms in Europe, network learning and testing should be performed using information provided by the Community Innovation Survey.

The research is methodologically and technically demanding and requires skills in both statistical modelling and programming. Some basic knowledge in innovation economics is beneficial.

References

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