

Artificial Neural Network (ANN) research in the hospitality and tourism industry

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Introduction. Forecasting in the hospitality and tourism industry serves an important control. Classical forecasting methods do not provide high-quality results due to increasing complexity of economic relations and a number of factors affecting the industry and the company, its members. In these circumstances, it is necessary to have a tool to simplify the decision-making process to get more accurate forecasts and warning of possible troubles and how to prevent them. The article shows the technique of application neuroagent technologies and their potential applications in the hospitality and tourism industry.

Materials and methods. The neural network (Artificial Neural Network, ANN) – a mathematical model as well as its software or hardware embodiment, based on the principle of the organization and functioning of biological neural networks - networks of nerve cells of a live organism.

In general, a neural network - a mathematical model structured like the human brain, which aims to identify certain patterns in existing data.

In the hospitality industry and tourism for the last 10-15 years there was a qualitative leap in the use of neural network technology for forecasting. Consider the use of examples, some results of the research and features.

Results. In 2016 Edi Noersasongko, Fenty Trisanti Julfia, Abdul Syukur, Purwanto, Ricardus Anggi Pramunendar and Catur Supriyanto conducted a study of tourist arrivals with the help of neural networks based on genetic algorithms. In this study, the authors point out that many scientists use the network based on back-propagation, but the result is not always happy with them. Based on historical data for the 1991-2013years, The researchers compared the three predictive models: neural network back propagation, nearest neighbor (k-nearest) and linear regression model. In 2016 the work of Russian researchers and Miloradova Eidlin on mutual outbound and domestic tourism in Russia was published, it was based on neural network model. The paper analyzes the impact of changes in the numbers of tourists visiting, related to the closure of Egypt and Turkey for Russian tourists. Thus, the artificial neural network is actively used in the study, analysis and forecasting in the hospitality and tourism industry. At the level of individual companies neural networks can be used in a large number of applications: risk assessment, hazard identification, assistance in making decisions.

Conclusion. The study leads to the following conclusions: the application of neural network technology in the analysis and forecast of the hospitality and tourism industry is paid much attention; modern hospitality and tourism industry appears very vulnerable to the influence of many factors, wearing the often non-linear, making it difficult to use classical statistical procedures for analyzing and forecasting; as a solution to the problem of data comprehensiveness and complexity of the acts the application of neural network technology.