

Neural networks in the studies of consumer behaviour

This thesis demonstrates the usefulness of artificial neural networks for data analysis in selected research areas of consumer behavior, such as consumer segmentation, churn analysis and market basket analysis. It presents neural networks, with particular emphasis on Kohonen network and multilayer perceptron (MLP), explains the specifics of the consumer behavior research and refers to existing literature, which deals with the use of neural networks for analysis of consumer behavior. Furthermore it contains three studies of consumer behavior, covering the areas of consumer segmentation, churn analysis and market basket analysis. For each, neural networks as well as other tools of data analysis are used and their results are compared. The first study deals with the segmentation of selected countries, based on the structure of their citizens' consumer expenditures. Kohonen networks and the k-means algorithm are used to create the clusters. In the second study factors, which have a high impact on the loyalty of students to continue their studies on the origin university after bachelor graduation, are discovered. To assess this churn analysis, MLP as well as simple statistical methods are applied. The last study reveals patterns of consumer purchasing behavior by analyzing transactional data. Here neural networks (Kohonen and MLP) as well as the a priori method are used.