ABSTRACT
The non-linear and non-stationary nature of tourism demand makes tourism forecasting studies difficult and drives researchers to investigate new methods to obtain more accurate forecasts. In this study, it is aimed to determine the forecasting method that provides the best performance when compared the “in sample and out of sample” ex-post forecast accuracy of naive forecasting, moving averages, exponential smoothing, Box-Jenkins methodology as time series techniques and different Artificial Neural Network (ANN) models which were used to estimate the monthly inbound tourism demand to Antalya for years 2006 and 2007 via the method of giving best results. Structuring a basis for the applied forecasts and development plans of tourism by local government bodies; assisting decision taking procedures of related managers’ monthly plans, and contributing to tourism literature of Turkey are among the aims of this study.

Focusing most tourism demand forecasting studies on building and evaluating forecasting models; lack of effort in providing actual forecasts and moreover suggesting built models into use without investigating their forecasting performance have been criticized in tourism literature. In addition to this, most of tourism demand modeling and forecasting studies are applied to country based and yearly data sets instead of applying to a specific region or destination. It is also observed that studies concerned with modeling and forecasting tourism demand to Antalya are rare in the literature. Because of the lack of both studies concerning modeling and forecasting tourism demand to Antalya and comparative studies concerning monthly forecasting tourism demand mounted by ANN, it is strongly believed that this study prepared on the basis of inter-disciplinary approach is remarkably important since it will enlighten the future studies on these mediums.

IV. Lisansüstü 936 Turizm Öğrencileri Araştırma Kongresi
In this research, the total number of foreign tourist arrivals is used as a measure of inbound tourism demand and monthly foreign tourist arrivals to Antalya in the period of January 1992 – December 2005 data were utilized to build appropriate model. The monthly data were preferred to be able to make more detailed analysis by taking into account of seasonal and trend components. As a result of the analyses carried out to determine the appropriate models, it has been determined that data are under the effect of seasonal variations with a positive trend. As a conclusion of the assessment of experimental results, it has been observed that forecasts by the methods “Winter’s seasonal exponential smoothing” and “multicaptive-seasonal ARIMA” have provided quite good results and on the other hand artificial neural network model has showed best forecast accuracy with lowest deviation among the techniques applied in this research. Forecasting accuracy of each model has been evaluated utilizing Root Mean Absolute Error (RMSE) and Mean Absolute Percentage Error (MAPE) statistics taking into account of suggestions to choose appropriate forecasting model. In the process of modeling the data by ANN, it is analyzed the ex post forecast accuracy of different network architectures constituted by both unpreprocessed and seasonally adjusted data taking into account of the distinct viewpoints in related studies. As a consequence of several attempts it has been observed that 12 lagged ANN model formed by utilizing the unpreprocessed raw
data has presented best performance and by the means of this model has been forecasted the monthly inbound tourism demand to Antalya for years 2006 and 2007. In this model “feed forward back propagation” network structure has been utilized and model’s parameters updated by “back propagation” algorithm. The capability of ANN in modeling nonlinear and dynamic systems has been studied and confirmed by a number of researchers. Considering the results obtained not only by this study but also by most recent studies, it has been observed that the ANN models without problems such as over-training and structural failures etc., outperform the results of other forecasting techniques. Therefore, it ought to be attentive to constitute appropriate model that fit the structure of data.

Key words: Tourism Demand, Forecasting Methods, Artificial Neural Networks