

Abstract

The purpose of this dissertation is to complement the lack of data related to the forest and agricultural occupation and the livestock in Castelo de Vide. To solve the research problem a model of data disaggregation was developed, taking the utmost of previous information available in earlier studies.

The proposed model was based on the ideas of generalized maximum entropy (GME) and minimum generalized crossed entropy (MGCE), in order to obtain a series of disaggregated data related to the forest and agricultural occupation, considering two levels of disaggregation and following two steps: 1) the creation of a basis at the aggregated level (Markov transition matrixes, estimated by the maximum entropy); 2) data disaggregation, based on the previous established basis. The model also involves two application variants: simultaneous disaggregation of data as well as a direct one (to solve the problems that might appear in the previous one and maximize the recovered information). Moreover, a model based on these principles is proposed to the disaggregation of the livestock data.

The model is applied to the disaggregation of data in the municipality of Castelo de Vide. The results obtained in the process of direct disaggregation of the forest and agricultural occupation and livestock have shown to be reliable. They have been validated in the year of 1999, submitted to experts' opinions, to other sources of information and compared to the results of other methodologies.

The analysis of the results showed that the forest and agricultural occupation of Alto Alentejo and Castelo de Vide after 1999 tend to be more homogeneous, with a strong domain of permanent pastures, and there is a shortage of certain livestock (sheep and goats). The several CAP changes have had effects in Alto Alentejo and Castelo de Vide, since they have contributed to a larger extensification of the practice of agriculture and to the decline of traditional productions.

Keywords: data disaggregation, maximum entropy, minimum cross entropy, Markov processes, agricultural and forest occupation, livestock, Castelo de Vide.