

Valuing coastal recreation in Denmark using a Random Utility Modelling framework

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Abstract:

Recreation is one of the numerous ecosystem services provided by various ecosystems and economic valuation can play an important role in the planning of long-term ecosystem conservation projects. In order to assess these services both supply and demand factors need to be taken into consideration; which include the site attributes, geographical distribution, socioeconomic characteristics of the respondents and the heterogeneity in the preferences of site selection. Hence, this requires a combination of economic and spatial modelling. Although Denmark is renowned for its coastal recreation opportunities, most of the recreational choice modelling has focused on the attributes of forest recreational sites. This study attempts a recreational choice modelling which combines both inland and coastal sites together and aim to improve current knowledge of the value of coastal attributes. We achieve this by using the survey data from DØRS report (2014) combined with bathing water quality indicators from the European Environment Agency (EEA) bathing water directives.

Random Utility Model (RUM) is being used as a preferred approach for recreational service valuation. It is especially useful when a large number of choices are available and site substitution is important. In this study RUM is employed for valuation of the specific sites and linked with a count model in order to estimate the total value of access per site and to identify the plausible determining factors of recreational choices. We estimate a mixed logit model to capture the heterogeneous preferences across population and the spatial heterogeneity of recreational opportunities.

The results show that water quality indicators are important determinants of recreational patterns in Denmark and significant economic values can be generated or maintained through protection of the quality of our coastal sites.

Key words: recreational services, coastal recreation, water quality indicators, Random Utility Model, mixed logit models, heterogeneity in recreational choices