Session F3

Assessing the tourism efficiency in the Caspian Sea Region - Ruslan Nurmatov, Simeon Nanovsky, Xose Luis Fernandez Lopez and David Paz Saavedra

This study aims to contribute to the analysis of the factors that determine the efficiency of tourism in the context of Covid-19 and other external shocks in the Caspian regions of the Republic of Kazakhstan, Russia, and Azerbaijan for the period 2003-2022. To do that, first, a Meta-frontier DEA (Charnes et al., 1978; Battese et al., 2004; O'Donnell et al., 2008) was used to obtain efficiency scores for each Caspian region of Kazakhstan, Russia, and Azerbaijan, then the bootstrap method proposed by Simar and Wilson (2007) was used to measure the efficiency of explanatory factors in these Caspian regions. Third, autoregressive integrated moving average methodology (Box and Jenkins, 1970) is used to forecast the future efficiency in the Caspian regions.

The results suggest that geographical location has no significant impact on the efficiency of Kazakhstan, Russia, and Azerbaijan regional tourism. There is no convergence in the level of efficiency between regions within countries. The average tourism efficiency of Kazakhstan, Russia, and Azerbaijan regions is 0.33. the most efficient region within KZ, RU, and AZ during the period of the study is Baku (the capital of AZ), (0.51, CRS). The analysis under forecasting shows a possible rising in efficiency level for the Republic of Kalmykia (RU) up to +0.99 by the year 2030.

A Modified Tourism Climate Index proposal to measure destinations' vulnerability: Development, Validation and Application - Jiechen Tang, Liu Shiyue, Vicente Ramos and Xinyu Yuan

Despite increasing academic interest in climate assessment indices for tourism, research and development in this field have been limited by a lack of consideration for certain risks, such as changes in air quality or climate change. This study addresses this gap by developing a modified tourism climate index (MTCI) that can be applied to comprehensively assess destinations vulnerability related with aspects of the climate that might influence tourism under pollution episodes and climate change. The proposed MTCI builds upon a theoretical framework that considers thermal comfort, physical factors, and aesthetics from the thermal comfort index (TCI) and also incorporates air quality and risk perception factors related to and extreme weather. The threshold and score used to build the proposed MTCI were adjusted based on a survey of inbound tourists' climate preferences in six major Chinese cities (Beijing, Shanghai, Guangzhou, Chengdu, Wuhan, and Kunming). Daily meteorological data for Shanghai were analysed and compared with monthly inbound tourist numbers. A multiple regression method was used to determine the weight of each weather variable, and a threshold for extreme weather was integrated into the equation. The effectiveness of the MTCI is verified by comparing results of using the MTCI or TCI for estimating tourism arrivals to Shanghai.

The Impact of Tourism Development on Residents' Life Satisfaction: A View of Regional Spillover Effects - Ruijuan Hu, Jason Li Chen and Gang Li

Recently, scholars have demonstrated the spatial spillover effects of various influencing factors in neighbourhoods on the life satisfaction or life domains of local communities (e.g., Delmelle et al., 2016; Lenzi and Perucca, 2020; Di Paolo and Ferrer-i-Carbonell, 2021). Meanwhile, spatial econometric models have also gained increasing attention from tourism scholars (e.g., Yang and Fik, 2014; Li et al., 2016; Liu, Nijkamp and Lin, 2017; Jiao, Li and Chen, 2020; 2021; Kim et al., 2021). However, no studies have applied spatiotemporal econometric models to study the relationship between tourism development and residents' life satisfaction, accounting for the spatial dependence between regions. On the other hand, many studies have shown that tourism development can influence residents' life satisfaction both directly and through mediation effects of life domains using individual data, while no studies have demonstrated this with aggregated regional data (Hu et al., 2022). This study intends to bridge these gaps by introducing spatial econometric methods and identifying a causal chain in this research domain to investigate how and to what extent tourism development influences local residents' life satisfaction both intra-regionally and inter-regionally, highlighting the spatial spillover effects and mediation effects.

Using aggregated panel data from England and Wales at the NUTS3 level during 2009-2019, this research explores the pathways and mechanisms of tourism development's impact on residents' life satisfaction through a series of spatial dynamic econometric models in one framework. This is the first attempt at applying this framework and methodology in life satisfaction and tourism study areas. Specifically, satisfaction with overall life serves as the dependent (outcome) variable in the direct impact of the independent variable (tourism development) on the outcome variable path (path c). Life domain satisfaction variables, i.e., satisfaction with income, satisfaction with health, satisfaction with the amount of leisure time, and satisfaction with the job, are chosen as mediating variables in the impacts of mediators on the outcome variable path (path b). In addition, these life domains serve as the dependent variable in the impacts of the independent variable (i.e., tourism development) (paths a1 to a4) respectively. The series of spatial dynamic panel data regression models have been estimated using the robust system GMM (Arellano and Bover, 1995; Blundell and Bond, 2023) technique to address potential incidental problems (Neyman and Scott, 1948; Nickell, 1981) and potential heteroskedasticity problems in this short aggregate panel dataset; the results demonstrate both mediation effects and spatial spillover effects with statistical significance. The results have important policy implications in relation to regional tourism development and residents' quality of life.