The Spatial Pattern of Ski Areas and Its Driving Factors in China: A Strategy for Healthy Development of the Ski Industry

Hongmin An¹, Cunde Xiao¹, and Minghu Ding²

¹State Key Laboratory of Earth Surface Processes and Resource Ecology, Beijing Normal University, Beijing, China (anan5119ahm@gmail.com, cdxiao@bnu.edu.cn)
²Institute of Tibetan Plateau and Polar Meteorology, Chinese Academy of Meteorological Science, Beijing, China (dingminghu@foxmail.com)

The development of ski areas would bring socio-economic benefits to mountain regions. At present, the ski industry in China is developing rapidly, and the number of ski areas is increasing dramatically. However, the understanding of the spatial pattern and driving factors for these ski areas is limited. This study collected detailed data about ski areas and their surrounding natural and economic factors in China. Criteria for classification of ski areas were proposed, and a total of 589 alpine ski areas in China were classified into three types: ski resorts for vacationing (va-ski resorts), ski areas for learning (le-ski areas) and ski parks to experience skiing (ex-ski parks), with proportions of 2.1%, 15.4% and 82.5%, respectively, which indicated that the Chinese ski industry was still dominated by small-sized ski areas. The overall spatial patterns of ski areas were clustered with a nearest neighbor indicator (NNI) of 0.424, in which ex-ski parks and le-ski areas exhibited clustered distributions with NNIs of 0.44 and 0.51, respectively, and va-ski resorts were randomly distributed with an NNI of 1.04. The theory and method of spatial autocorrelation were first used to analyze the spatial pattern and driving factors of ski areas. The results showed that ski areas in cities had a positive spatial autocorrelation with a Moran's index value of 0.25. The results of Local Indications of Spatial Association (LISA) showed that ski areas were mainly concentrated in 3 regions: the Beijing-centered Yanshan-Taihang Mountains and Shandong Hill areas, the Harbin-centered Changbai Mountain areas and the Urumqi-centered Tianshan-Altay Mountain areas. The first location was mainly driven by socio-economic factors, and the latter two locations were mainly driven by natural factors. Ski tourism in China still faces many challenges. The government sector should strengthen supervision, develop a ski industry alliance, and promote the healthy and sustainable development of the ski industry in the future.