

Combining GIS-based and psychology-based methods to understanding Urban Green and it's perception in Salzburg, Austria

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Abstract

Due to the rapidly growing population in the world's large urban areas, it is becoming increasingly essential to study determinants and influencing factors of Quality of Life (QoL), in order to incorporate findings and outcomes into future urban planning processes. Such QoL studies typically utilize either subjective (e.g. Michalos & Zumbo 1999; Sirgy et al. 2000; Turksever & Atalik 2001; McCrea et al. 2005) or objective indicators (e.g. Smith, 1972; Cutter, 1985; Blomquist et al. 1988; Stover & Leven, 1992; Cicerchia, 1999; Savageau, 2007), depending on the particular research aims and background. While GIS-based methods are particularly useful in evaluating objective indicators, in terms of spatially analyzing patterns and relationships, methods from the field of environmental psychology are commonly used in the elicitation and evaluation of subjective QoL, based on interview data (e.g. Marans, 2003; Keul et al. 2013). In this research, the evaluation of the objective and subjective dimensions is combined in regard to the QoL indicator of Urban Green, in particular, to evaluate the effects of objective green volume on the subjective perception of green for the case study area of Salzburg, Austria. In this sense, LiDAR data is used to analyze the height of the urban vegetation, and subsequently develop indices to quantify the relationship between the volume of buildings and the volume of vegetation. The statistical relationship between the resulting indices and the spatially contextualized subjective QoL perceptions of urban green are then determined, and compared to the relationship between the two-dimensional green index and the subjective perceptions. The results will indicate how the third dimension of the spatial indicator Urban Green impacts the subjective perceptions of the citizens, as compared to the standard QoL measure of two-dimensional vegetation coverage.

Keywords: Urban Green, Quality of Urban Life, Objective Indicators, Subjective Indicators, Inter-disciplinary Research

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