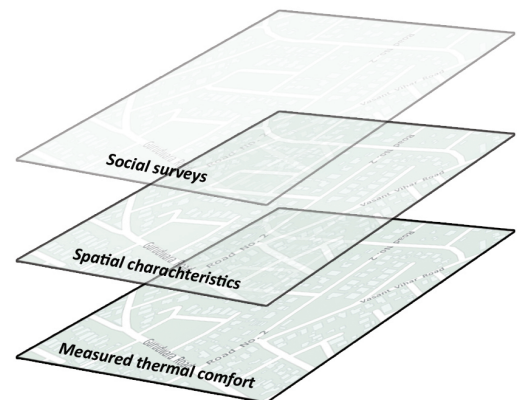


Cognitive Mapping for Outdoor Thermal Comfort in residential neighbourhoods of an Indian subtropical city

Increasing heat stress in the urban areas of developing countries like India, which lack strategically planned green areas, results into high levels of discomfort in the outdoor spaces during peak summer periods. The increasingly uncomfortable outdoor spaces and their subsequent use is related to the existing microclimatic conditions but also to the human behaviour of adaptation and perception to/of these existing conditions and the spatial variables defining the place.

Literature has illustrated similarity between the measured and perceived components of outdoor thermal comfort. Although, there have been studies which highlighted a disparity between the two and therefore, make it significant to examine both the components for a holistic overview of the outdoor thermal comfort.

Many qualitative methods have been implemented in the past to link and compare the two components of outdoor thermal comfort and mental or cognitive mapping is one of them but the results vary greatly with the spatio-climatic context. This study, therefore, aims at assessing the linkage and disparity between the measured and the perceived thermal comfort for an Indian city.



The main research questions to address the above stated aim shall be -

1. Which outdoor areas are un/comfortable according to the measured and simulated data?
2. Which outdoor areas have been listed as un/comfortable by the residents?
3. What is the correlation between the spatial variables of these areas and the measured and perceived comfort?

Background: Social surveys have been conducted in different residential neighbourhoods of Dehradun city in India to gather information related to short and long term thermal perception of outdoor thermal comfort of residents and field measurements have been conducted to gather the micrometeorological data. In this regard, cognitive mapping on GIS has to be undertaken to bridge the measured and perceived outdoor thermal comfort in relation to the spatial context.

Prerequisite: A good knowledge of GIS software

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