



## **The effect of background origin and gender on the thermal perceptions and adaptation in arid region, the case of Beer Sheva, Israel**

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Since the early 2000's, the bio-meteorological research tried to assess the city inhabitant perception of the outdoor thermal conditions aiming to expand the understanding for human thermal acclimatization and adaptation in different climatic zones. In this respect, limit number of studies did considered individual indirect factors such as origin of birth, ethnic, social, cultural, and their interacting with thermal perception in particular climate. These factors can have importance when examining adaptation of immigrants from cold regions to a hot and arid climate. The aims of this study are: (a) to investigate the role of non-thermal factors that are classified under the individual environment (gender, age group, exposure to sun, level of activity and clothing insulation, skin color) and the social environment (position, companionship and cultural background) and to further understand the relations between the social and personal environments and thermal perceptions.

This study examines the extent to which people with different past thermal history and cultural background systematically report different outdoor thermal sensations and thermal comfort patterns. The study was conducted in the city of Beer Sheva, which is located in the hot and arid climate of southern Israel. The population is estimated at 205,000, which includes 15,000 inhabitants whom immigrated since 2001, mainly from Eastern Europe. Climatic measurements were taken during different seasons (winter, spring and summer) between the years 2010-2015 in different location inside the city. A questionnaire survey of random passersby's was conducted during the field measurements, collecting 2,500 responses.

The findings show that in general the range of the neutral thermal sensation in arid zones is wider than in other climatic zones. From the gender perspective, females shows a higher sensitivity to cold thermal conditions, and people from an Eastern European cultural background showed a higher tolerance towards cold conditions and higher sensitivity to hot conditions in comparison to those whom are born and raised in the arid urban conditions.