Governance | Individual communication

IC - (21374) - A PSYCHOLOGICAL ASSESSMENT THROUGH A MOBILE APP FOR INVESTIGATING NBS IN URBAN TRANSFORMATIONS

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Background and objectives

Citizens' participation is nowadays pivotal to urban planning processes. Co-design practices, indeed, foster a fruitful dialogue and negotiation between citizens, real estate developers, and public administrations, thus reducing the social and psychological risks associated with urban transformations.

Process and methods (for empirical research)

We present the Experiential Environmental Impact Assessment method (exp-EIA©), integrated into a web and mobile app (https://citysense.fr/en/) supporting the participatory approach. It enables the simulation of prospective environmental transformations through Augmented Reality (AR) and Virtual Reality (VR), and the assessment of related subjective experience. Unlike other existing tools, the environmental (e.g., physical exploration behavior, color features) and subjective data (e.g., emotions, 2 items based on Self-Assessment Manikin; restoration, 4 items on a 5-points Likert scale; prefigured activities, one multiple-choice item) are combined. Two case studies are investigated: 1) a design project including NBS in Milan (Italy) (by Covivio and CRA), including a new building and its surroundings, explored in AR (N=63); 2) an urban park in Atlanta (Georgia, USA) (by Atlanta Beltline), including a passive and an active/recreational area, explored in VR (N=46).

Main results (or main arguments in the case of critical reviews)

The results show:

1- Participants' exploration behavior, including preferred points of view and related isovists on a map;

2- The emotions, restoration and prefigured activities associated to the points of view, represented on a map;

3- The correlation between emotions (pleasure factor) and colors, in particular both lightness and lime tone;

4- The consistency between design goals and subjective environmental experience.

Implications for research and practice/policy | Importance and originality of the contribution

The presented method integrates an effective engagement tool for presenting design solutions to citizens and an innovative analysis for collected data. The cartographic representation (patented) makes the psychological geography of the place immediately accessible for experts and laypeople, favoring the integration of subjective and environmental goals when integrating NBS in the urban context.

Palavras-chave : emotions, restoration, co-design, virtual reality, augmented reality, biophilic design