ERGOCITY APP: PILOT MOBILE APPLICATION FOR REAL-TIME MEASUREMENT OF ERGONOMIC DEFICIENCIES IN PUBLIC SPACE

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FAU RESEARCH PROJECT - RESEARCH BY DESIGN
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INTRODUCTION

The UN has aimed to move towards more inclusive, safe, resilient and sustainable cities and human settlements as one of the key aspects that must be included in local agendas to move towards a more sustainable development by 2030 (UN, 2018).

The urban ergonomics model raises the need to discover the interests of the inhabitants to improve the quality of urban life, and thus, incorporate the human dimension in the design of urban plans, projects and policies (Silva, 2019).

The project is based on the use of Information and Communication Technologies (ICT), which present a greater technical evolution every day, enabling the development of specific tools, in this case Apps for mobile devices that provide solutions to problems of public spaces, regarding their accessibility and knowledge for all citizens (Biere & Arellano, 2017).

METODOLOGY

Stage 1 Review of the Ergo-City conceptual model. Synthesis of criteria and user requirements.

Stage 2 Pilot development of the App with iterative tests and modifications, with users in real time.

Stage 3 Presentation of the App and its use mode, working with real cases in the Municipality of Cerro Navia, Santiago of Chile.

The main objective was to generate a pilot system for capturing information on public space in real time, which allows identifying and describing those factors that negatively affect the assessment and perceived comfort, generating information through spatial and perceptual indicators based on in the Urban Ergo approach.

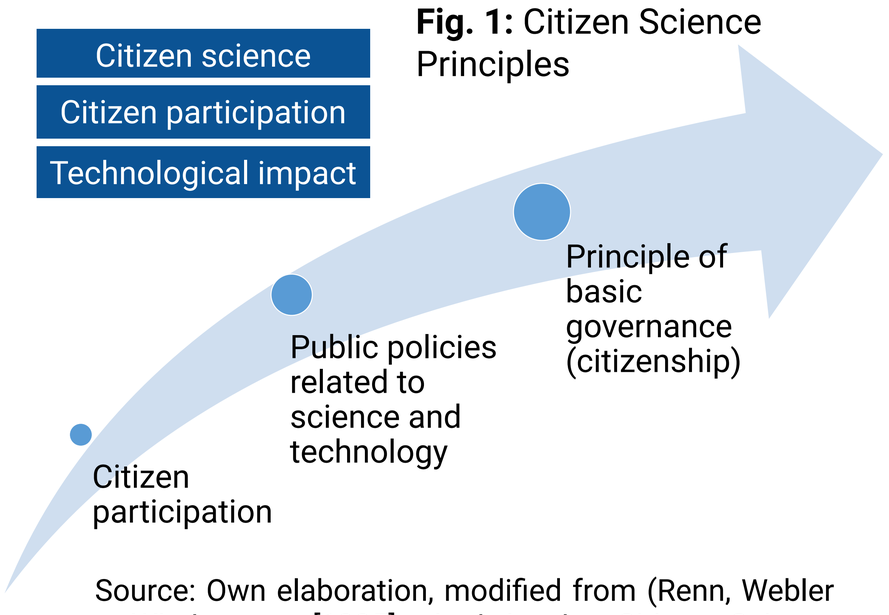
RESULTS

1. DESIGN OF A CITIZEN SCIENCE EXPERIENCE: ERGO-CITY APP

The importance of having accessible environments and their in-depth knowledge, for a correct detection of existing problems and their subsequent adaptation, are some of the motivations on which the Ergo-City App project is based.

For that purpose, it was proposed to develop a pilot mobile application (app), where observations, suggestions, criticisms and / or proposals are integrated to improve public spaces, mainly the walkability states of a specific urban area in real time, in this case in the commune of Cerro Navia, City of Santiago, Chile.

Fig. 1: Citizen Science Principles



Source: Own elaboration, modified from (Renn, Webler y Wiedemann [1995] cited in the Citizen Science Foundation, 2017).

Effective participation: the characteristics of this system basically consist in allowing users who move through public space to be able to register (photographic capture) by georeferencing (using the cell phone's GPS system) the deficiencies present, categorizing them and communicating them to their local government.

Fig. 2: Ergo-city App Pilot Design

2. DESIGN AND APPLICATION CRITERIA:

Infrastructure	Evaluates deterioration, inadequate design, and / or lack of infrastructure in public space.
Accesibility	Evaluates the lack of elements and equipment of universal accessibility.
Comfort	Evaluates the environmental conditions of the surroundings.
Safeness	Evaluates the safeness perceived by people, as well as the lack or presence of unsafe elements.
Use of the space	Evaluates the state and conditions of public spaces and their uses.

Fig. 3: App Categories

DISCUSSION

If the construction of cities and their public spaces do not provide sufficient parameters to provide a perception of well-being and comfort to people, the consequences will be a continuous adaptation to the world as it has been built (Silva, 2017).

In this way, the urban ergonomics approach proposes an appropriate scale of analysis for people, which brings their aspirations and activities closer to the design of the public spaces in which they operate (Silva, 2019).

In Citizen Science projects, the inhabitants play a role in the production of knowledge in regards to the territories, contributing mainly to the appropriation of public space, and raising awareness about its care, improvement and recovery, through participation in the research project.

In this sense, the Ergo-city App is an approach to citizen participation in the construction of public spaces through mobile technologies, which requires a larger-scale insertion, as well as comparative studies between regions or countries.

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