

# Engaging the Crowd: Lessons for Outreach and Tool Design From a Creative Online Participatory Study

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## ABSTRACT

In this article, the challenges of realising e-participatory projects in urban planning are described. A participatory case study in Singapore serves as the basis for their presented conclusions. The researchers used a map-based e-participation tool to collect design proposals from participants for the planning site. The user feedback for the tool interface and the study campaign's website together with designer expertise on user interfaces (UI) was incorporated into the redesign of the website and interface of the participatory design tool. From there, some general guidelines for conducting engagement studies and for designing participatory design tool interfaces for non-expert users were formulated. One key finding is that the information presented to the non-expert user must be concise, and the UI must be adapted to the user's habits and focus the user's attention towards completing the study.

## KEYWORDS

Citizen Design Science, Creative Crowdsourcing, Participatory Design, Tool Design, User Interface Design

## 1. INTRODUCTION

Technologies that serve the public - known as civic technologies – have promised the inclusion of more citizen-inclusive planning strategies as part of urban governance. In the literature, these tools are usually considered for their functionality but not in the context of the entire participation process and interface design (Hasler et al., 2017). In this paper, we address the question of how to encourage citizens to use online participation tools and identify the level of willingness for citizens to use them. We describe the requirements for a good online participation platform and a user interface of the tool.

The case study that was carried out uses a map-based e-participation tool to collect design proposals which participants could create through an interactive user interface (Mueller et al., 2018). We describe how we engaged citizens to participate in a project where they used an online participatory design tool on a website and explain how the user interface (UI) of the website and the online participatory design tool was redesigned to improve the usability for users who are non-experts, or who are not as digitally savvy. The tool is used in a government-to-citizen participation

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mode, albeit our aims are research-focused (Linders, 2012). We will describe the challenges of the outreach in that context rather than conducting a strict proof-of-concept analysis.

We begin by providing a short review of the modern concepts for participation in urban planning and look at existing principles for web and tool design. The following section describes and justifies the study design and the campaign website. We then introduce the functions of the online participatory design tool used during the study and describe the initial UI. The results contain user feedback on the website and tool, and the process used to redesign both interfaces. At the end of this paper, we generalise our findings by formulating guidelines for the design of participatory studies and the UI for participation tools in urban planning.

## 2. LITERATURE REVIEW

Citizen participation has been proven to be a feasible and an important instrument in the urban planning process. Creative and innovative approaches, in particular, tend to enhance community participation (Cilliers et al., 2011). The theory and practice of engagement tools for urban planning, such as workshops and town-hall meetings, have been broadly discussed among scholars (Wates, 2014; Nanz & Leggewie, 2016) and the various forms of e-participation (Wilson et al., 2017; Kleinhans et al., 2015) and digital participatory tools have already been described in multiple studies. Most tools can be used for face-to-face and online participation and approaches have been developed in tandem with the use of such tools, which differ from traditional engagement methods. Stelzle and Noennig (2017) have developed a database of how tools have been implemented in the planning process. The typical categorisation of methods into information, consultation, collaboration and empowerment is based on Arnstein's ladder of participation (Arnstein, 1969). Our study uses a tool that consults citizens on their preferences for issues related to urban planning through micro-design tasks.

All participatory projects, regardless of the form or medium, must fulfil particular requirements for it to be considered a success. Stiftung Zukunft Berlin, the organisers of several participation projects in Berlin, have formulated five principles for satisfying participatory planning (Heuser et al., 2018):

1. The government and the citizens genuinely want civic co-responsibility;
2. It should be clear which parameters are negotiable;
3. The choice of representatives of each stakeholder must be justified;
4. The engagement process must be suitable and transparent and its management neutral;
5. Citizens need to stay involved after the engagement is finished.

If the engagement campaign is organised by an authority, the points 1, 3 and 5 can be ensured. In our case, we can only guarantee the 2nd and 4th principles by communicating to participants the study process and programming building restrictions into the tool (E.g. The Urban Redevelopment Authority (URA) stipulates a maximum building height of 160 metres).

The fifth and final principle on the list should not be underestimated as it is critical for showing how impactful the decisions of the participants are. Being able to show immediate benefits has been proven to be helpful for increasing participation (Kersten et al., 2015). As participants will not directly benefit from their participation in such studies, it is important to inform them that they have a say, and that they can influence the project outcome. Keeping citizens updated post-engagement is therefore important to sustaining participant motivation.

Kahila-Tani et. al. (2016) and Brown (2014) used the five characteristics by Rowe and Fewer (2000) to assess their own PPGIS studies. One of their conclusions is that planners need more support in the design of a participation process. The description of best practices examples is suggested to support planners in practice (Kahila-Tani et al., 2016; Kahila, 2013). While in academia conducting outreach is usually not a priority and rarely discussed in the literature, it is essential to

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