

# Visualization of participatory mapping outcomes: a review of contemporary methods

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**Keywords:** participatory mapping, participation, visualization, heat maps

## Abstract:

Participatory mapping is a way of spatial data collection when the public is involved and new and potentially interesting information is obtained. The local spatial knowledge and place values are two important features collected by participatory mapping. The participatory methods used in research conducted in the countries of Global North and Global South differ. Participatory mapping approaches used in Global North are usually web-based applications or utilize GIS in a way.

This paper is focused on visualization of outcomes derived from participatory mapping data collection in Global North, mainly on web applications and questionnaires. Although the visualization is usually strongly related to the method of data collection, this research focuses on the visual presentation of results (for example point clusters, overlapping polygons, fishnet, hexagon net, heat maps or combination of methods). Although these are common visualization methods, very few papers have been devoted to their systematic analysis.

The overview of visualization methods is based on a systematic review. The papers found on Web of Science, Scopus and other resources such as theses.cz (repository of final theses defended at Czech universities) are taken into account. The searched keywords are participatory mapping, participatory GIS, PGIS, public participation GIS, PPGIS, participation and Boolean combinations of these words. The concept of snowball is also used. Only papers published in 2012-2022 are selected.

From the search results, only articles focused on participatory mapping in Global North are selected and also only those with a map representation of the outcome. These papers are analyzed. The analysis reveals the most commonly used methods of visualization in the last 10 years. The methods are then evaluated by their parameters as colour, size of diagrams, width and height of grid, radius of heat map and other.

The main goal of this paper is to identify main visualization methods used in participatory mapping, their strengths and weaknesses and compare them with methods used in modern thematic cartography.