

# The generalized center optimal location

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## **Abstract**

Center optimal location is a common issue in spatial optimization, which deals with facilities and sets of demands. It covers different crossed scientific fields including geography, economy and spatial econometry, computer science, transport science, operations research. Choosing a metric to fix a center is neither trivial nor neutral in the final function and objective of the center. We first provides a generalization of optimal center location in continuous and isotropic space, extended in a second step to road networks, using sensitivity analysis and Minkowski distance (L<sub>p</sub>-norm). It enhances different properties and compromises in optimal location mixing equity, equality and efficiency purposes, depending on the L<sub>p</sub>-norm and the center objective. Then the presentation extends to robustness in spatial analysis in general, including multicriteria and sensitivity analysis, within a use-centered approach.