

Social choice: locating public facilities & voting in a large electorate

Citation for published version (APA):

Chatterjee, S. (2017). *Social choice: locating public facilities & voting in a large electorate: two location problems and a voting problem*. Datawyse / Universitaire Pers Maastricht. <https://doi.org/10.26481/dis.20170920sc>

Document status and date:

Published: 01/01/2017

DOI:

[10.26481/dis.20170920sc](https://doi.org/10.26481/dis.20170920sc)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

STELLINGEN

ACCOMPANYING THE THESIS

SOCIAL CHOICE: LOCATING PUBLIC FACILITIES & VOTING IN A LARGE ELECTORATE

BY

SWARNENDU CHATTERJEE

1. In locating a public good on a sphere, if we apply the coordinatewise median voter rule based on Euclidean coordinates, then the median could be at the center of the sphere. (Chapter 2)
2. Without Maskin monotonicity or double uncompromisingness the description of the class of rules is technically very complex and hard to comprehend. (Chapter 3)
3. Outcomes of a Pareto optimal social choice rule belong to the convex hull of the peaks. (Chapter 3)
4. For a Pareto optimal outcome the following situation cannot happen. There are two non-empty complementary subsets of peaks (strictly) separated by a channel, where a channel is a pair of parallel lines going through the chosen (two distinct) locations and perpendicular to the line segment joining the chosen locations. In case, the chosen locations are not distinct, a channel is any straight line going through the location and separating the subsets of peaks. (Chapter 3)
5. Even if we allow for intransitive preferences of the agents, Theorem 4.1 remains true for voting with three candidates. (Chapter 4)
6. The main question of Social Choice Theory is: Given a group of individuals confronted with some choice, in what manner should a central authority join the individual opinions in order to best mirror the “will of the group”?
7. Social Choice Theory uses extensive mathematics in order to develop and analyse a theoretical model that captures economic/social scenarios.
8. We are often sure that something is true well before we have a rigorous proof for it (this happens particularly often in geometry).

9. In real life applications of the results in chapter three, it is important to first convince the social planner that the conditions imposed on the rule are desirable.