

The Sociometric Method Techniques of Social Research and Measurement

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1. Introduction

Every group, however small or informal, possesses an inner structure of attraction, indifference, and repulsion that does not always coincide with its formal or official organisation. A classroom has a seating chart drawn up by the teacher, but it also has an invisible chart of friendships, rivalries, and cliques drawn up by the students themselves. The sociometric method is the technique devised to bring this informal, affective structure into the open and to represent it in a form that can be described, measured, and compared. It occupies a distinctive place among the tools of social research because it does not merely ask what people think or believe in the abstract; it asks whom they choose, whom they avoid, and why, thereby mapping the actual pattern of interpersonal relations within a defined group.

2. Origin and Meaning

The method is associated principally with the Austrian-American psychiatrist Jacob Levy Moreno, who introduced it in the 1930s as part of a broader project he called sociometry — literally, the measurement (metron) of companionship or the social (socius). Moreno's early demonstration of the method's power came from his study of runaways at the New York State Training School for Girls at Hudson, where he showed that patterns of mutual attraction and rejection among the inmates, invisible to the institution's formal records, could account for behaviour that the official disciplinary structure could not explain. His major work, *Who Shall Survive?* (1934), remains the foundational text of the field.

Sociometry, in Moreno's conception, rested on the premise that the choices individuals make about with whom they wish to work, play, sit, or live are not random or trivial but form a describable structure — the group's “sociometric matrix” — and that this structure has real consequences for morale, productivity, and conformity. The sociometric method is thus the operational technique by which this structure is elicited and mapped; sociometry is the wider field of study built upon it.

3. Definition

The sociometric method may be defined as a technique for discovering, describing, and evaluating social status, structure, and development through measuring the extent of acceptance or rejection between individuals in a group. George A. Lundberg described it as a method for the quantitative study of interpersonal relations. Operationally, it consists of asking each member of a group to name, in order of preference, the persons with whom he or she would like to associate for some specified activity, and the persons he or she would prefer to avoid. The resulting choices are then tabulated and represented graphically or numerically.

4. Basic Procedure: The Sociometric Test

The instrument through which data are collected is called a sociometric test. Its administration typically follows a sequence of steps.

- 1 **Defining the group.** The boundary of the group to be studied must be fixed precisely — a classroom, a work-team, a residential ward — since choices are meaningful only within a bounded universe of possible choices.
- 2 **Framing the criterion.** A specific, realistic criterion of choice is put to each member, such as “with whom would you like to sit during the examination?” or “whom would you choose as a partner for the project?” Vague criteria such as “whom do you like?” yield weaker and less comparable data than criteria tied to a concrete, shared activity.
- 3 **Eliciting choices and rejections.** Each respondent is asked to name a fixed or unlimited number of persons, in order of preference, whom he would choose, and, in many designs, persons he would reject or avoid, for the given activity.
- 4 **Tabulation.** The choices are entered into a sociomatrix, a square table with the names of all members listed both as rows and as columns, so that the choices made and received by every individual can be read off directly.
- 5 **Graphic representation.** The tabulated data are converted into a sociogram, a diagram in which individuals are represented as points and choices as directed lines connecting them, so that clusters, isolates, and mutual pairs become visible at a glance.

5. The Sociomatrix

The sociomatrix is the numerical backbone of the method. Rows conventionally represent the person choosing and columns the person chosen; a mark or a rank number in a cell indicates that the row person has chosen the column person. Reading down a column gives the total number of choices received by an individual — a simple but powerful index of that person's popularity or social status within the group. Reading across a row shows the pattern of an individual's own choices. A simplified illustrative matrix for a five-member group, where each person names one first choice, might appear as follows.

Chooser \ Chosen	A	B	C	D	E
A	—	1			
B	1	—			
C		1	—		
D		1		—	
E		1			—
Choices received	1	4	0	0	0

In this illustration, B receives four of the five choices made in the group and would be identified as the “star” of the group, while C, D, and E receive none and would be classed as isolates. Such a matrix, extended to include mutual choices, rejections, and successive preference ranks, forms the basis for the numerical indices discussed below.

6. Key Concepts and Indices

- **Sociogram:** A graphic map of the choices within a group, using symbols (commonly circles for females, triangles for males) connected by arrows indicating the direction of choice or rejection, and by a double-headed or reciprocal line where a choice is mutual.
- **Star:** An individual who receives a disproportionately large number of choices and thus occupies a position of high social attraction or leadership potential within the group.
- **Isolate:** An individual who receives no choices at all from other members, indicating social neglect or withdrawal.
- **Neglectee and rejectee:** A neglectee receives few or no choices without necessarily being disliked, whereas a rejectee is actively named by others as someone to be avoided.
- **Mutual pair (dyad):** Two individuals who choose each other, representing a reciprocated relationship and the smallest unit of group cohesion.
- **Clique:** A cluster of individuals who choose predominantly among themselves and rarely reach out to, or are chosen by, members outside the cluster.
- **Chain:** A linear sequence of choices in which A chooses B, B chooses C, C chooses D, and so on, without closing back upon itself.
- **Social status / choice status index:** A quantitative measure, usually computed as the number of choices received by an individual divided by the number of persons available to choose him ($n \square 1$), allowing comparison of standing across groups of different sizes.
- **Cohesion index:** A group-level measure, typically the proportion of mutual choices to the total possible number of pairs, indicating the overall degree of group integration.

7. Variants of the Sociometric Test

Several refinements of the basic technique have been developed to suit different research purposes.

- 1 **“Guess-who” technique.** Members are given brief behavioural descriptions (for example, “someone who is always ready to help others”) and asked to name the group member each description best fits, yielding a reputational rather than a purely preferential map.
- 2 **Sociometric ranking.** Instead of naming a limited number of persons, each member ranks every other member of the group from most to least preferred, producing a complete rank-order matrix.
- 3 **Rating scale (“Roster-and-rating”) method.** Each member rates every other member on a numerical scale (for instance, one to five) for a given criterion, avoiding the limitation of forced choice and permitting finer statistical treatment.
- 4 **Perceived sociometric test.** Individuals are asked to predict who will choose them, and the accuracy of this perception is then compared against the actual choices received, throwing light on self-perception and social insight.

8. Uses and Applications

The sociometric method has found application well beyond Moreno's original clinical and correctional settings.

- In education, to identify isolated or rejected children early, to guide the composition of classroom seating and project groups, and to study the social climate of a class.
- In industry and management, to understand informal work-group structures, identify natural leaders, and reconstitute teams to improve cohesion and productivity.
- In military and institutional settings, to allocate personnel to units in ways that minimise friction and maximise morale.
- In community studies, to trace the diffusion of influence, opinion leadership, and communication networks within a locality.
- In clinical and correctional psychology, to diagnose problems of social adjustment among patients, delinquents, or institutionalised persons, continuing the tradition of Moreno's own Hudson study.

9. Merits of the Method

- It is simple, economical, and quick to administer, requiring no elaborate apparatus.
- It yields data on actual, felt relationships rather than on abstract attitudes, giving it strong face validity for studying group dynamics.
- The sociogram translates numerical data into a visual form that is immediately intelligible even to non-specialists such as teachers or managers.
- It is flexible and can be adapted, through its variants, to almost any bounded group and almost any criterion of association.
- It permits comparison across time, so that the effect of an intervention — a change of seating, a change of supervisor — on group structure can be assessed by repeating the test.

10. Limitations of the Method

- Choices are situational and criterion-specific; a person chosen as a study partner may not be chosen as a recreational companion, so no single test can claim to map the “whole” social structure of a group.
- Responses are not stable over time, particularly among children, and repeated testing may itself alter relationships by making private preferences public.
- The method depends on the honesty and comfort of respondents; fear of exposure or of offending others can distort answers, especially where anonymity cannot be guaranteed.
- It is best suited to small, face-to-face groups whose members already know one another reasonably well; it loses meaning in large, anonymous, or newly formed groups.
- It describes structure at a given moment but does not, by itself, explain why particular choices are made; it must be supplemented by interviews, observation, or other qualitative methods to interpret the underlying reasons.
- Ethical questions arise from asking individuals, especially children, to name persons they reject or dislike, and results must be handled with confidentiality and care so as not to reinforce a rejected person's marginal status.



11. Conclusion

The sociometric method endures as one of the most economical instruments available to the social researcher for converting an informal, felt structure of liking and disliking into a form that can be seen, counted, and compared. Its value lies not in replacing other methods of studying group life but in complementing them: where participant observation and the interview reveal the texture and meaning of relationships, the sociogram and the sociomatrix reveal their shape. Used with appropriate ethical caution and combined with other qualitative and quantitative tools, the sociometric method continues to serve education, industry, community studies, and clinical practice much as Moreno intended when he first set out to measure the invisible geometry of human association.