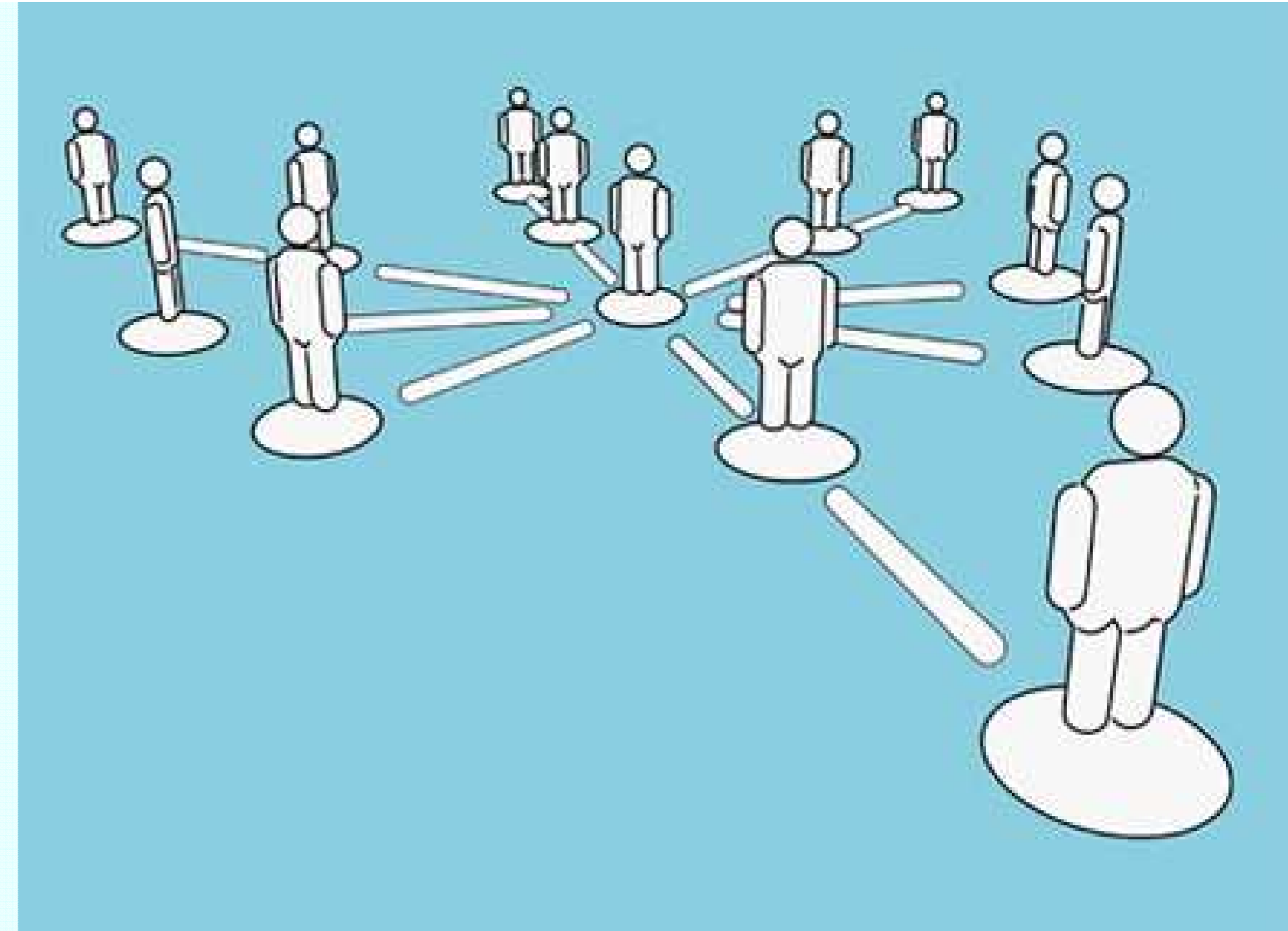


Eliciting Social Network Data

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source: www.marsound.com/social_network.jpg

Introduction

Recently the awareness has emerged that many transportation related decisions of individuals are directly and indirectly influenced by other people, the persons belonging to their social network. Hence, it is argued that by studying the social networks of individuals we will be better able to understand travel behavior. However, there is not much experience with collecting social network data in the transportation field yet.

Aim paper

This paper provides an overview of network elicitation techniques, mostly developed and applied in other fields of research, especially in sociology. The pros and cons of these elicitation approaches will be discussed.

Social networks and travel

Social networks influence travel related decisions of individuals in different ways, for example:

- Maintaining the social network, hence visiting members, results in travel.
- Members exchange information by which individuals learn about new travel alternatives (e.g. modes and destinations).
- Members exchange opinions that may affect perceptions, preferences and attitudes, which may affect the adoption of new technology or modes and programs that intend to change travel behavior.
- Members may facilitate travel: lending transport vehicles or ride-sharing or by taking over certain activities, like taking care of children or animals or watching the house.

Name generators for ego-centered social networks

Ego-centered networks involves that data are collected of a sample of individuals (*egos*) on the persons with whom they have relationships (*alters*). The ego is the sole informant on characteristics of the social network members, their characteristics and the ego-alter relationship. Van der Poel (1993) distinguishes four approaches:

1 Interaction approach

This approach asks people to keep a record of all contacts they have during a certain period of time. This is done by recalling all the contacts of the last week or another specified period of time or by filling out contact diaries for a specified period of time.

Advantage: contact or interaction can be clearly defined (e.g. 'talking to each other face to face')

Disadvantage: the content of relationship is not taking into account, which probably elicits too many relations that are not relevant for travel related behavior.

2 Role approach

The approach requests ego to name all alters of a particular chosen role, such as close kin, neighbor or friend.

Advantage: pure businesslike contacts can be easily excluded.

Disadvantage: First, not all people with a certain role are relevant for travel, hence too many persons are elicited. Second, some roles, like friends, have different meanings in different cultures. Third, persons relevant for travel may be overlooked.

3 Affective approach

Egos are asked to name the persons with whom they have a close personal relationship (Wellman 1979, Carrasco et al. 2008) or the ones who are especially important to them (Kahn and Antonucci 1980).

Advantage: The importance of the relationship is directly determined by ego. This elicits the core network.

Disadvantage: First, different people may use different criteria for importance, hence, networks may be difficult to compare across ego's. Second, less intimate relations are ignored, although they may be important for travel (e.g., in-law parents).

4 Exchange approach

In this approach the content of the relationships in terms of concrete transactions or flows of resources is used to elicit names. For examples: with whom do you: ...talk about personal worries,... engage in social activities, ...help with household tasks.

Advantage: As the actual content of the interactions is used as a delineation technique, this allows one to completely tailor the delineation method for a specific focus of ones' study.

Disadvantage: Many questions need to be asked, typically 10, although van der Poel (1993) proposed a compact 5 question instrument.

A comparison of results

Campbell and Lee (1991) compared the results of several famous network studies that applied different approaches:

- The affective approach and the one-question exchange approach (discuss important matters) elicit the core network: small, dense networks (+/- 5 persons), including many strong ties and relatives. More extensive exchange instrument elicits considerably larger networks (+/- 12 to 18 persons), with lower densities and including more weak ties.
- Less differences are found with respect to composition of networks with respect to socio-demographic variables (e.g., same sex, education).

Name interpreters

This involves questions on socio-demographic characteristics of each alter (e.g. gender, age), formal roles ('in which way you know ...'), frequency and type of contacts (face-to-face, telephone, internet), and travel related questions (distance, travel time, etc.), strength of tie, density of network, etc. Ideally, one would include more questions on travel related issues, like, for example, usually chosen transport mode, departure time, traveled route, travel party, joint social activity participation. However, providing this information on all network members may result in respondent burden.

Conclusions

- In this paper, we have discussed the pros and cons of different ways of eliciting social networks and that these generate different degrees and kind of biases. It is important to keep this in mind when designing a social network elicitation survey.
- It should be emphasized however that the results are based on the general properties of the various elicitation methods and results obtained in other application domains.
- Therefore, systematic comparative methodological research in the travel domain is urgently required to provide empirical evidence on the usefulness of different elicitation techniques.