

COLLECTING DYNAMICS AND SOCIAL EXCLUSION IN PERSONAL NETWORKS

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INTRODUCTION AND OBJECTIVES

The role of transport on social networks is an expanding research, given the need of understanding not only the characteristics of social trip purposes, but also their implications for quality of life. In this context, two key aspects have been scarcely studied empirically: the relationship between personal networks and social exclusion, and the evolution of social networks over time. This paper reports a new data collection effort which captures i) the dynamics of personal networks on a two-period setting, and ii) the relationship between transport related social exclusion and personal networks.

The data is collected in Concepción, Chile, targeting the same 240 individuals who participated in a similar effort in the year 2008 (Carrasco et al., 2008). Both instruments share a same core set of modules, remarkably a name generator and interpreter, which collect information about the spatiality and temporality of personal networks, providing insights about the relationship between social, temporal, and physical spaces. In this way, the physical and temporal patterns of interactions, as well as the characteristics of social structures and their embedded travel, can be compared between the two time frames, proving insights about dynamics on these processes. In addition, the instrument explicitly links personal networks characteristics with social exclusion indicators, both objective and subjective. Objective social exclusion indicators capture the relationship among aspects such as communication and transport available modes, access to land use, and personal networks maintenance. Subjective social exclusion indicators capture the previous aspects in the context of personality traits, such as extroversion and openness, as well as the individual's perception of the inability to participate in activities and interact with others

PREVIOUS EXPERIENCES AND THEORETICAL SOURCES

The data collection is based on a number of previous studies related with the issue of personal networks, travel demand, and social exclusion. We expose briefly the key theoretical underpinnings and previous experiences related with the instrument employed.

Social networks and travel behaviour

The name generator – used to elicit the members of the respondent’s personal networks – is based on the work in Canada reported in Carrasco *et al.* (2008) and Hogan *et al.* (2007). This research inspired other similar data collection efforts in the Netherlands, Switzerland, and Chile (Kowald *et al.*, 2012), as well as United Kingdom (Riley, 2011). Overall, this literature has put emphasis on the need of understanding and modelling the temporal and spatial characteristics of personal networks, in relation with activity-travel behaviour (e.g., Carrasco and Miller, 2006).

However, all current work of personal networks in the travel behaviour research field is static, that is, there is no data that has collected longitudinal information about their participants’ contacts and their spatiality and temporality contrasting with the increasingly large experience in Sociology and other related fields (see, for example, Snijders and Doreian, 2010, and the references therein).

Social exclusion

Although recent discussions argue implicitly about the relationship between social networks, social capital, and social exclusion in the context of transport disadvantage (Cass *et al.*, 2005; Currie and Delbosc, 2010a; Currie and Delbosc, 2010b; Currie and Stanley, 2008; Levitas *et al.*, 2007; Lucas, 2012; Lyons, 2003; Stanley *et al.*, 2011), few empirical work has tackled this issue. An exception is Carrasco and Cid-Aguayo (2012), who link social support with car ownership. However, the broad range of aspects discussed in terms of the role of transport disadvantage in social exclusion (Lucas, 2012), and the relationship with social networks does not have enough empirical support within the transport research literature.

PRACTICAL ASPECTS

The data collection was performed in Concepción, Chile, between May 2012 and January 2013 and was performed in four neighbourhoods of the city, chosen according to income level and spatial closeness to the city’s CBD. Table 1 presents the sampling scheme, and the names of the selected neighbourhoods.

Table 1 – Sampling scheme - neighbourhoods

		Income Level	
		High	Low
Accessibility CBD	High	La Virgen Barrio Universitario	Agüita La Perdiz
	Low	Lomas San Sebastián Lomas San Andrés	Santa Sabina

A total of sixty respondents were interviewed in each neighbourhood. Priority was given to those respondents who participated in the 2008 wave. Figure 1 presents the number of respondents who agreed on participating again on the data collection effort (“Re-contacted”) and the number of respondents who were contacted for the first time in this wave (“Replacements”). The total attrition rate between waves was of a 44%, which heavily varied between neighbourhoods in a range of 67% to 30%. Respondents from lower income neighbourhoods were more likely to participate than their richer counterparts, and respondents closer to the CBD than those further, all else equal. Respondent “replacements” were selected through a stratified random procedure which allowed demographics to be reasonably diverse in age, gender, and occupational status, considering Census figures.

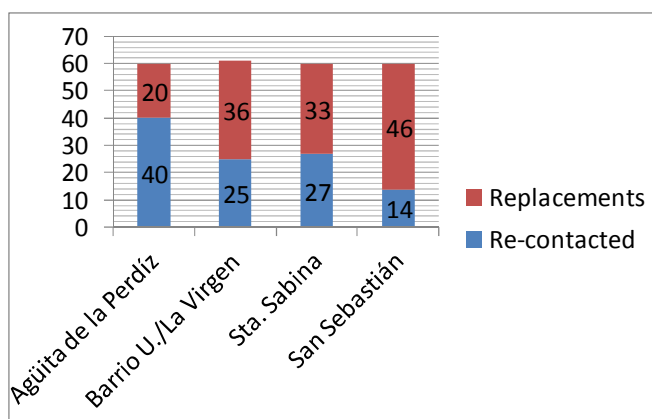


Figure 1 – Replacements and re-contacted people in the sample

The instrument was collected by Sociologist students, who contacted the potential participants using the criteria explained before, offering a gift card incentive of Chilean Pesos \$5000 (equivalent to US Dollars \$10.6). The interview average duration was about 90 minutes, although all interviews had duration in the range of 60-120 minutes. Most of them were performed at the participants’ households, and 70% of them agreed to record it, as a double checking and control procedure.

SECTIONS OF THE INSTRUMENT

The instrument is composed by six sections, which are briefly described and discussed next.

Familiarization and general characteristics

This section includes personal socio-demographics (gender, age, household), household member characteristics, educational level, occupation, marital status, partner’s characteristics, and personal and family income levels.

Mobility and life history

In this section, current and previous places of residence are recorded, including aspects such as location, years of residence, and reasons to move.

Communication and transport

This section helps to build an inventory of telecommunications and transport tools. In particular, we collect information about access to cell phones (differentiating smart and non-smart phones), computer and internet, and cars. In addition, general questions about telephone and transport use are asked in order to get proxies regarding the respondents' physical and virtual mobility behaviour.

Transport barriers, life experience, and health

Knowledge and experience

The section begins collecting the self perception regarding knowledge and experience of transport barriers. In particular, the respondents are asked to assess whether they *know* the existence of specific activities that they could perform, and whether they actually perform (are *capable*) of performing those activities. In particular, five kinds of activities are differentiated: health, recreation, shopping and personal business, community, and socializing. Then, for example, in the case of health, the respondent is asked, first whether they *know* where there is a doctor or health facility they could go, and then, whether they actually *go* to those facilities.

Factors

Respondents are then asked about which factors they consider are an obstacle or barrier to perform three kinds of activities (separately): health, recreation and socialization, and shopping and personal business. Factors involve a diverse set of aspects, including:

1. Transport: Costs, travel time, frequency, safety, knowledge, availability, comfort, and need from others to use it)
2. Time use: Time availability to travel and to perform the activity, need of taking care young children
3. Context: Security and safety in origin and destination, poor infrastructure, lack of knowledge

Satisfaction and welfare

Using Likert scales, respondents were then asked to qualify their general satisfaction with life, using several instruments: SWLS (Satisfaction with Life Scale), PWI (Personal Well-being

Index), and PANAS (Positive and Negative Aspects). In addition, respondents were asked to answer psychological scales which measure personality using the “Big Five” Theory (John, 1990; John and Srivastava, 1999), measuring locus control and extroversion. To complement these self-perceived measures of well being as well as personalities, question regarding health status were included.

Social networks

Respondents were asked to elicit their personal networks, using the same name generator employed by Carrasco et al. (2008). After naming their close and somewhat close contacts, name interpreter questions asked about their spatial location, age, length of knowledge, roles with respect the ego, occupation, usual place of interaction, and frequency of interaction with the ego. In addition, the respondents answered questions about social support exchange with their personal network members (emotional, monetary, and transport related).

Time use

Finally, respondents were asked to name their activities of two days retrospectively (one weekday and one weekend), chosen randomly, similarly as how it was asked in 2008.

PRELIMINARY CONCLUSIONS

The data collection described in this paper adds experience about the role of social networks in travel behaviour, in the context of transport disadvantage. In addition, it adds potential insights to key policy issues regarding the role of transport in social networks dynamics and people’s exclusion to participate on activities.

NOTE FROM THE AUTHORS

As the data has been cleaned and processed only recently, no statistical descriptive could be presented in this paper. However, an updated version will be available soon in the website <http://www.udec.cl/docen/juancarrasco>

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REFERENCES

Carrasco, J.A., Cid-Aguayo, B. (2012) Network capital, social networks and travel: An empirical illustration from Concepcion, Chile. *Environment and Planning Part A* 44, 1066-1084.

- Carrasco, J.A., Hogan, B., Wellman, B., Miller, E.J. (2008) Collecting social network data to study social activity-travel behaviour: An egocentred approach. *Environment and Planning B* 35, 961-980.
- Carrasco, J.A., Miller, E.J. (2006) Exploring the propensity to perform social activities: A social networks approach. *Transportation* 33, 463-480.
- Cass, N., Shove, E., Urry, J. (2005) Social exclusion, mobility and access. *Sociological Review* 53, 539-555.
- Currie, G., Delbosc (2010a) Quantifying links between time poverty, well-being and social exclusion. *Proceedings of 89th Annual Meeting of the Transportation Research Board*, January 10-14, 2010, Washington D.C.
- Currie, G., Delbosc, A. (2010b) Modelling the social and psychological impacts of transport disadvantage. *Transportation* 37, 953-966.
- Currie, G., Stanley, J. (2008) Investigating links between social capital and public transport. *Transport Reviews* 28, 529-547.
- Hogan, B., Carrasco, J.A., Wellman, B. (2007) Visualizing Personal Networks: Working with Participant-Aided Sociograms. *Field Methods* 19, 116-144.
- John, O. (1990) The "Big Five" Factor Taxonomy: Dimensions of Personality in the Natural Language and in Questionnaires. *Handbook of Personality: Theory and Research* ed Pervin, L. The Guilford Press, New York, London.
- John, O., Srivastava, S. (1999) The Big Five Trait Taxonomy: History, Measurement, and Theoretical Perspective. *Handbook of Personality: Theory and Research* eds Pervin, L., John, O. Second ed. The Guilford Press, New York, London.
- Kowald, M., van den Berg, P., Frei, A., Carrasco, J.A., Arentze, T., Axhausen, K., Mok, D., Timmermans, H., Wellman, B. (2012) The Spatiality of Personal Networks in Four Countries: A Comparative Study. *13th International Conference on Travel Behaviour Research*, Toronto, 15-20 July 2012.
- Cabinet Office (2007) *The multidimensional analysis of social exclusion*. Cabinet Office. Reino Unido. London, UK.
- Lucas, K. (2012) Transport and social exclusion: where are we now? *Transport Policy* 20, 105-113.
- Lyons, G. (2003) The introduction of social exclusion into the field of travel behaviour. *Transport Policy* 10, 339-342.
- Riley, T. (2011) An examination of how travellers react to uncertainty caused by extreme weather conditions: Integrating social network analysis and discrete choice models. *International Workshop Frontiers in Transportation*. Niagara-on-the-Lake, Canada. October 20-22, 2011
- Snijders, T., Doreian, P. (2010) Introduction to the special issue on network dynamics. *Social Networks* 32, 1-3.
- Stanley, J.K., Hensher, D.A., Stanley, J.R., Vella-Brodrick, D. (2011) Mobility, social exclusion and well-being: Exploring the links. *Transportation Research Part A* 45, 789-801.