Extracting domestic tourism trips from mobile phone data and exploring the use of mobile phones during trips

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Résumé

The ubiquitous aspect of mobile phones in everyday life has opened a many opportunities to investigate and understand the relation between actors, space and technology. In this paper we examine the potential of mobile phone data, like captured in call detail record data (CDR data), to empirically study this intertwining of dimensions in society for a specific case of mobility: domestic tourism.

In a first phase, we explore how to extract domestic tourism movements (as one aspect of mobility in space) from CDR data. We focus on the logs of 5 months of phone activity for 69.000 users in the 33 largest cities of France. We show the workings of a stand-alone algorithm to extract long distance movements and discuss the interpretative choices one has to make to arrive at an interpretation of these long-distance movements as being 'domestic tourism'. Specifically, we discuss how interactive expert validation led to determine parameters and assess the sensitivity of the algorithm to automate such an annotation task. The results of the analysis are the detection of more than 18.000 tourism trips, leading to a wide scale estimation of touristic fluxes within France and thus a picture of long distance mobility with a specific purpose which would be very difficult costly to obtain by classical data sources like surveys and questionnaires.

In a second phase, we engage in the exploration of mobile phone usage during holiday periods. We focus on the temporal activity pattern of users and most importantly, on the relation to their social network. How does the activation of the social network alter during holiday periods? Which peers depict similar patterns in mobile phone usage, or even mobility patterns? And what are the boundaries of investigating and interpreting such information based on mobile phone data solely?
All of the aforementioned analysis embeds in a very 'data-science' approach for starting to make sense of the captured elements of human behaviour trough technology. Findings, therefore, will be presented merely as empirical results, lacking any theoretical framework, but capable of provoking new ideas, questions and discussions as a contribution to the conference.

Mots-Clés: Mobile Phone Data, Algorithm Development, Domestic Tourism, Social Networks

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