

Summary

Tracking mobility through mobile phones. What do the citizens think?

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People leave digital tracks every day as they travel in the city, especially in the form of signals and registrations from the mobile phone. This report shows that there is a certain acceptance among the population in Oslo and Tallinn for such data to be used to combat crime and terror and to improve transport. However, more than half of the population believes that mobility tracking via the mobile phone on a general basis threatens to a high or very high degree the protection of privacy. The survey shows that it will be important for institutions and companies that want legitimacy among their users not to violate current standards for use and sharing of information. They should therefore seek to involve residents in dialogues on standards and expectations for using data and how they can help improve services. The survey also shows that we are facing a privacy paradox, because many continue to use the technology as before, despite the strong concern about data abuse.

In urban areas large amounts of data are collected through sensors, apps and digital networks. The extensive use of smartphones in the population in recent years has made it possible to retrieve data showing motion patterns with a greater degree of accuracy. Such data can help citizens to plan their everyday lives and improve the authorities' abilities to manage the city in a good and efficient manner. Use of this type of data is essential elements in the development of so-called "smart cities", a concept that describes how cities can deploy new technology to reduce costs, improve services, and increase citizens' participation and quality of life.

At the same time, such data contain person-related information, including the geographical position of the inhabitants and the mobility pattern. When the mobility pattern is mapped using these data, it raises a number of ethical issues. Use of mobile data to develop urban areas using digital technologies depends on the acceptance of this in the population, and that it is used in accordance with expectations and norms. This report investigates these conditions through a literature review of research on the use of mobile data for transport purposes, and a survey of attitudes for using mobile data in Oslo and Tallinn.

Legislative and ethical guidelines

In 2016, the EU adopted a new privacy policy, introduced in May 2018. The former personal protection directive dates back to 1995. With the new privacy legislation introduced in 2018, EU citizens have new rights to privacy¹. There are essentially four new main points that are central to EU citizens (EU Regulation 2016/679): Easier access to personal data; the right to transfer personal data between different service providers; the right to delete data about himself and; Right to know when personal information has been hacked or there has been data interruption.

¹ The General Data Protection Regulation (GDPR)

In 2016, the OECD prepared a report on research ethics and new types of data in social research. In this report, they gave recommendations related to special issues that occur when data is used in scientific research (OECD 2016, 8-11). In particular, it emphasizes individuals rights to protect their own personal data and identities; opportunities for obtaining informed consent; identification and anonymization; resale of data; security of data sharing; public obligations regarding information and access.

Informed consent and anonymity are key issues when authorities, companies and consumers relate to privacy. Nevertheless, it can be difficult to maintain these goals in practice. Many circumstances make it difficult for individuals to give informed consent and anonymous data can subsequently be de-anonymized by connecting them to other datasets. Despite anonymization, many large data can be used to draw conclusions about a persons identity, based on his own actions or actions to a minority.

Access and use

In the new socio-technical digital landscape there are new dividing lines where the balance of power between actors is changing. A new hierarchy has occurred between those who deliberately or unconsciously generate data, those who have the tools to retrieve data and those who have the expertise to analyze them. This new hierarchy have important implications for research.

Researchers and national authorities have until recently had exclusive access to data that other actors did not have, by having resources and competence to collect data through scientific tools (surveys, interviews, etc). Today, this has changed as private companies increasingly has access to data sources that research institutions either have to purchase or use more resources to get access to. The companies that have access to digital mobility data are not responsible for making this data available and have full control over who can access them. This creates a disparity between private actors and research institutions, but also between academic institutions that have different access to resources to obtain weigh such data and expertise to analyze them

Attitudes for using mobile data

Use of large data to develop smart cities should not violate basic standards for information sharing, privacy and control. The usefulness of sharing data about mobility patterns must be balanced with the risk of undesired monitoring and control. Thus, it is important to have insight into what the population expects and accepts.

This report presents data from a panel survey of the population in Tallinn and Oslo. Estonia has come a long way in using digital data to coordinate and streamline interaction between public authorities and individuals. At the same time, this is a country where there is generally less confidence in government and the political system (which also was evident in this survey). The confidence that public and private businesses can handle privacy concerns is stronger in Tallinn than in Oslo. This may indicate that the (largely) effective digital public service systems have helped to strengthen trust in public institutions, albeit not to the political authorities.

It is in general high acceptance to use this type of data to prevent terror and crime. This is the only field where the majority states that this is acceptable. Secondly, use of mobility tracking data to improve the transport systems, was seen as acceptable (to a large or very

large extent) by approximately 50 % of the populations. In Oslo, 18 percent think that it is acceptable to use such data to develop commercial products. In general, the acceptance of such data is somewhat higher in Tallinn than in Oslo.

In both cities, however, we see that the concern of the possibilities of abuse of these data is significant, and to some outweigh the positive expectations and the confidence that public authorities protect against abuse. It seems that in Tallinn there has been a polarizing development where acceptance and utility assessments are valued while skepticism has also been strengthened. It is worth noting that well over half of the citizens in both cities are worried that tracking data will be abused.

However, concerns with the risky aspects of using mobile services have not put any damper on the use. Those who are the most active users of social media and navigation services on their travels are no less worried about privacy risks than others. One explanation is that many feel they need to use these mobile services in their everyday lives, or that they don't feel that the risk exceeds the benefits.

We locate different underlying views on the use of mobile data and privacy in the sample. Firstly, an attitude characterized by confidence in public authorities and the necessity for a high degree of information sharing and monitoring. Second, there is a clear ground of skepticism about the use of digital data by authorities, partly due to the risk of improper monitoring and the risk of misuse of the data. A third underlying attitude is characterized by strong expectations that new technologies will help develop better transport systems for users. The use of mobile data to record mobility depends on some confidence in those who retrieve and use this data. It is therefore not surprising that there is a strong correlation between trust in social institutions and positive attitudes to use of digital data, while the distrust of political institutions is associated with a skeptical attitude.

Benefits and challenges

The results of the survey show that there is considerable skepticism about the use of mobile data to track mobility patterns in the population, which suggest that such data should be used with much caution. Use of mobile data in commercial contexts could be perceived as breach of existing information sharing standards and social norms. A breach of the standards affects companies that collect data (in particular the telecom operators), but also institutions and companies that order and exploit them.

Public agencies wishing to exploit this type of data in further development of transport services should ensure that this is done within the limits put by the new privacy regulations, but also in accordance with norms and expectations in the population. Utilization of this type of technology should seek to involve the residents (those who will use the systems) to get information about their expectations, needs and resistance points.

Within social scientific research, attention should be paid to informing why data is collected and how they will be used. The research ethical guidelines that apply to the use of large data should be the basis for all types of projects where one uses this type of data (OECD 2016).