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EUROPEAN UNION

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Inspire Policy Making with Territorial Evidence

Discovering the potentials of big data for integrated territorial policy development in the European growth corridors – a review on new data sources

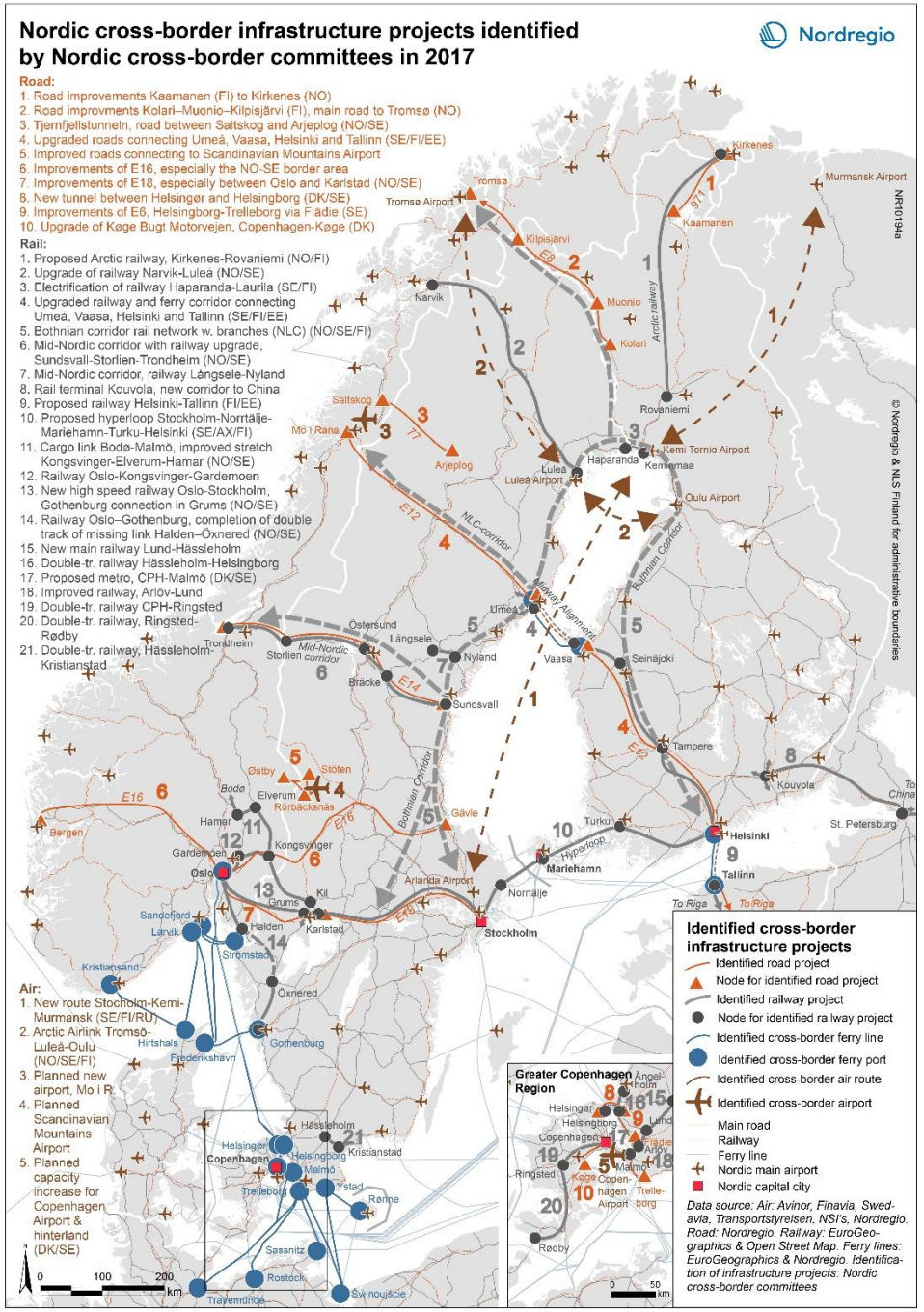
Background & Objectives

- On-going Big Data & EGC Targeted Analysis project
- Need for new ways to use data as evidence for policies and to understand corridor functionalities
- Increasingly robust data analysis products and services such as AI, Machine Learning, and Deep Learning increasingly available

➢ **The paper introduces a comprehensive approach for identifying new and existing big data sources relevant to policymaking for growth corridors**

➢ **Main interest is in those datasets that could be harnessed and combined to analyze the functionalities and territorial interrelations of growth corridors at a transnational scale – i.e. flows and interactions**

Source: European Commission

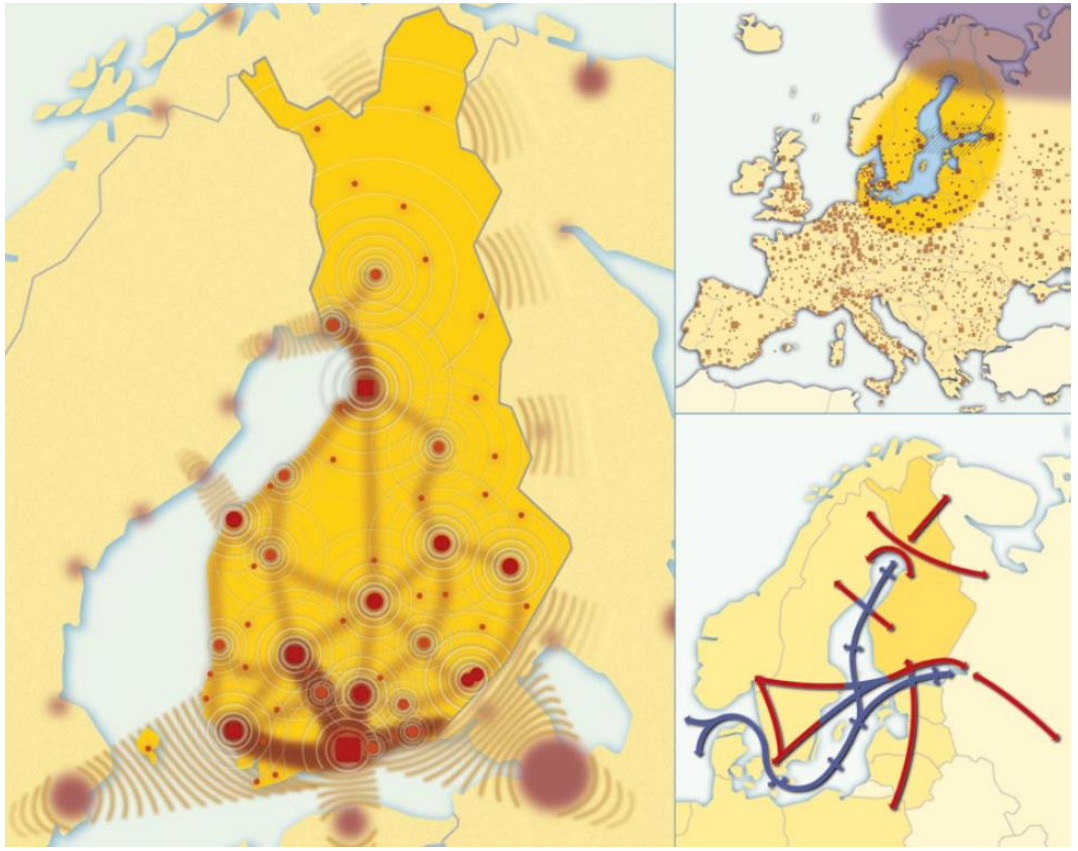


Source: Nordregio

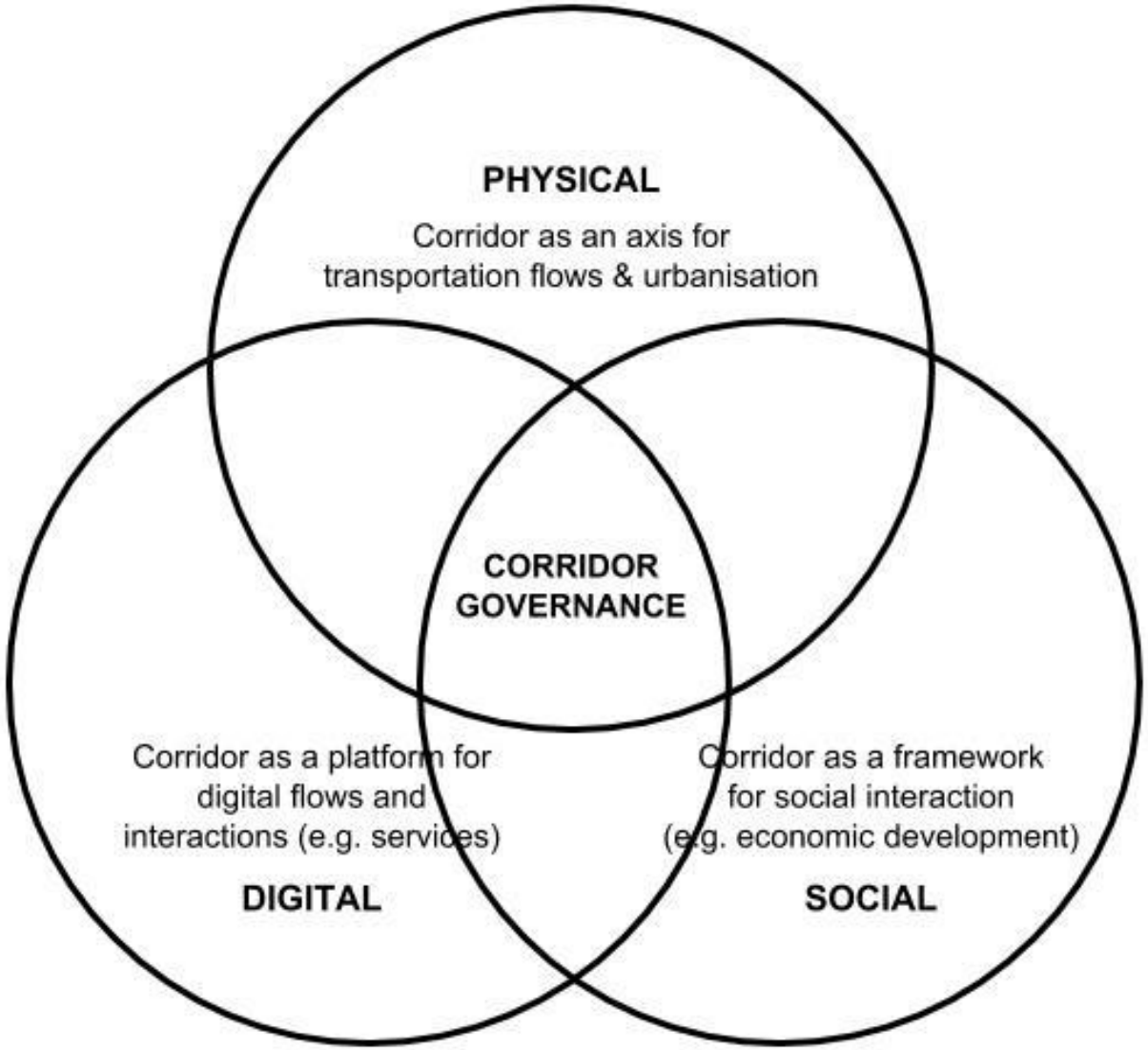
Approach

APPROACH FOR IDENTIFYING BIG DATA SOURCES RELEVANT TO POLICYMAKING

- Corridors as meta-governance frameworks (e.g. Zonneveld & Trip 2003; Jauhiainen & Moilanen 2011; Moilanen 2012)
- Geographical conceptualization of space as absolute, relative and relational (Harvey 1973), which here describe physical, social, and digital aspects of corridor development
- Within these categories, case studies selected to further explore potentials of new available data sources
- Traditionally focus on physical connectivity - new datasets that describe digital and social interactions hold potential to generate new forms of insights into spatial connectivities and interdependencies among corridor actors



The conceptual approach



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Examples

CASE 1: E18 route traffic analysis

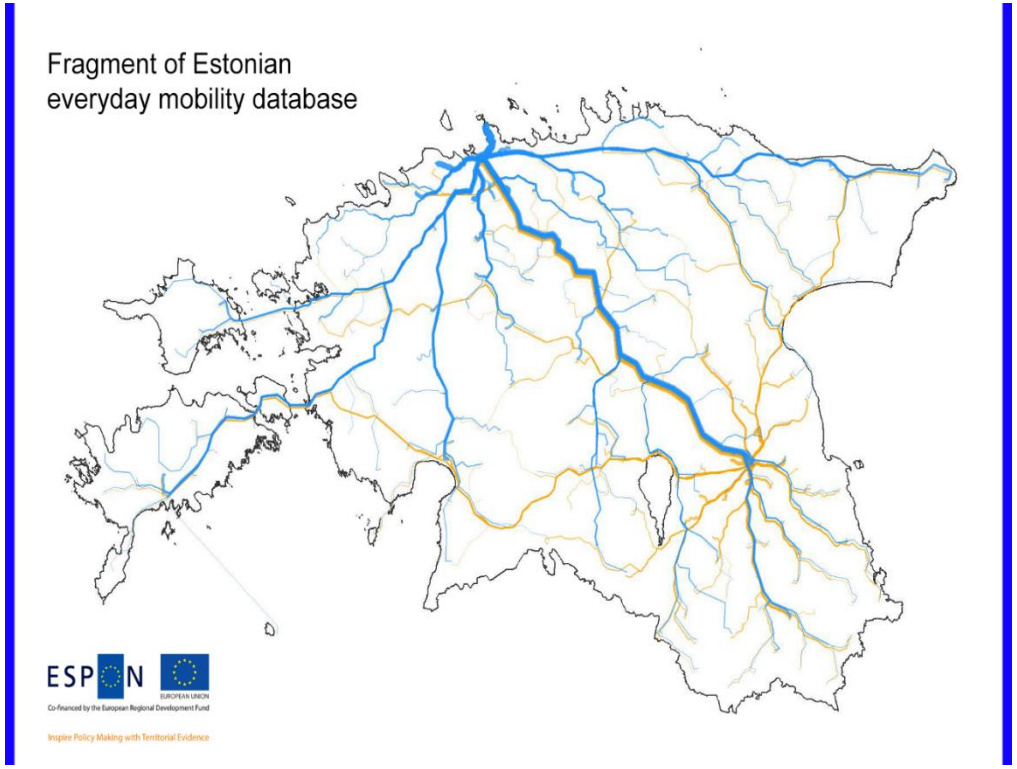
- The goal is to develop a model of the relationship between road traffic and economic data of municipalities
- The traffic data of the E18 route (automated traffic measurement data) and the economic indicators over the period 2010-2017 are gathered from public sources
- A model will be created using a convolutional neural network (CNN), which is spatially restricted to the existing municipality areas and constrained to operate on the traffic flow information
- As the spatial relationship between the municipalities and measurement points is complex the distributed dynamical model is selected, which uses radial kernel functions embedded to a CNN method
- A further step will be in trying to predict relative economic development of different municipalities over time, and early detection of various anomalies

CASE 2: Project partnerships and the regional economy

- The purpose is to analyze the opportunities and challenges of open data on joint EU project funding, combined with the regional economy – focus on project partnerships
- The social network analysis will help the quantitative and qualitative evaluation of the interaction between partners, and modelling interlinkages
- The regional economic factors are analyzed in relation to project partnerships, thus providing a fresh angle to the extant network analysis literature
- The network is constructed from Interreg projects from 2014-2020 programming period
  - In the first stage the key goal is to connect three states, Finland (FI), Estonia (EE), and Sweden (SE) with the aim to generate an interaction matrix, and visualize it
  - Second stage is to weight the interactions based on the amount of funding for each project

CASE 3: mobile positioning data

- Main purpose is to develop the nation-wide mobility database which contains data about the regular movement patterns of Estonian residents
- The main data input is coming from passive mobile positioning
- Based on anchor point model, the meaningful locations (home, work, leisure, household etc) are calculated from the mobile positioning data
- The innovative aspect of the study is the usage of mobile positioning data in production of a nationwide (official) mobility database for the first time



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Discussion

Discussion

- Portraying European growth corridors as frameworks for meta-governing spatial development highlights the role of evidence – and data – in their planning processes

➢ Big data plays a central in understanding the complex spatial connectivities that cannot be captured by using traditional statistical datasets

- The existing gaps in the knowledge-base could be significantly complemented by utilizing new big and open data sources and methods of analysis - Nowadays the arguments about functional corridors are too often based on assumptions and strategic objectives without adequate evidence-base
- The presented conceptual approach can be utilized to shed light on the different dimensions of corridor development to enhance their comprehensive governance - imply different strategies for data collection and analysis

Discussion

- Currently, the evidence-based decision-making relying mostly on data about physical flows has directed attention to the development of corridors as platforms for physical mobility – i.e. transportation corridors

➢ New data sets related to social and digital interactions in space (capable of explaining the factors behind physical movement) might contribute to the development of more environmentally, socially and economically sustainable territorial practices in corridors functioning as platforms for numerous interactions

- The factors causing the movement at the growth corridors should be at the core of corridor development due to the fact that these issues cannot be affected by the individual actors at the lower scales of territorial development

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Thank you

Helka Kalliomäki, Centre for Collaborative Research/University of Turku
Nicolas A. Balcom Raleigh, Finland Futures Research Centre/University of Turku
Pekko Lindblom, Department of Future Technologies/University of Turku
Anto Aasa, Mobility Lab/University of Tartu

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