Plan Overview

A Data Management Plan created using DMPTuuli

Title: CHIFAM Travel

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Project abstract:

CHIFAM Travel is a research project funded by the Research Council of Finland that investigates the effectiveness of multilevel interventions in increasing active travel to school, leisure-time activities, and families' everyday travel. A multilevel intervention combines elements that target the built environment, the classroom, and the individual (including their family). Qualitative and quantitative research methods are used to enable holistic examination throughout theoretical frameworks such as Social Practice Theory.

We study 4th- and 5th- grade students in various schools across Oulu. Schools are given different combinations of interventions in a way that enables comparison between effectiveness of multilevel and single-level interventions. Although we focus on school travel, our research is also interested in leisure trips, important places in children's living environment, and the modes of transport they use in their daily lives.

Our primary data collection method is participatory mapping (PPGIS). Collected spatial data is supplemented with physical activity data from accelerometer measurements and interviews with school staff, students, guardians, and the study city's urban and transport planners.

The project started officially on 01.09.2024 and ends at 31.08.2028. The data collection part of the project starts 01.01.2026 and will be finished by the official ending date of the project.

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CHIFAM Travel

1. General description of data

1.1 What kinds of data is your research based on? What data will be collected, produced or reused? What file formats will the data be in? Additionally, give a rough estimate of the size of the data produced/collected.

Type of data, a short description	File format(s)	How will data be collected?	Will you process any personal data or other types of confidential information?	Give a rough estimate of the size of the data.
Participatory mapping data (collecting spatially referenced data on children's and their parents' behaviour, preferences, and experiences related to everyday mobility).	.csv, .shp	Online participatory mapping survey; participants recruited through schools via letters sent to chidlren's homes.	Yes, contact information, consent forms, geospatial home locations (approximate location), self-reported health data	Less than 100 Gb
Administrative GIS data (will be used to analyze various spatial aspects of the participatory mapping data)	.csv, .shp	Data from regional and national geospatial data providers	No	Less than 100 Gb
Family interviews (will be collected to understand the social, cultural, and intergenerational effects and mechanisms that support or hinder children’s active travel)	mp4, docx.	Invitations to study sent to home/care-givers. Interviews will be done on site (school, home, or while travelling) or remote (meeting software such as teams or zoom will be used).	Yes, voice, video and indirect identifiers.	Less than 100Gb

Accelerometer data (measuring the amount of time spent in moder-ate-to-vigorous physical activity over multiple days)	.csv	Participants will wear accelerometer on their tights for eight consecutive days. Accelerometer data is basically information about how fast something is speeding up or slowing down and in which direction. The Fibion device which will be used in the research collects Raw tri-axial acceleration data. This means it records movement in three directions (X, Y, Z) at high resolution, which can later be analyzed using different algorithms.From the raw data, Fibion automatically calculates: • Activity types (e.g., sitting, standing, walking, cycling) • Activity intensity (light, moderate, vigorous) • Energy expenditure estimates • Sedentary time and posture information These calculations are done per each respondent but the data analysed is pseudonymised. Participants will be recruited via letters sent to children's homes via school.	Yes, contact information and consent forms.	Less than 100Gb

Project's required lifetime data storage will be approximately 250 GB - 5 TB.

1.2 How will the consistency and quality of data be controlled?

Data will be analysed using commonly available tools relevant for the project (e.g., ArcGIS, QGIS, Atlas.TI, NVivo, SPSS, R, RStudio, Python). We will create a standard data collection and handling procedure where data is stored and versioned according to sensitivity and data type. There will be training sessions to ensure that all researchers know and follow the same procedure. We will conduct data review sessions where the steps of data handling are reviewed and, if necessary, repaired, in order to monitor data quality.

Quantitative data, such as participatory mapping and administrative GIS as well as the accelerometer data, will be subject to data checking procedures, such as inclusion of attention check and consistency items, as well as statistical analyses (e.g., frequencies, means, and ranges) to detect anomalous values. Qualitative data, such as interviews, will be subject to checking in data walkthrough sessions, and member and cross-checking procedures will be implemented where applicable. The PI will review the data files regularly and before any release. Data including personal identifiers will be pseudonymized.

Data collection will be started in 2025.

2. Ethical and legal compliance

2.1 What legal issues are related to your data management? (For example, GDPR and other legislation affecting data processing.)

Some personalised data will be collected (such as subjective wellbeing and subjective health statements as well as respondents' approximate home, school and everyday errand points). Personal data collection mandates a consent, which will be granted by children's guardians through a consent form. No data will be shared to the project partners without anonymisation. The data will always be analysed by researchers in a pseudonymised format. Anonymised data can be archaived. All data handling and processing will be GDPR compliant.

2.2 How will you manage the rights of the data you use, produce and share?

Rights of the used data will be compliant to Tampere University's policies. Right to the data will be gained with the respondent's consent to participate to the study. Authorship of publications will be shared among the research group and possible co-operators. Order of authorship will be decided based on the contribution, which is determined with contribution statement frameworks such as CRediT.

3. Documentation and metadata

3. How will you document your data in order to make the data findable, accessible, interoperable and re-usable for you and others? What kind of metadata standards, README files or other documentation will you use to help others to understand and use your data?

-README files or other supplementary files describing the data.
-The variables of the data are described in the data dictionary.
-The codes and methods used to analyse and modify the data are carefully described to ensure the reproducibility of the results.
-The methodology section of publications.

4. Storage and backup during the research project

4.1 Where will your data be stored, and how will the data be backed up?

In business computer's (e.g. TUNI standard laptop) internal hard drive.
In TUNI OneDrive and Teams (TG groups)
In TUNI network drives (p- and s-drive)

We will store the original raw data collected in a separate folder than any of the data that will be processed during the project. Raw data will be securely stored using Tampere University storage services for research data, and will be backed up by the IT Services. All data sufficiently anonymized or otherwise not classified as sensitive will be stored in public repository Zenodo, with backups stored in Tampere University's storage services. Zenodo is backed by the EU and European Commission through OpenAIRE and CERN as a memory institution, ensuring long-term viability of the data.

PI or other designated persons store the data on the university's servers for 5-15 years after the end of the project, after which they destroy the data.

4.2 Who will be responsible for controlling access to your data, and how will secured access be controlled?

The principal investigator will be responsible.

5. Opening, publishing and archiving the data after the research project

5.1 What part of the data can be made openly available or published? Where and when will the data, or its metadata, be made available?

Part of the data (not including any personal data) can be made publicly available. Fully anonymized data will be published in Zenodo as open data. This data will only include spatial location data (that is anonymized per spatial methods), not any personal background data nor home or school route locations. The anonymization of the participatory mapping data will follow the processes published in Hasanzadeh, K., Kajosaari, A., Häggman, D., & Kyttä, M. (2020). A context sensitive approach to anonymizing public participation GIS data: From development to the assessment of anonymization effects on data quality. Computers, Environment and Urban Systems, 83, 101513.

5.2 Where will data with long-term value be archived, and for how long?

In Zenodo, 5-15 years.

6. Data management responsibilities and resources

6.1 Who (for example role, position, and institution) will be responsible for data management?

Tiina Rinne, Assistant professor, Tampere university
Jussi Sjögren, Doctoral researcher, Tampere university

6.2 What resources will be required for your data management procedures to ensure that the data can be opened and preserved according to FAIR principles (Findable, Accessible, Interoperable, Re-usable)?

A certain number of hours of working time is allocated to data management in the working time plan.