Plan Overview

A Data Management Plan created using DMPonline

Title: Using questionnaires to measure attitudes and behaviours of building users

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Project abstract:

This project will study the use of survey questionnaires to collect data on attitudes and behaviours of building users, particularly those behaviours related to sustainability issues and energy consumption. Survey questionnaires are the prevailing data collection method to measure user satisfaction with buildings; however, validity and reliability of current instruments is not known. Designing survey questionnaires is a complex task, and specific knowledge is needed to write effective and understandable survey questions to assure a high level of statistical quality for collected data. The research objective is to identify existing measurement instruments used by architects and building researchers to collect and understand the needs of building users in the design process and post-occupancy evaluations, assess validity and comprehensibility of existing instruments, then design and assess improved survey questionnaires. In the project’s first phase, a literature review of relevant works that use surveys or other social science research methods to study building users will be conducted, a collection survey question examples will be compiled, and focus groups with architects and building researchers will be held. In the second phase, survey questions will be selected for evaluation with quantitative and qualitative questionnaire pre-testing methods. Based on analysis of the results, an improved survey questionnaire will be developed. In the third phase, the improved instrument will be applied to two case studies and further assessments of the validity will be made based on respondent debriefing. Solutions for the building sector will be developed based on project results in the form of guidelines to measure building occupant behaviour with higher validity. With improvements in validity and reliability of the measurement, researchers and practitioners in the field will be able to collect more accurate data to inform building design, energy performance planning, energy use models, and energy sustainability rating systems.

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Using questionnaires to measure attitudes and behaviours of building users

Data Collection

What data will you collect or create?

Different types of data will be collected within different tasks of the project:
- publications relevant for relevant keywords, including an inventory of building characteristics and user attitudes and behaviours saved as tabular data (Task 2.1)
- survey questionnaires and items characteristics saved as tabular data (Task 2.2)
- transcripts of focus groups with architects saved as textual data (Task 2.3)
- evaluation of selected survey items using different quantitative approaches saved as tabular data (Task 3.2)
- transcripts of interviews saved as textual data (Task 3.3)
- results of survey questionnaire pre-testing saved as tabular data (Task 4.1)
- survey responses of building occupants saved as tabular data (Task 4.2)

Tabular data will be saved in a Comma-separated values format and survey data also in SPSS portable format. Textual data will be saved in Rich Text Format. The estimated total size of all raw and processed data and other secondary outputs will be between 2 and 5 GB. The scale of data will not pose any challenges when sharing or transferring data between sites.

How will the data be collected or created?

The literature review will be done according to PRISMA standard (Liberati et al. 2009), the survey question characterstics will follow the structure used in the Survey Quality Predictor tool (Saris and Gallhofer 2007), the transcripts will be prepared according to the QuDEx standard (UK Data Service 2013) and survey data will be collected according to standards of the AAPOR Code of Ethics (AAPOR 2015) and the ICC/ESOMAR International code on Market, Opinion and Social Research and Data Analytics (ICC/ESOMAR 2016).

The datasets and all other research outputs will be named and versioned in a consistent way following the confentions defined in the InnoRenew CoE data management policy.

Documentation and Metadata

What documentation and metadata will accompany the data?

The documentation and metadata will follow the Data Documentation Initiative (DDI) international standards for observational methods in social, behavioral, economic and health sciences.

Ethics and Legal Compliance

How will you manage any ethical issues?

In order to be able to share research data about natural persons ethically and legally, the project will maintain high ethical standards and comply with relevant legislation. The research will follow the InnoRenew CoE data protection policy which is compliant with the General Data Protection Regulation (GDPR). The risk of disclosure will be assessed before, during, and after data collection. Strategies of informed consent, anonymization and controlling access to data will be employed according to guidelines provided by the UK Data Service. A template consent form was prepared based on the recommendations of the World Health Organisation and will be used to seek consent of all participants.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

While licences and intellectucal property rights of secondary data owners will be respected and prodected, all primary data that will be collected will be published using the Creative Commons CC-BY licence (attribution required). Metadata will be published by the CC0 licence.

Storage and Backup

How will the data be stored and backed up during the research?

The data management systems implemented at the InnoRenew CoE (following ISO/IEC 8000 and the SO/IEC 27000-series standards) will provide safeguards for data security, storage, and management. Current ICT equipment for storage, backups, redundancy and security will be utilized to insure the privacy, integrity, and safe accessibility of all data collected. Some data will be also stored in the OneDrive cloud storage of the principal investigator.

How will you manage access and security?

During the research, data will be only accessed by the principal investigator. At the end of data collection, the data will be prepared to be deposited in a repository according to FAIR principles.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

Data that contains any personally identifiable will be destroyed at the end of the project. Anonymized data will be deposited in the Slovenian Social Science Data Archives at the University of Ljubljana, a trusted digital repository with the Core Trust Seal certification. It will be available to be used by other researchers to validate research findings, conduct new studies, or for teaching.

What is the long-term preservation plan for the dataset?

The long-term preservation of the datasets will be handled by the Slovenian Social Science Data Archives.

Data Sharing

How will you share the data?

Persistent identifiers will be assigned by the Slovenian Social Science Data Archives. Metadata will be accessed by all website visitors, while data will be openly available to registered users of the Slovenian Social Science Data Archives. A copy of the data documentation and metadata will be available also through international catalogues (CESSDA and OpenAIRe) and through the InnoRenew CoE and Project research community on the general repository Zenodo.

Are any restrictions on data sharing required?

No restrictions are required.

Responsibilities and Resources

Who will be responsible for data management?

The person responsible for data management will be the principle investigator of the project, dr. Ana Slavec. She has the necessary experience as she used to work in a data archive and is an alumni of the RDA/Codata Summer School for Data Stewards. She will be mainly responsible for data capture, metadata production, data quality, while for storage and backup she will be supported by the

InnoRenew CoE's IT group and for archiving and data sharing by the Slovenian Social Science Data Archive.

What resources will you require to deliver your plan?

No additional specialist expertise is required and no charges will be applied by the data repository.