Unlock FAIR Data Excellence in Social Sciences with DataLift!

Digital Innovation Expo '23 demo booth

Ireen Raaijmakers, Robbert Robbemond

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CONTENTS

Back-ground — Data Analytics
Vision — Self reported research
Work flow — Activities and DataLift services
Archi-tecture — Current + Target architecture
Next steps — Future developments for FAIRification

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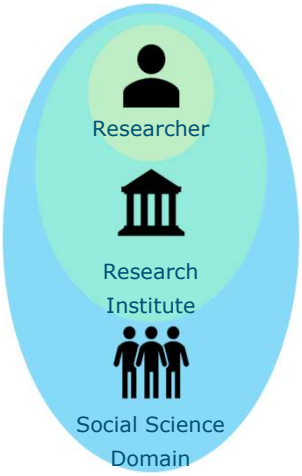
Back-ground Data Analytics for food chains and consumer-oriented research

Overcoming bottlenecks in consumer research



ISSUE	SOLUTION
Time-Intensive Data Management	FAIR principles by design significantly reduces DM burden for researchers
Questionnaire Design Complexity	Standardized components ensure easy questionnaire creation
Integration Issues Across Research Phases	Research design, survey implementation and data management are seamlessly integrated
Data Disorganization and Lack of Transparency	One central organisation environment for supporting all phases of the study
Access Control and Security Concerns	The DataLift and Odata combination realizes secure access management and sharing
Limited Collaboration Opportunities	Collaboration is improved by enabling flexible team composition and role distribution
Inefficient Analytics and Discovery	Enhanced analytics possibilities emerge once adoption has been established

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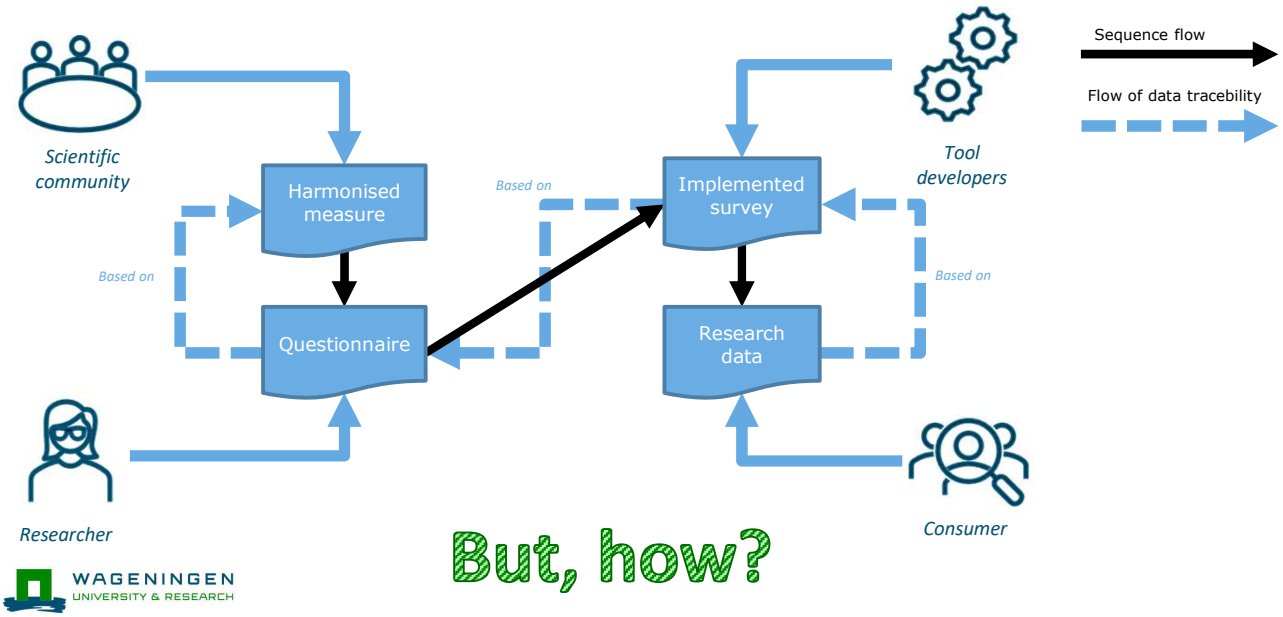
Vision
Self reported research



But, how?

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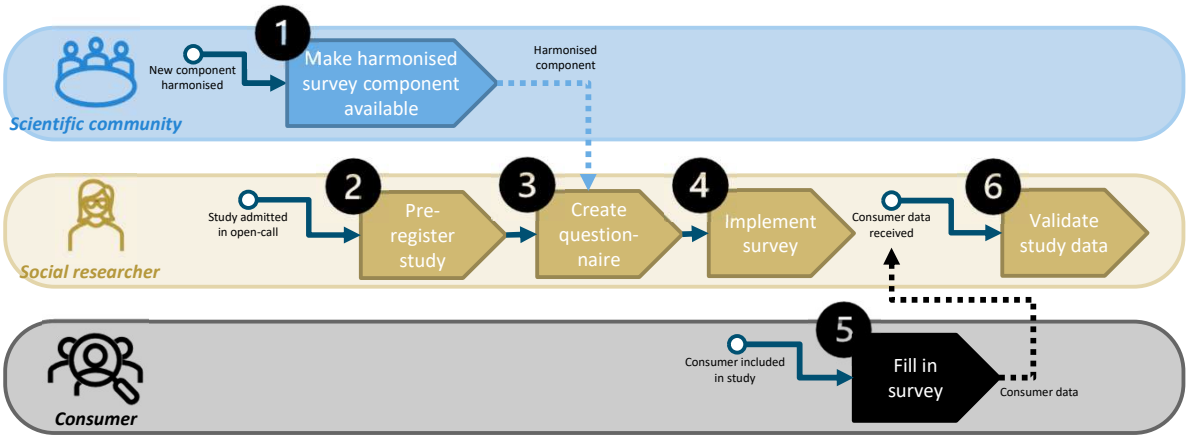
Work flow Activities and DataLift services



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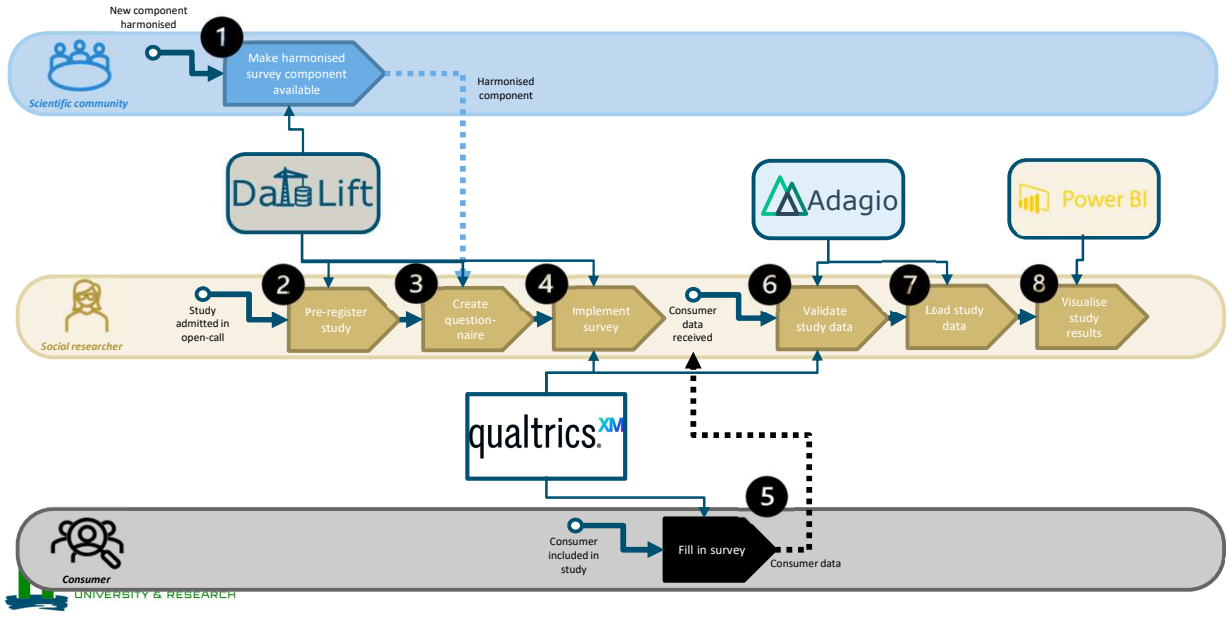
Work flow Activities and DataLift services



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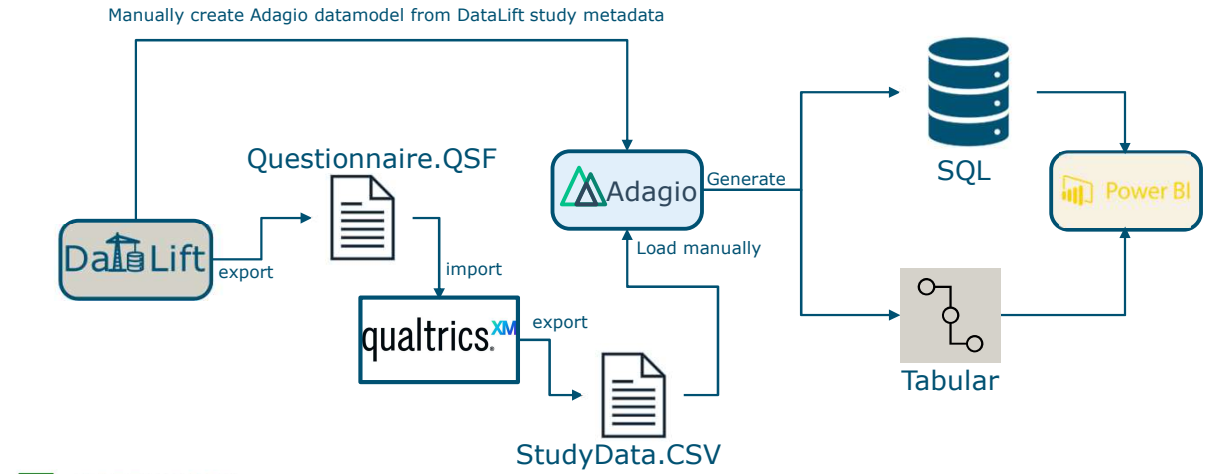
Archi-tecture

Current architecture



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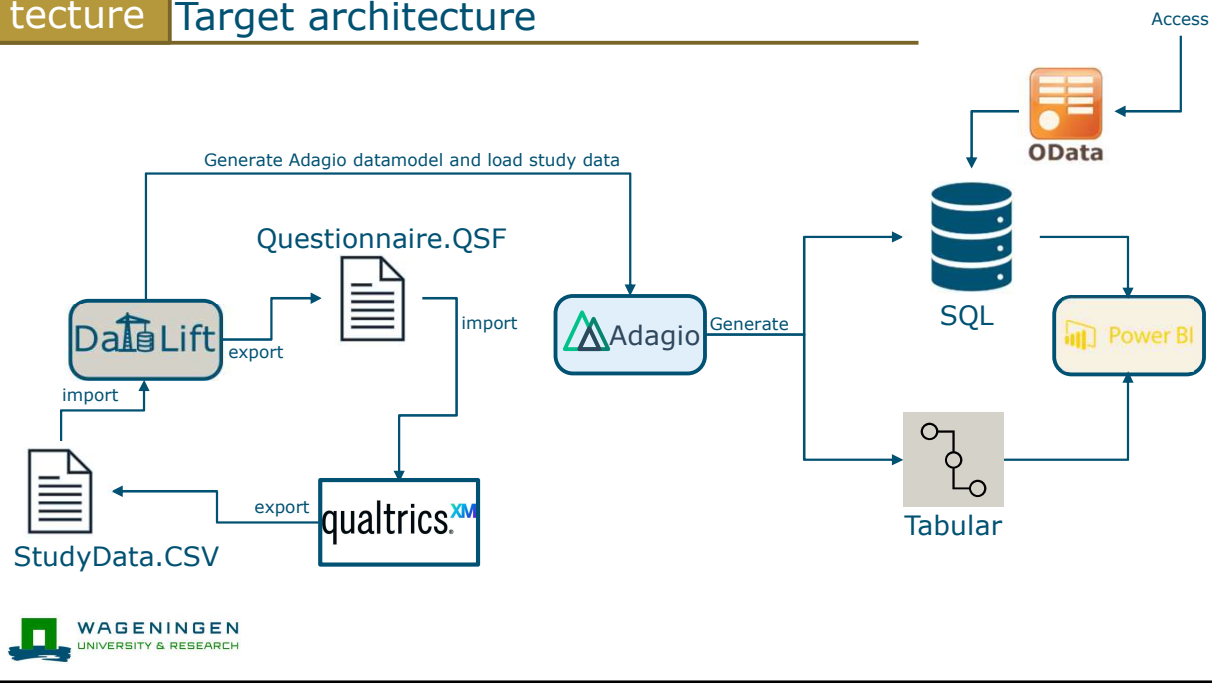
Archi-tecture

Target architecture



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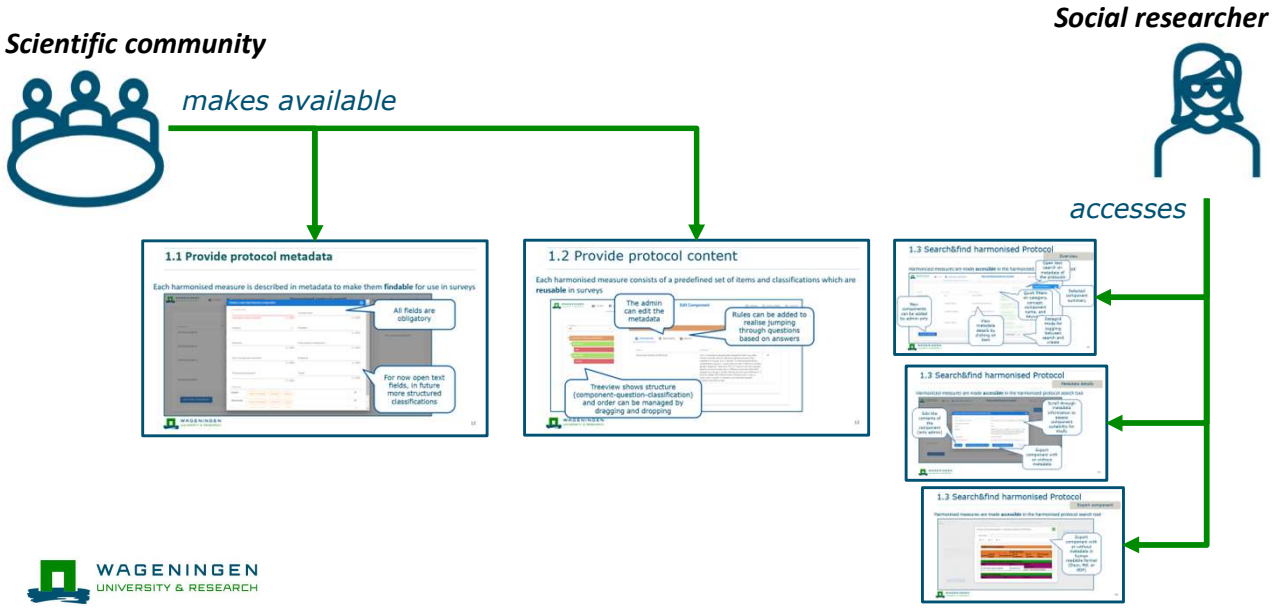
1. Make harmonised survey component available



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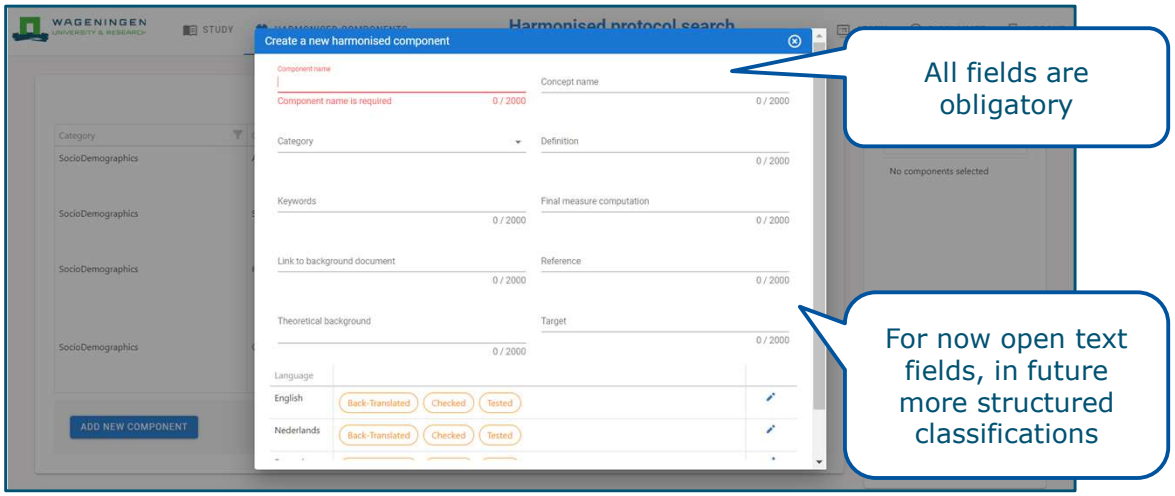
1.1 Provide protocol metadata

Each harmonised measure is described in metadata to make them **findable** for use in surveys



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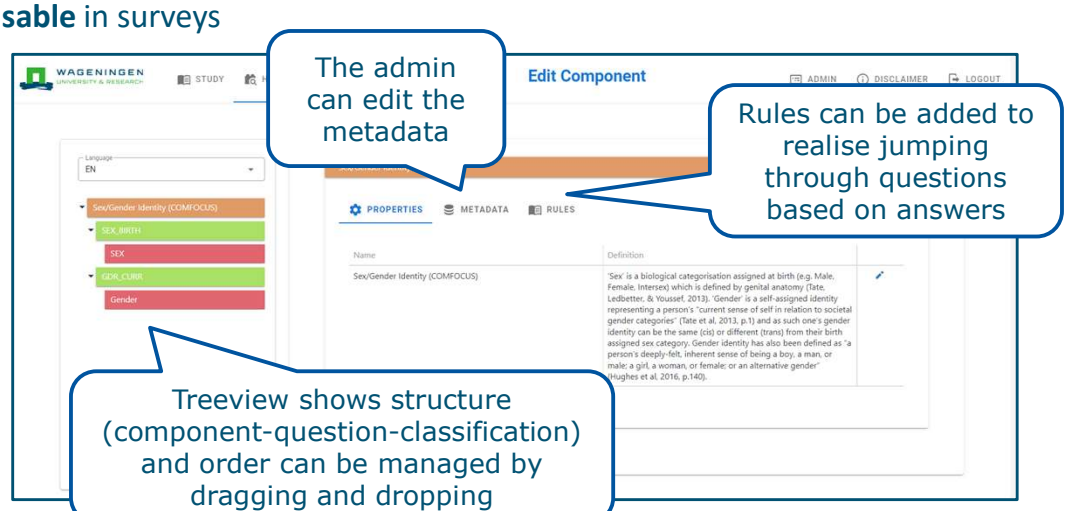
1.2 Provide protocol content

Each harmonised measure consists of a predefined set of items and classifications which are **reusable** in surveys



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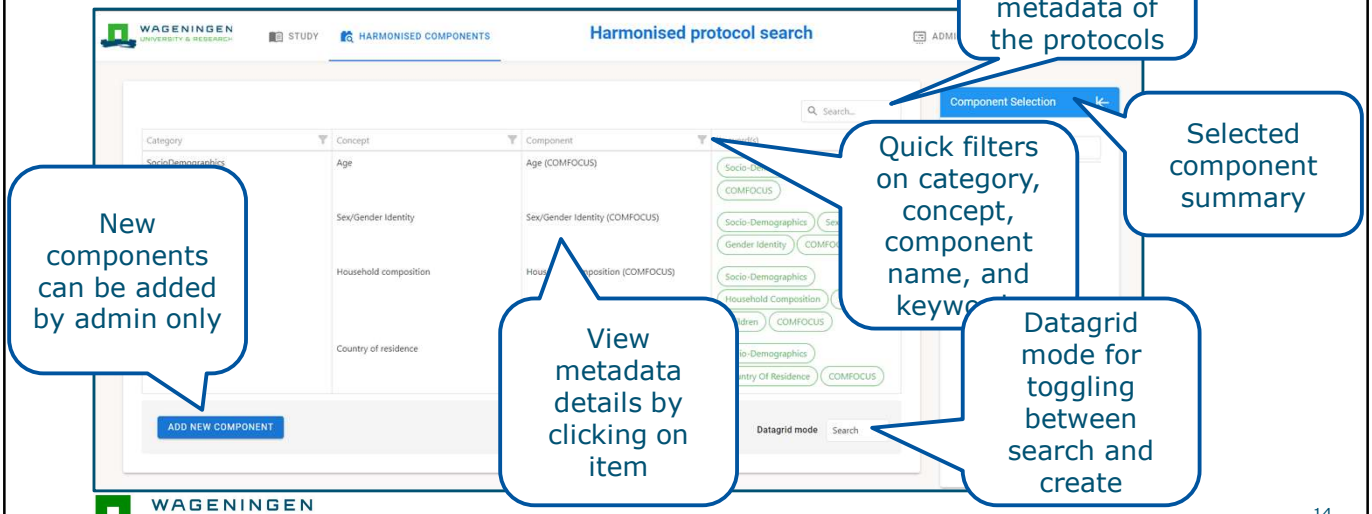
1.3 Search&find harmonised Protocol

Overview

Harmonised measures are made **accessible** in the harmonised [illegible]pol



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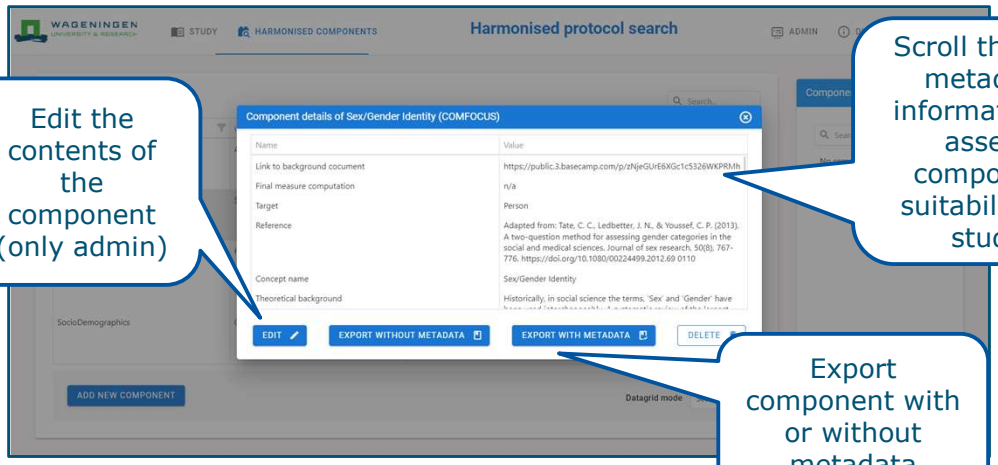
1.3 Search&find harmonised Protocol

Metadata details

Harmonised measures are made **accessible** in the harmonised protocol search tool



Edit the contents of the component (only admin)

Scroll through metadata information to assess component suitability for study

Export component with or without metadata

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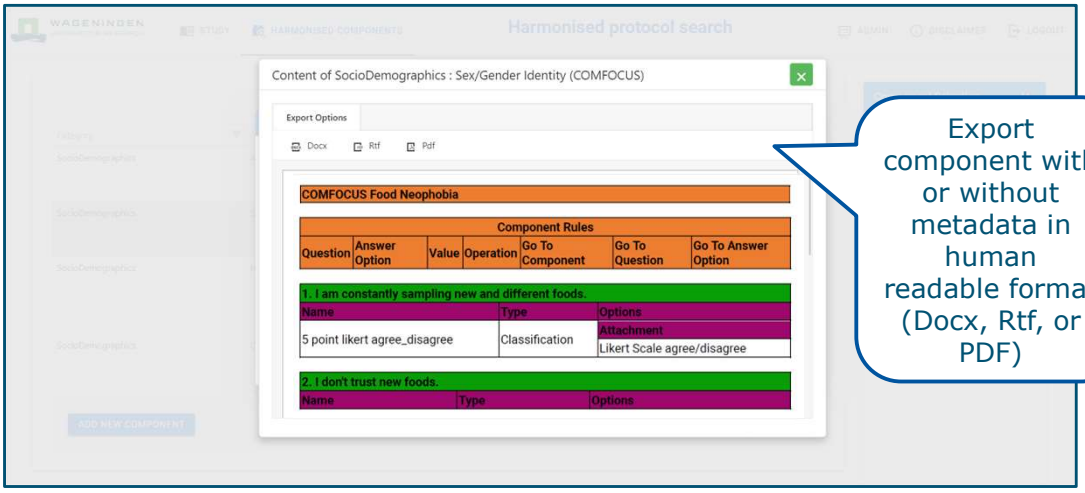
1.3 Search&find harmonised Protocol

Export component

Harmonised measures are made **accessible** in the harmonised protocol search tool



Export component with or without metadata in human readable format (Docx, Rtf, or PDF)

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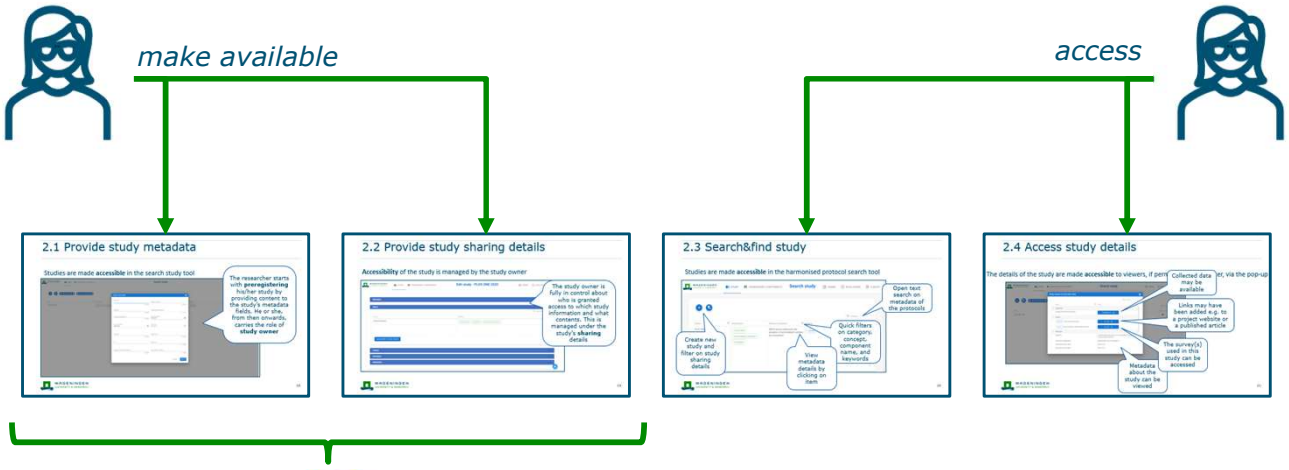
2. Pre-register study

Social researcher (study owner) ***Social researcher***



Future development: Link CDP pre-registration with domain specific pre-registration platforms and METC application tools.

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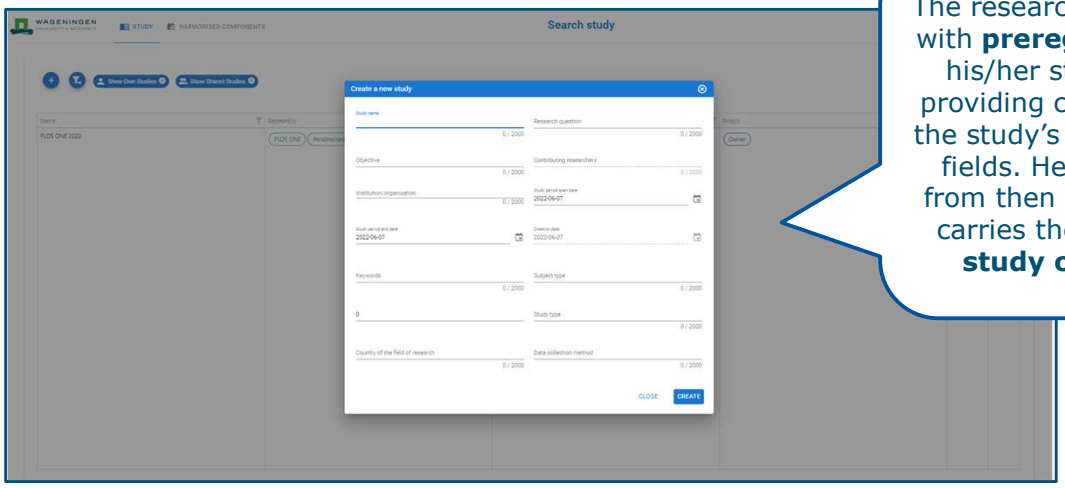
2.1 Provide study metadata

Studies are made **accessible** in the search study tool



The researcher starts with **preregistering** his/her study by providing content to the study's metadata fields. He or she, from then onwards, carries the role of **study owner**

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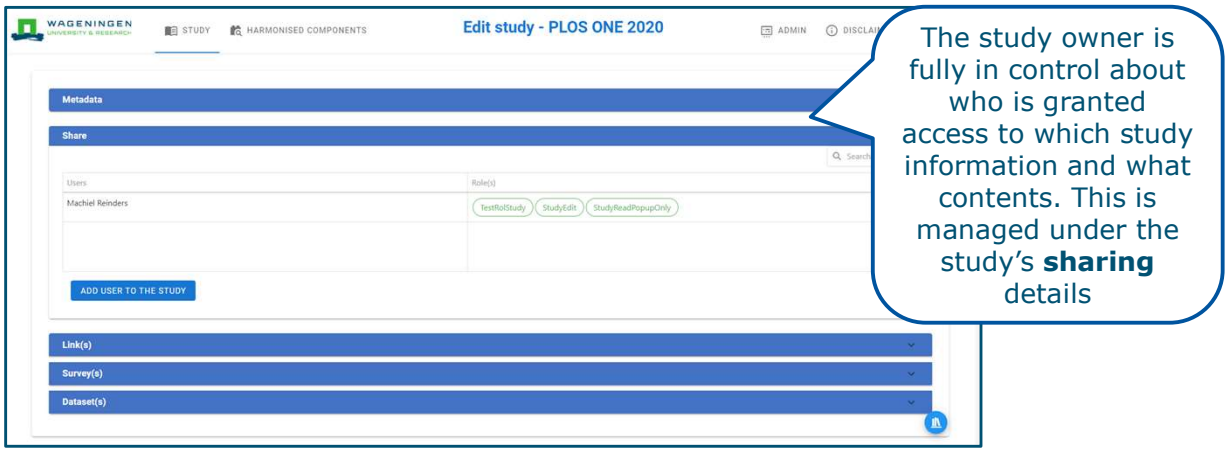
2.2 Provide study sharing details

Accessibility of the study is managed by the study owner



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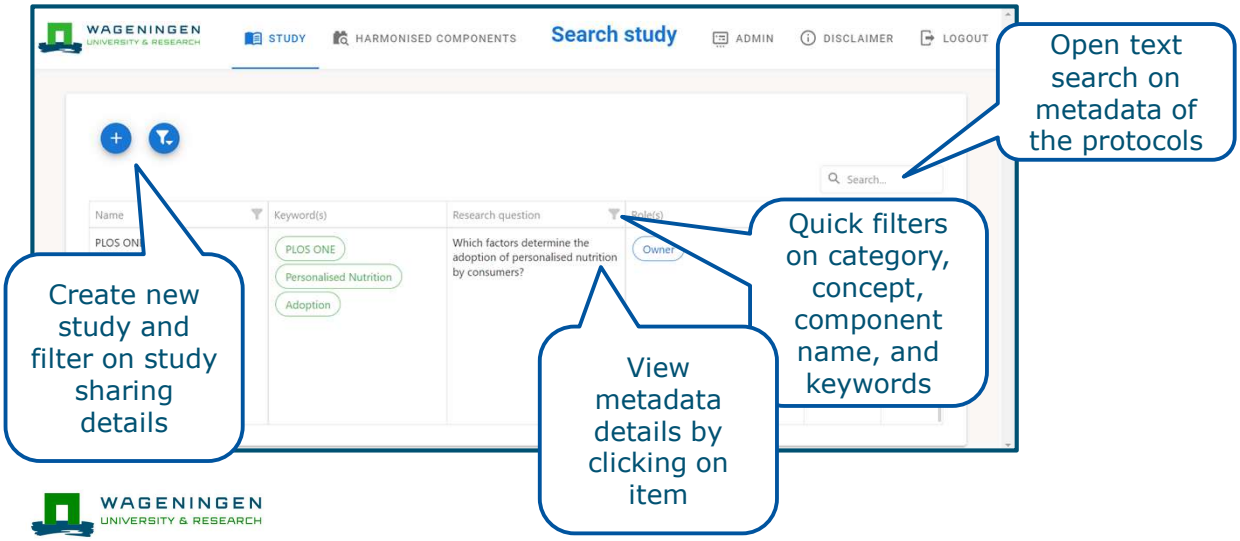
2.3 Search&find study

Studies are made **accessible** in the harmonised protocol search tool



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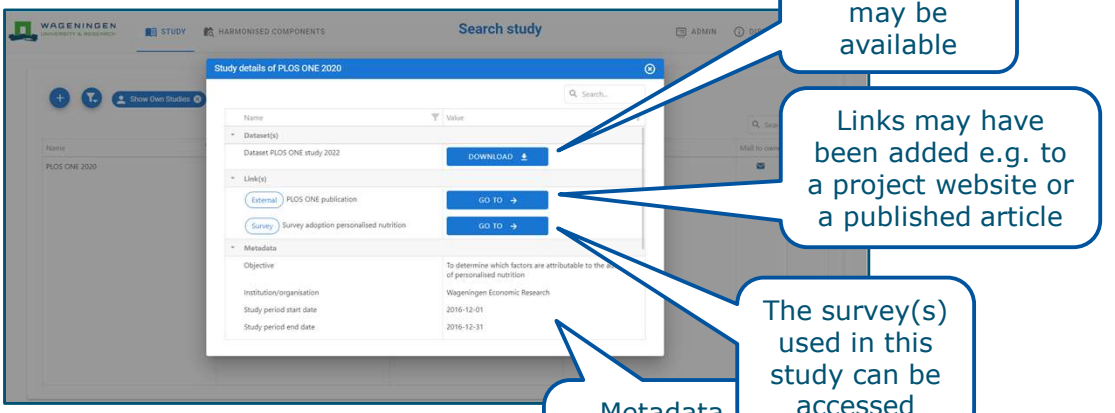
2.4 Access study details

The details of the study are made **accessible** to viewers, if perm er, via the pop-up



Collected data may be available

Links may have been added e.g. to a project website or a published article

The survey(s) used in this study can be accessed

Metadata about the study can be viewed

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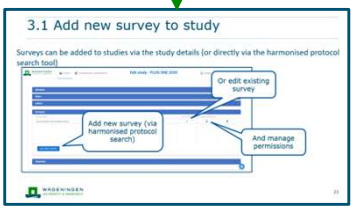
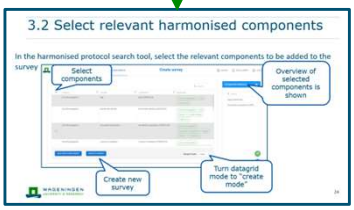
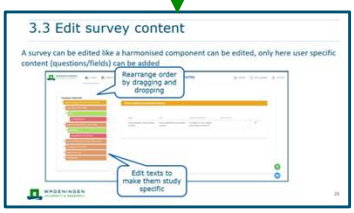
3. Create questionnaire

Social researcher

make available







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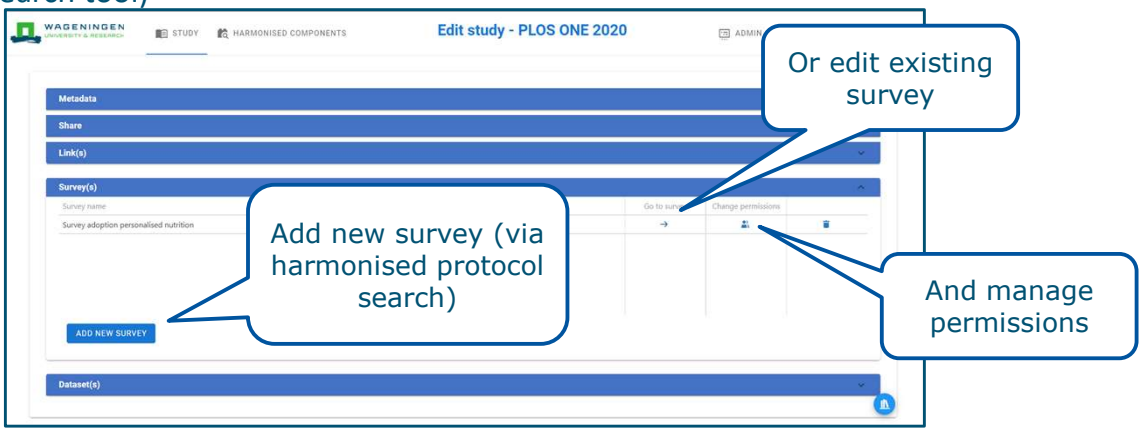
3.1 Add new survey to study

Surveys can be added to studies via the study details (or directly via the harmonised protocol search tool)



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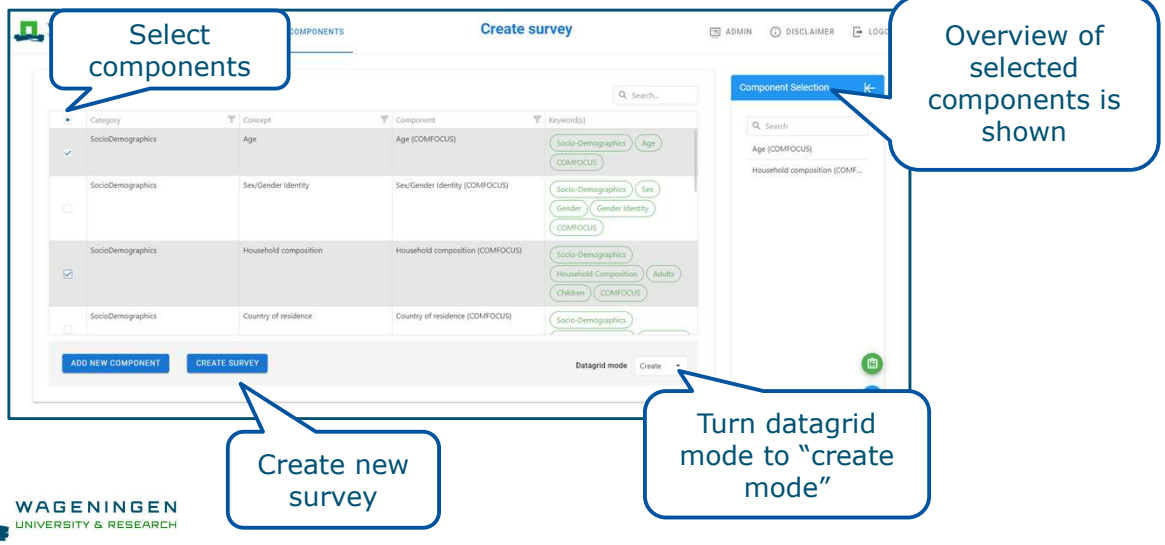
3.2 Select relevant harmonised components

In the harmonised protocol search tool, select the relevant components to be added to the survey



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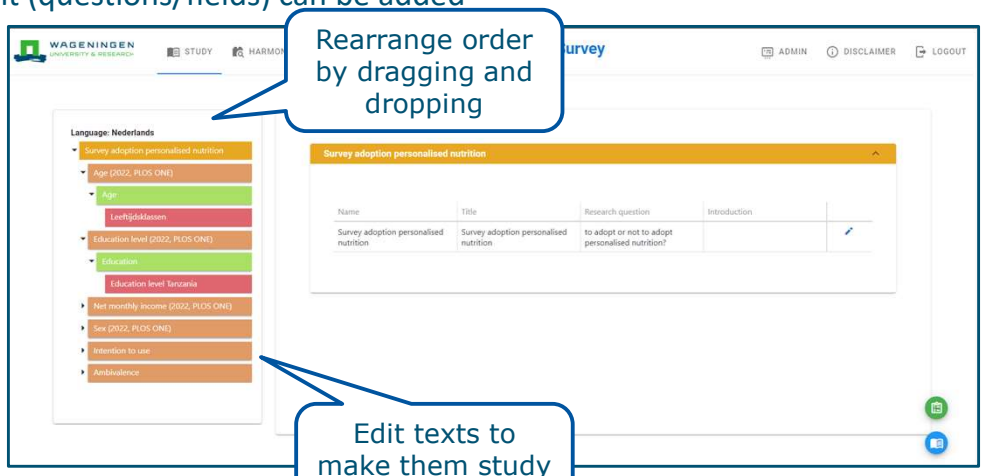
3.3 Edit survey content

A survey can be edited like a harmonised component can be edited, only here user specific content (questions/fields) can be added



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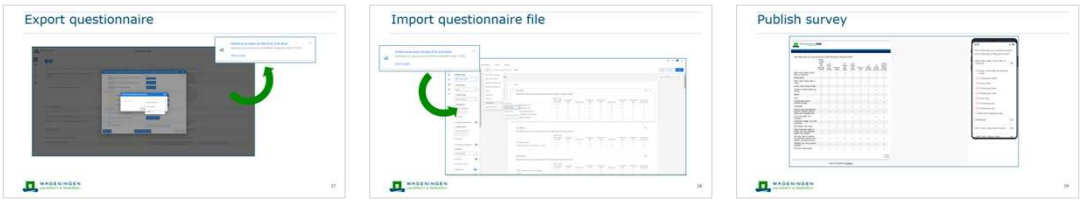
4. Implement survey



Future development WCDS project: Link CDP questionnaire export with the WEcR data science solution Adagio

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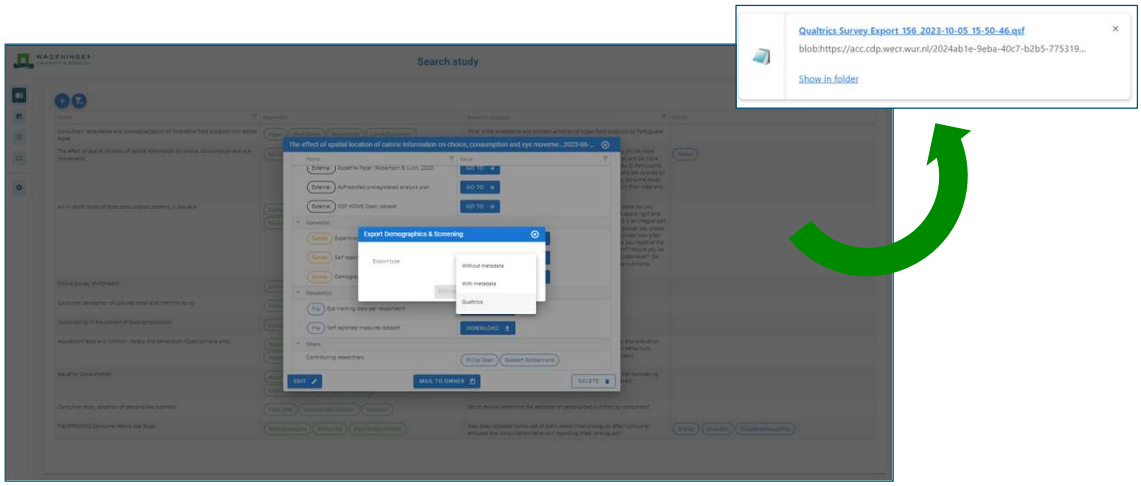
Export questionnaire



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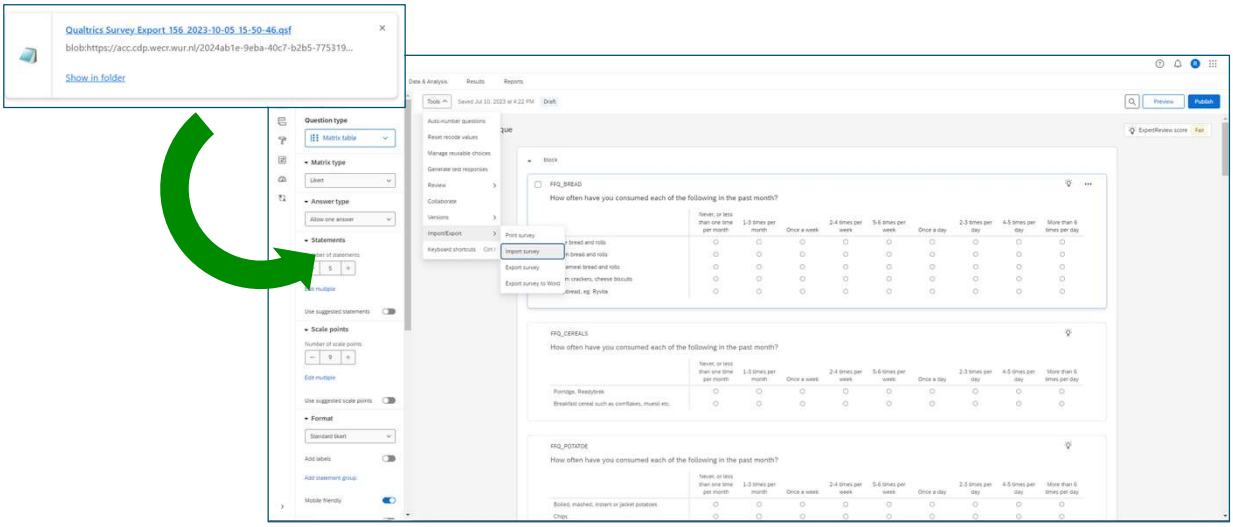
Import questionnaire file



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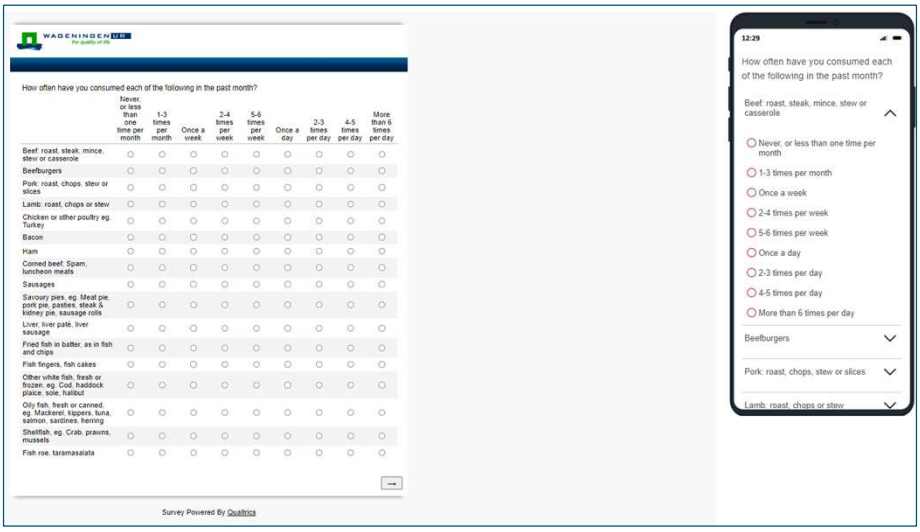
Publish survey



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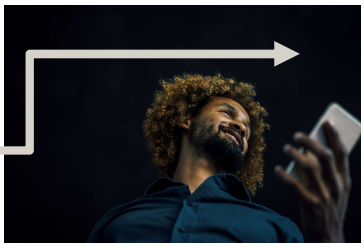
5. Implement survey

Consumer

provide data



- Taking place in commercial survey tooling
- For now a survey tool has to be configured manually based on the design
- In future integration is desirable

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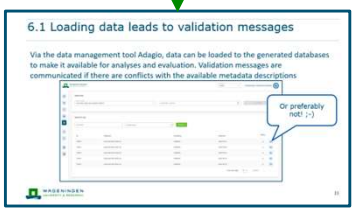
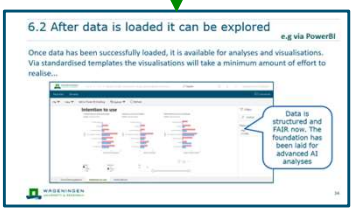
6. Validate study data

Social researcher

process data





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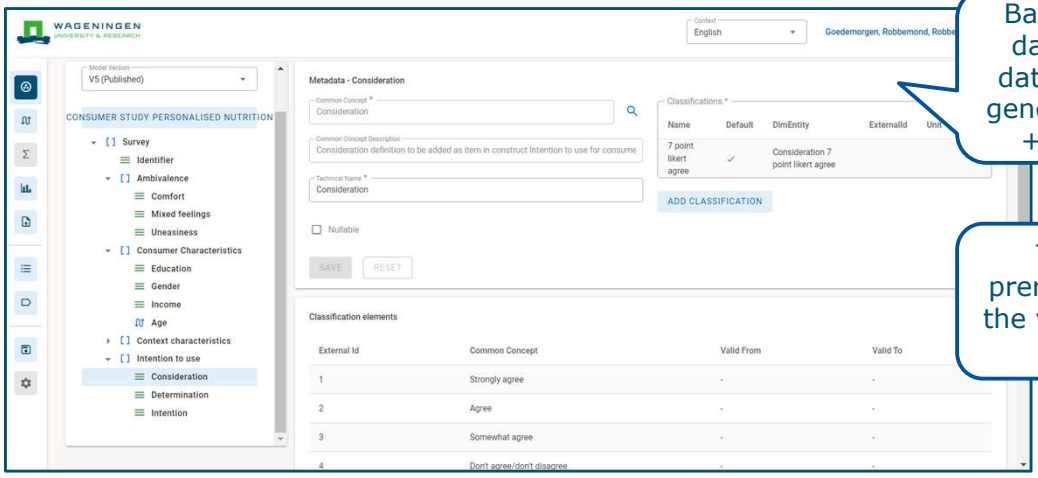
The survey design leads to the generation of a data model in the WEcR tool Adagio



Based on the data model, databases are generated (SQL + Tabular)

This is a prerequisite for the validation of data

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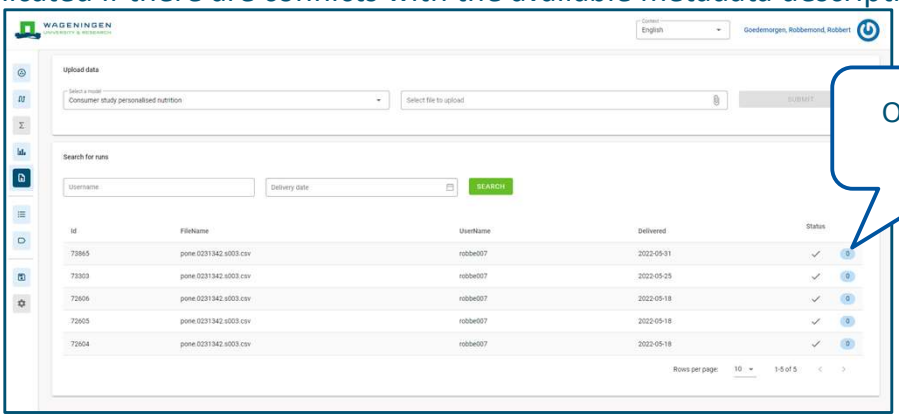
6.1 Loading data leads to validation messages

Via the data management tool Adagio, data can be loaded to the generated databases to make it available for analyses and evaluation. Validation messages are communicated if there are conflicts with the available metadata descriptions



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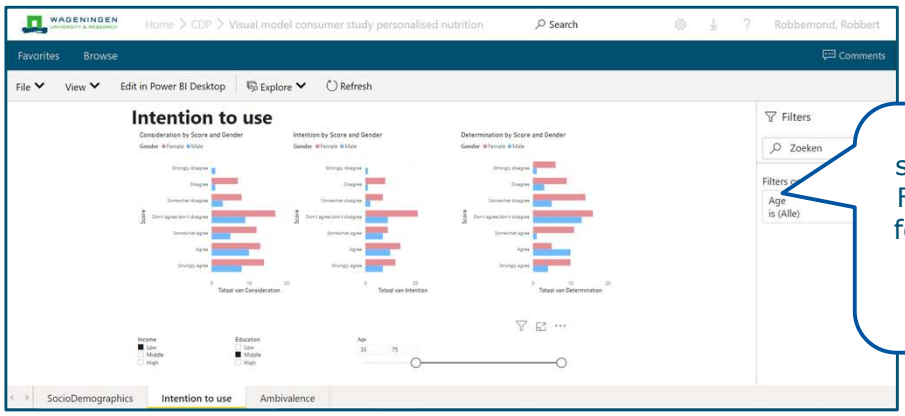
6.2 After data is loaded it can be explored

e.g via PowerBI

Once data has been successfully loaded, it is available for analyses and visualisations. Via standardised templates the visualisations will take a minimum amount of effort to realise...



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Next steps Future developments for FAIRification

What output?	What outcome?	What impact?
Link CDP pre-registration with domain specific pre-registration platforms and METC application tools	Increased transparency of research approach while decreasing efforts required from researcher	Improved adoption of FAIR data management practices while increasing data science capabilities
Future development WCDS project: Link CDP questionnaire export with the WEcR data science solution Adagio	Semi-automated data annotation realising machine readable datasets while unburdening the researcher	

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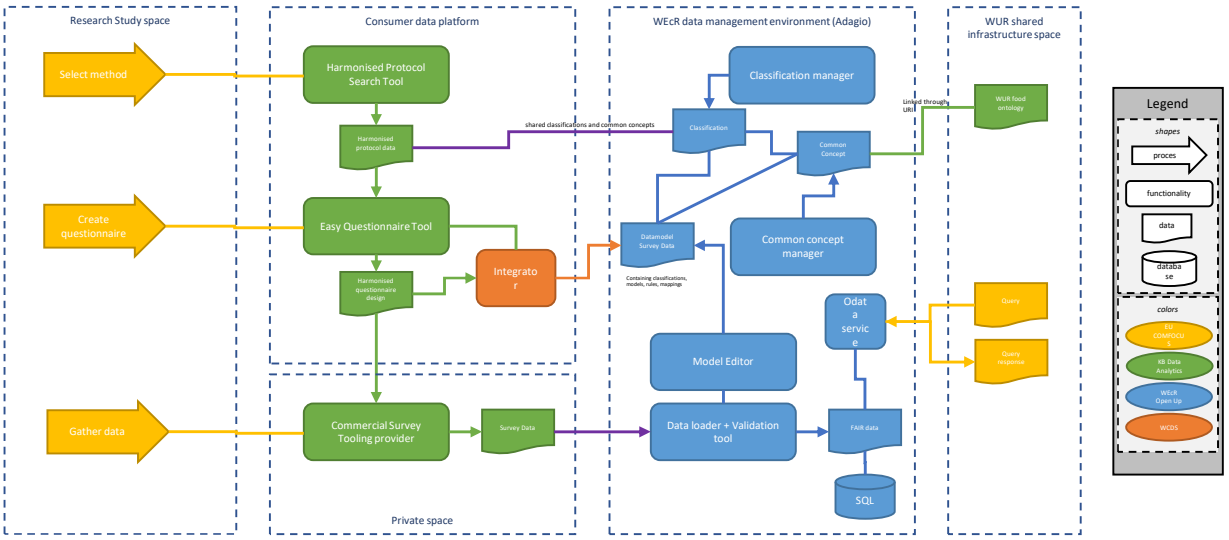
KB-38 Project: Data Analytics for food chains and consumer-oriented research

'An integrated knowledge infrastructure for FAIR consumer data'

High Level Architecture Vision and Project Cooperations (expected 2023-2024)



The Consumer Data Platform is developed in close cooperation with several projects. In the EU project COMFOCUS, the tooling is used and tested to develop a 'starting community' for Food Consumption research. Most of the content on the platform has arisen from that project. The development of the tooling on the platform is mostly developed within the KB Data Analytics project. The integrator is being developed in the WCDS project. It enables the exchange of data with the Adagio platform. This platform has been developed in the WEcR Open Up project. Within the KB Data Analytics project the basis for a WUR food ontology is developed by WFSR, WFBR, and WEcR. It is closely integrated with the ontology developed withing the EU COMFOCUS project. In that project also the Odata service is tested for querying Food consumption data.

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