Documenting the European Social Survey questionnaire design process online using the Data Documentation Initiative (DDI)

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This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 654221.
Table of Contents:

• The questionnaire design process of the European Social Survey

• The Questionnaire Design Documentation Tool (QDDT)

• The metadata standard DDI as basis for the tool

• Examples from the QDDT tool
European Social Survey (ESS) questionnaire module design process:

- Two topical questionnaire modules and related design teams elected for each ESS round
- Iterative process over two years including discussions, testing and piloting
- Multiple actors involved: Questionnaire designers, National Coordinators, Translation team, methodology experts etc.
- ESS Head Quater is responsible
ESS questionnaire design steps
The Questionnaire Design and Documentation Tool:

• A web-based open source tool,
• designed to assist research teams in developing items (questions and concepts) for topical modules of conceptual questionnaires.
• Captures and displays the development history of items.
• Usecase is the ESS.
Data Document Initiative (DDI):

- A metadata standard originating in the social and behavioural sciences moving into new fields

- Driven by a self-sustaining membership organisation, the DDI Alliance

- Rich content

- Current branches: 2.* Codebook, 3.* Lifecycle,

- Upcoming: 4 Model based, datum based
Data Document Initiative (DDI) usage in the QDDT:

- Conceptual model based on the metadata standard DDI-Lifecycle
- This facilitates reuse of items (e.g. questions and responses) over time,
  - helps keeping track of the development history of items,
- and facilitates interoperability with other tools
QDDT Conceptual Model – DDI-Life cycle (3.2) based
Measurement concepts

- **Concept**
  - **Control/Construct**
    - **Instrument**
      - **Study**
        - **QuestionConstruct**
          - **QuestionItem**
            - **Instruction**
            - **ExternalAid**
          - **Coverage**
        - **ResponseDomain**
          - **CodeDomain**
          - **CategoryDomain**
          - **DateTimeDomain**
          - **ScaleDomain**
          - **TextDomain**
          - **NumericDomain**

Queston item:
Contains the more reusable parts of a question
- Question text
- Response domains
Response domains: Can be reused by different questions
Question Construct:
The question as in the instrument
- Instructions
- Showcard
- Quality reports etc. added
Instrument sequence and flow: a next step for the QDDT
QDDT – Concepts:

Hierarchical concept list
Concepts:

Efficacy Beliefs

The Efficacy Beliefs concept refers to the beliefs in the effectiveness of personal and others’ actions contribute to a particular outcome or goal. In the context of climate change mitigation as a collective problem, and following Lubeck’s (2002) framework, this includes beliefs that personal actions can make a difference (personal efficacy beliefs), other people will contribute in the collective endeavour (collective efficacy beliefs), and that government will play their part in designing effective climate policies (institutional efficacy beliefs). The personal efficacy concept consists of two sub-concepts, as theorised by Bandura (1994): self-efficacy (the belief that one is able to engage in actions that contribute to a collective outcome or goal) and personal outcome expectancy (the belief that these actions contribute to the collective goal). The collective efficacy concept is similarly subdivided into two sub-concepts (see Koletsou & Nanc, 2011): collective efficacy (the belief that other people will perform behaviours needed to achieve a collective goal) and collective outcome expectancy (the belief that by acting collectively the collective goal can be achieved). The institutional efficacy concept refers to beliefs that relevant institutions, primarily national governments, will take effective action on climate change.

Self-Efficacy

Self-Efficacy refers to people’s beliefs in their capabilities to engage in actions needed to attain a particular outcome or goal. In the context of a collective problem, such as climate change, this refers to people’s beliefs that they are able to perform the actions (i.e. energy saving) that collectively contribute to a particular collective outcome or goal (i.e. climate change mitigation). Expected relationship with other sub concepts

Self-efficacy is expected to be associated with personal outcome expectancy, collective efficacy, and collective outcome expectancy, but to be independent from institutional efficacy.
Concepts:

EFFICACY BELIEFS

The Efficacy Beliefs concept refers to the beliefs in the effectiveness of personal and others’ actions contribute to a particular outcome or goal. In the context of climate change mitigation as a collective problem, and following Lubell's (2002) framework, this includes beliefs that personal actions can make a difference (personal efficacy beliefs), other people will contribute in the collective endeavour (collective efficacy beliefs), and that government will play their part in designing effective climate policies (institutional efficacy beliefs). The personal efficacy concept consists of two sub-concepts, as theorised by Bandura (1994): self-efficacy (the belief that one is able to engage in actions that contribute to a collective outcome or goal) and personal outcome expectancy (the belief that these actions contribute to the collective goal). The collective efficacy concept is similarly subdivided into two sub-concepts (see Koletsou & Nanc, 2011): collective efficacy (the belief that other people will perform behaviours needed to achieve a collective goal) and collective outcome expectancy (the belief that by acting collectively the collective goal can be achieved). The institutional efficacy concept refers to beliefs that relevant institutions, primarily national governments, will take effective action on climate change.

Sub concept: SELF-EFFICACY

Self-Efficacy refers to people's beliefs in their capabilities to engage in actions needed to attain a particular outcome or goal. In the context of a collective problem, such as climate change) this refers to people's beliefs that they are able to perform the actions (i.e. energy saving) that collectively contribute to a particular collective outcome or goal (i.e. climate change mitigation). Expected relationship with other sub concepts: Self-efficacy is expected to be associated with personal outcome expectancy, collective efficacy, and collective outcome expectancy, but to be independent from institutional efficacy.

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Structuring questions for reuse in the QDDT:

- Only core content is added at the question item level
- Responses are maintained separately and linked to the question by reference
- Valid responses are maintained and reused separately from the missings
How able do you feel you are to do things that limit your (own) energy use?
How able do you feel you are to do things that limit your (own) energy use?

Valid responses

- Not at all confident
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

- Completely confident

Missing
- Refusal
- Don't know

77
88
Questions:

How able do you feel you are to do things that limit your (own) energy use?

Missing values:

- Refusal
- Don't know
Response domains:

- ScaleDomain
- CodeDomain
- NumericDomain
- DateTimeDomain
- TextDomain

Not at all confident

Completely confident

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Response domains – Code list:

- Extremely positive 1
- (Somewhat) positive 2
- Neither positive nor negative 3
- (Somewhat) negative 4
- Extremely negative 5
- No impact 6

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Linking questions to concepts:

SELF-EFFICACY

Self-Efficacy refers to people’s beliefs in their capabilities to engage in actions needed to attain a particular outcome or goal. In the context of a collective problem, such as climate change, this refers to people’s beliefs that they are able to perform the actions (i.e. energy saving) that collectively contribute to a particular collective outcome or goal (i.e. climate change mitigation). Expected relationships with other sub-concepts

Self-efficacy is expected to be associated with personal outcome expectancy, collective efficacy, and collective outcome expectancy, but to be independent from institutional efficacy.

Question Items

ENRGYUSE - How able do you feel you are to do things that limit your (own) energy use?

Preview Question Item

ENRGYUSE

How able do you feel you are to do things that limit your (own) energy use?

Mixed; Mananged representation-185527408 v.1.0

Net at all confident

Completed confident

Missing

Refusal

Don't know

3.0

Specific version selected
Question constructs – the question as in the questionnaire:

Name: D2_ESS8

Universe: All respondents

Showcard:
- Card 25 ESS8.png
- D2_ESS8.pdf
- D2_ESS8-ddi32.xml

Question item:
How confident are you that you can do things that limit your energy use?
How able do you feel you are to do things that limit your (own) energy use?

We tried ‘how able’
But confidence seems the easiest solution
Compare current change to latest version:

**Current change**

```
question: How confident are you that you can do things that limit your energy use?

Intent: Mixed [ScaleDomain: -43817374 + Ref/DK]
RD-Ver: V1.0
```

**V 3.0**

```
question: How able do you feel you are to do things that limit your own energy use?

Intent: Mixed [ScaleDomain: -43817374 + Ref/DK]
RD-Ver: V1.0
```
Versioning:

- Select change type:
  - Saved as work in progress
  - Save as a version
    - Meaning change
    - Typo
  - Saved as new based on
  - Save as new
Versioning:

Select version rationale code:
- Conceptual improvement
- Real life change
- Add content element
- Other change

Add description
And save
The version number changes automatically based on the choice of the user.

**How confident are you that you can do things that limit your energy use?**

- Not at all confident
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

- Completely confident

**Missing**

- Refusal: 77
- Don't know: 88
Publications:

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<th>Publication packages</th>
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<th>Name</th>
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Internal publication for the ‘Pilot’ milestone

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Ideas for further development:

- Instrument sequences and flow
- Import to the tool
- Publication packages
- Depending on funding
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_Consultant_
Thank you for your attention

QDDT project site:
https://github.com/DASISH/qddt-client/wiki

Please contact us at: surveytools@nsd.no
QDDT Architecture

Angular 6 + Typescript
- No Javascript in dev tools, only in browser
- Typescript can transpile to ES3
- Supports «evergreen» browsers (Chrome, FireFox, Opera, Safari, and IE10/11)

Spring MVC API
- RESTful API
- JSON for free
- No need for a SOAP service stack

Spring security (OAuth2)
- Token based
- No state for requests

Persistence Layer implemented with Hibernate + Envers
- Revisions
- Database agnostic
- Since qddt is open source, we chose Postgres