Survey Design

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Survey Design

Research Question

How can a data resource portal be designed and implemented using Django framework to adhere to FAIR data principles, facilitating efficient metadata extraction, publishing, and indexability in research methodologies?

Constructs and Definitions

The survey is planned to measure the priority of potential requirements for the FAIR data principle. The survey by Martínez-García, Alvarez-Romero, Román-Villarán, Bernabeu-Wittel, and Parra-Calderón (2023) is for question-design reference in analyzing how the FAIR data principle can improve the research experience.

Prior Requirements for FAIR Data Portal

- **Metadata Necessity:** Determining essential metadata elements required by researchers for effective data publication and retrieval.

- **Technological Challenges:** Identifying common technical limitations when adhering to FAIR principles in existing data portals.

- **User Interface Preferences:** Understanding researchers' preferences in portal features for publishing and viewing datasets.

Survey Questions

Personal Information and Research Context

Please provide the following personal information (Open-ended questions):

1. Full Name: _____

2. Current Job Title: _____

3. Contact Email Address: _____

4. What type(s) of institution(s) do you conduct your research at? (Select all that apply)

☐ University / Academic Institution

☐ Government Research Lab

☐ Private Research Institute

☐ Corporate R&D Department

☐ Non-profit Research Organization

☐ National Science Foundation (NSF) Funded Project

☐ Independent Laboratory

☐ Other (please specify): _____

FAIR Data Principles Knowledge and Application

1. On a scale of 1 (not familiar) to 5 (very familiar), how would you rate your knowledge of FAIR data principles? (Closed-ended)

○ 1 - Not familiar

○ 2 - Slightly familiar

○ 3 - Moderately familiar

○ 4 - Familiar

○ 5 - Very familiar

2. Please describe any specific difficulties you have encountered with resource data portals in the context of FAIR data principles. (Open-ended)

Data Publishing and Use

1. How often do you publish datasets to any platform? (Closed-ended)

   ○ Daily

   ○ Weekly

   ○ Monthly

   ○ Rarely

2. Which platforms do you use for publishing your datasets? (Open-ended)

3. When publishing datasets, do you prefer to use a user interface or an API? Please select one. (Closed-ended)

   ○ User Interface

   ○ API

4. What are the main challenges you face when publishing datasets? (Open-ended)

5. How often do you search for and view datasets on any platform? (Closed-ended)

   ○ Daily

   ○ Weekly

   ○ Monthly

   ○ Rarely

6. Which search engine or website do you typically use to find datasets? (Open-ended)

7. On a scale of 1 (very poor) to 5 (excellent), how would you rate your overall experience with these platforms? (Closed-ended)

   ○ 1 - Very poor

○ 2 - Poor

○ 3 - Fair

○ 4 - Good

○ 5 - Excellent

Metadata and FAIRness Assessment

1. How satisfied are you with the availability of metadata on the resource landing pages you use? (Closed-ended)

   ○ 1 - Not satisfied

   ○ 2 - Slightly satisfied

   ○ 3 - Moderately satisfied

   ○ 4 - Satisfied

   ○ 5 - Very satisfied

2. Which of the following features would you most like to see implemented in a data portal to enhance its adherence to FAIR principles? (Select all that apply)

   ☐ Resource Landing Page Displaying Helpful Metadata Information

   ☐ Jupyter User Interface for Publishing Resources

   ☐ Globus Integration

   ☐ Resource Metadata Extraction

   ☐ FAIRness Evaluator Integration

   ☐ FAIRness Analysis Report Generation

   ☐ Project Manager

   ☐ File Manager

   ☐ Other (please specify): _____

Experience with FAIRness Evaluators

1. Have you ever used a FAIRness evaluator such as FAIRshake, FAIREvaluator, or any other similar tool? (Closed-ended)

   ○ Yes

   ○ No

2. If you answered 'Yes' to the previous question, please describe your experience using the FAIRness evaluator. What did you like and dislike about it? (Open-ended)

3. What are your expectations when using a FAIRness evaluator? Please provide specific features or capabilities you think are essential. (Open-ended)

4. On a scale of 1 (very poor) to 5 (excellent), how would you rate your overall satisfaction with the FAIRness evaluator you have used? (Closed-ended, only answer if you have used a FAIRness evaluator)

   ○ 1 - Very poor

   ○ 2 - Poor

   ○ 3 - Fair

   ○ 4 - Good

   ○ 5 - Excellent

5. In your opinion, what improvements could be made to FAIRness evaluators to better assist researchers in assessing and improving the FAIR compliance of their data? (Open-ended)

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Score Calculation and Interpretation

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In constructing the score calculation and interpretation for a survey that utilizes a five-point Likert scale, numerical values are assigned to each response option. Strongly

disagree corresponds with a score of 1, and strongly agree corresponds with a score of 5. This scoring system allows for a quantifiable measure of respondents' attitudes or beliefs regarding each statement.

For the multi-select questions where respondents can choose more than one option, a binary scoring system is implemented. An option that is selected is scored as 1, and an option that is not selected is scored as 0.

To interpret the findings, a composite score for each construct is calculated by averaging the scores of all questions in that construct part. The average score less than 2 represents a negative attitude towards existing FAIR data resource portal and much space for improvement. The score ranging from 2.0 to 4 may indicate a mild desire for the improvement in the portal. A score higher than 4.0 may suggest a positive experience to existing FAIR resource data portal.

Example of the Survey

The link to the example is: SurveyMonkey

References

Martínez-García, A., Alvarez-Romero, C., Román-Villarán, E., Bernabeu-Wittel, M., &
    Parra-Calderón, C. L. (2023). Fair principles to improve the impact on health
    research management outcomes. *Heliyon*, *9*(5).