Data Extraction Template – PIAs in the Wild

Study:

<table>
<tr><td colspan="6">Demographics of the publications</td></tr>
<tr><td colspan="3">• Authors names, publication date, title, journal, and citation count
• Authors' affiliations and countries</td><td colspan="3">(This data has already been automatically extracted from Rayyan)</td></tr>
<tr><td colspan="6">Publication Types</td></tr>
<tr><td></td><td>Articles</td><td></td><td>Conference paper</td><td></td><td>Book</td></tr>
<tr><td></td><td>Book chapter</td><td></td><td>Thesis</td><td></td><td>Other _____</td></tr>
<tr><td colspan="6">Research Goals and Research Questions</td></tr>
<tr><td colspan="3">• Mentioned research goals (e.g., "In this paper… (p. XX)")
• Mentioned main contributions
o Proposed models, conceptualisations, definitions, and theoretical frameworks for PIAs/DPIAs, organisational privacy, etc.
• Research questions and hypotheses</td><td colspan="3">• Research goal:
• Contribution:
• Research question:</td></tr>
<tr><td colspan="6">Definitions</td></tr>
<tr><td colspan="3">• Definitions for information privacy
o Privacy dimensions covered (e.g., transparency, consent, intervenability, security); and,
o Relevant legislation (e.g., EU GDPR, US CCPA, AU Privacy Act, HIPAA).</td><td colspan="3">• Privacy definition:
• Relevant regulations:</td></tr>
</table>

PIA and DPIA	
• Definition for PIA/DPIA • Main PIA/DPIA methodology used or addressed in the study • Other PIA/DPIA artefacts used in the study	• **PIA/DPIA definition:** • **PIA/DPIA methodology:** • **PIA/DPIA artefacts:**
Contextual Information	
• Country or jurisdiction • Organisation sector and context (e.g., IT, healthcare, banking) and public or private. • Type of project (e.g., industrial case, research project) • Type of assessment (e.g., self-assessment, independent assessment) • Other key stakeholders	• **Country or jurisdiction:** • **Organisation type:** • **Type of project:** • **Type of assessment:**
Participants & Study Details	
• Participant's selection criteria (i.e., inclusion and exclusion). • Sample size. • Participant type(s)	
Barriers and enablers	
• Barriers or challenges related to PIAs/DPIAs • Enablers and opportunities related to PIAs/DPIAs	• **Barriers:** • **Enablers:**
Conclusion and Future Work	
• Study results and relevant conclusions about PIAs in practice	
Research Type (select one or more, based on [1])	
	Validation Research: Techniques investigated are novel and have not yet been implemented in practice. Techniques used are for example experiments, i.e., work done in the lab.
	Evaluation Research: Techniques are implemented in practice and an evaluation of the technique is conducted. That means, it is shown how the technique is implemented in practice (solution implementation) and what are the consequences of the implementation in terms of benefits and drawbacks (implementation evaluation). This also includes to identify problems in industry.
	Solution Proposal: A solution for a problem is proposed, the solution can be

	either novel or a significant extension of an existing technique. The potential benefits and the applicability of the solution is shown by a small example or a good line of argumentation.
	Philosophical Papers: These papers sketch a new way of looking at existing things by structuring the field in form of a taxonomy or conceptual framework.
	Opinion Papers: These papers express the personal opinion of somebody whether a certain technique is good or bad, or how things should be done. They do not rely on related work and research methodologies.
	Experience Papers: Experience papers explain on what and how something has been done in practice. It has to be the personal experience of the author.
	Literature Review (or SOK) [2]: A literature review is an overview of the previously published works on a specific topic. The term can refer to a full scholarly paper or a section of a scholarly work such as a book, or an article. Either way, a literature review is supposed to provide the researcher/author and the audiences with a general image of the existing knowledge on the topic under question.
	Primary Research [3]: Techniques of original data collection or research direct from the target respondents. Primary research includes qualitative and quantitative research and can include surveys, focus groups, questionnaires, and interviews.
Further classification for Primary Research (based on [4])	
	Survey (quantitative) research provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population.
	Experimental (quantitative) research seeks to determine if a specific treatment influences an outcome. The researcher assesses this by providing a specific treatment to one group and withholding it from another and then determining how both groups scored on an outcome.
	Narrative (qualitative) research is a design of inquiry from the humanities in which the researcher studies the lives of individuals and asks one or more individuals to provide stories about their lives.
	Phenomenological (qualitative) research is a design of inquiry coming from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by participants.
	Grounded theory (qualitative) is a design of inquiry from sociology in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants.
	Ethnography (qualitative) is a design of inquiry coming from anthropology and sociology in which the researcher studies the shared patterns of behaviours, language, and actions of an intact cultural group in a natural setting over a prolonged period.
	Case studies (qualitative) are a design of inquiry found in many fields, especially evaluation, in which the researcher develops an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals.
	Convergent (mixed methods) is a form of mixed methods design in which the researcher converges or merges quantitative and qualitative data to provide a comprehensive analysis of the research problem.
	Explanatory sequential (mixed methods) is one in which the researcher first conducts quantitative research, analyses the results and then builds on the results to explain them in more detail with qualitative research.
	Exploratory sequential (mixed methods) is the reverse sequence from the explanatory sequential design. In the exploratory sequential approach, the researcher first begins with a qualitative research phase and explores the views of participants.

	Complex designs with embedded core design (mixed methods), the core designs can augment an experiment by, for example, collecting qualitative data after the experiment to help explain the quantitative outcome results.
	Other, other types of primary research that are not classified under Creswell's research design types (e.g., generic qualitative data analysis).
Shot explanation for choices:	
Contribution Types (select one or more, based on [5][6])	
	Model: Representation of observed reality by concepts after conceptualisation.
	Theory: Construct of cause-effect relationships.
	Framework: Frameworks/methods related to PIAs or DPIAs.
	Guideline: List of advice.
	Lessons Learned: Set of outcomes from obtained results.
	Advice: Recommendation (from opinion).
	Tool: A tool to support PIAs or DPIAs.
Short explanation for choices:	
Relevant references from the paper (e.g., snowballing, source for definitions…)	
• None	

Critical Appraisal

For primary research, conduct the critical appraisal using the CEBMa checklists [4][5] either for quantitative or qualitative studies.

Critical Appraisal of a Qualitative Study [7]									
1. Did the study address a clearly focused question / issue?	2. Is the research method (study design) appropriate for answering the research question?	3. Was the context clearly described?	4. How was the fieldwork undertaken? Was it described in detail? Are the methods for collecting data clearly described?	5. Could the evidence (fieldwork notes, interview transcripts, recordings, documentary analysis, etc.) be inspected independently by others?	6. Are the procedures for data analysis reliable and theoretically justified? Are quality control measures used?	7. Was the analysis repeated by more than one researcher to ensure reliability?	8. Are the results credible, and if so, are they relevant for practice?	9. Are the conclusions drawn justified by the results?	10. Are the findings of the study transferable to other settings?

1. Explain decision for question 1…

2. ...

Critical Appraisal of a Cross-Sectional Study (Survey) [8]											
1. Did the study address a clearly focused question / issue?	2. Is the research method (study design) appropriate for answering the research question?	3. Is the method of selection of the subjects (employees, teams, divisions, organizations) clearly described?	4. Could the way the sample was obtained introduce (selection)bias?	5. Was the sample of subjects representative with regard to the population to which the findings will be referred?	6. Was the sample size based on pre-study considerations of statistical power?	7. Was a satisfactory response rate achieved?	8. Are the measurements (questionnaires) likely to be valid and reliable?	9. Was the statistical significance assessed?	10. Are confidence intervals given for the main results?	11. Could there be confounding factors that haven't been accounted for?	12. Can the results be applied to your organization?

1. Explain decision for question 1…

2. …

References

[1] Wieringa, R., Maiden, N., Mead, N. et al. Requirements engineering paper classification and evaluation criteria: a proposal and a discussion. *Requirements Eng* 11, 102–107 (2006). https://doi.org/10.1007/s00766-005-0021-6

[2] Literature review. (2023, January 23). In Wikipedia. https://en.wikipedia.org/wiki/Literature_review

[3] Doyle, C., 2016. *A dictionary of marketing*. Oxford University Press.

[4] Creswell, J.W. and Creswell, J.D., 2017. *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

[5] Kuhrmann, M., Diebold, P. and Münch, J., 2016. Software process improvement: a systematic mapping study on the state of the art. *PeerJ Computer Science*, 2, p.e62.

[6] Shaw, M., 2003, May. Writing good software engineering research papers. *In 25th International Conference on Software Engineerin*g, 2003. Proceedings. (pp. 726-736). IEEE.

[7] CEBMa, “Critical appraisal checklist for a qualitative study,” Retrieved (22/Dec/2021). https://cebma.org/wp-content/uploads/Critical-Appraisal-Questions-for-a-Qualitative-Study-July-2014-1.pdf, 2014.

[8] CEBMa, “Critical appraisal checklist for cross-sectional study,” Retrieved (22/Dec/2021). https://cebma.org/wp-content/uploads/Critical-Appraisal-Questions-for-a-Cross-Sectional-Study-July-2014-1.pdf, 2014.