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Mapping and sorting open-source communities. A precondition to study ignorance

Knowledge hiding
Individuals hide knowledge they have due to the fear of blaming or social comparisons. Example: reward systems implemented by coding platforms (Vasilescu et al., 2014)

Categorial blindness
Profession's specific norms which can block that dominant perspectives of a profession are questioned. Example: computer science curricula without ethics (Malazita & Resetar, 2019)

Uncomfortable knowledge
Organisations ignore topics that might become relevant for them in the future.
Example: startups adopt suboptimal technical solutions (Aldaeej & Seaman, 2023)

Strategic ignorance
… refers to the use of non-knowledge as a resource to achieve strategic goals.
Example: companies paying 'lip service' to open source (Vasudevan, 2023)

Studying Ignorance in Open-Source Communities

- A particularly challenging aspect of software development are phenomena of ignorance, such as tacit knowledge, forgetting, or unawareness, that come with implementing, maintaining, updating, and upgrading increasingly complex pieces of software
  - ➢ Example: a forgotten and no longer maintained version of the open-source operative system Android still running on a mobile phone creates security risks such as identity theft).
- The study of ignorance as social phenomenon seems to be important to understand its consequences, which in many cases will be embedded in our everyday digital lives.
- Research on organizational ignorance has highlighted a variety of ignorance phenomena (Jalonen, 2023). We hypothesize that many of them are relevant in the context of open-source communities.

Open-Source Communities – Developing a Taxonomy

Motivation

- In order to study phenomena of ignorance, it is important to be aware of the structures of free, libre, and open-source software (F/LOSS) communities.
- Up to date, no systematic review of characteristics and classifications of open-source software development communities exists.
- Therefore, we carry out a systematic literature review in form of a meta-narrative review.

Goals

- Developing a taxonomy that takes into account existing typologies of open-source communities.

Methodology – Systematic Literature Review

- A systematic literature review in form of a meta-narrative review allows to study "topics that have been conceptualized differently and studied by various groups of researchers within diverse disciplines" (Snyder, 2019, p.335).
- It aims at providing an overview of how the research on the topic has progressed over time and how it developed across research traditions.
- It is mainly done by content and thematic analysis.
- Besides the exploration of existing research on a topic, the methodological approach aims at synthesising the research by creating an over-arching narrative (Wong et al., 2013).
- The overall approach is as follows:
  1. Systematic identification of research published on open-source communities.
  2. Identification of the disciplines and research traditions in which the research is grounded. Analysis of their understanding of F/LOSS communities including definitions and characterisations.
  3. Analysis of these conceptualisations in order to reveal the narratives corresponding to those traditions.
  4. Based on research traditions specific narratives a meta-narrative and its associated taxonomy will be developed.

Research Questions

1. What are the main research traditions that have considered the broad topic area of open-source communities?
2. How these communities are conceptualized within these research traditions?
3. What insights can be drawn from the comparison of conceptualisations? In how far it is possible to combine them?

Search Strategy

a) Search in electronic databases using keywords,
b) Double-sided snowballing (backward and forward search),
c) Manual search.

- Keywords and databases used are shown in the following table:

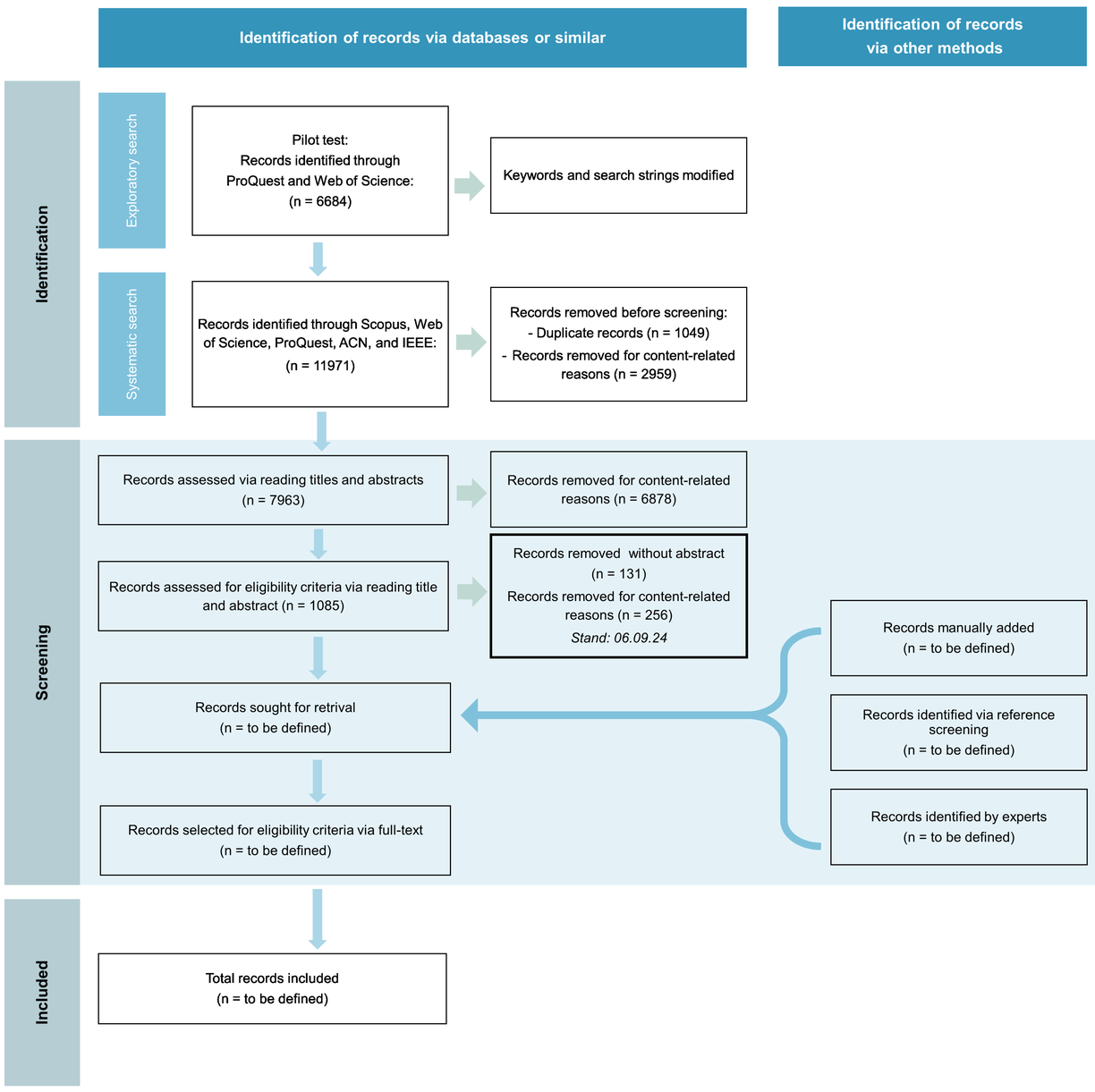
Platforms	Keywords		
	Research Subjects	Boolean Operators	Traits
• Multidisciplinary scientific databases: Scopus, Web of Science, and ProQuest. • Computing- and engineering–specific libraries: ACM Digital Library and IEEE Library.	• open-source community • coding community • programming community • software development community • social coding community • organis(z)ation	AND / OR	• taxonomy • typology • conceptualis(z)ation • classification • framework • definition • characteristics • aspects

Eligibility criteria

- Qualitative, quantitative, and mixed-methods as well as non-empirical studies
  a) written in English,
  b) published between 1984 (a few months after Richard Stallman announced the GNU Project) and 2024 (to be up-to-date), as
  c) articles, reviews, book chapters, books, articles in conference proceedings, or thesis.

First results

- Total number of records identified: 11.971
- All the publications were exported (using RIS files) to Eppi Reviewer 6 to be screened for inclusion in the review.
- SMD conducts the screening in two rounds: title and abstract, and full-text.
- Presently, both reviewers are set to start the second screening round.



Meta-narrative review process – modified PRISMA 2020 flow diagram (Page et al., 2021)

Outcomes of the first screening

- A wealth of concepts associated to open-source communities research.
- Identification of three main research traditions:
  - ➢ F/LOSS communities as composed of individual developers and how they interact
  - ➢ Open-source communities as innovative organisations and part of ecosystems
  - ➢ Socio-cultural understandings of free, libre, and open-source communities

More information

Online access to poster and references

Online access to protocol

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