

Sustainable SLR characteristics

- SLR should report **reliable results** i.e., **mitigate threats to validity** reducing the uncertainty level of researchers
- SLR should follow a conduction process that **complies with conduction standards** to ensure quality
- SLR should follow a conduction process that is **iterative** and concentrates on the main changes in the protocol during the **pilot test**.
- SLR should **have long-term goals** aiming at **impacting the research area and the community** around (including SE researchers and practitioners) over a long period of time
- Researchers should avoid research waste: (i) **evaluating if an updated SLR already exists on the same topic**, (ii) **reusing components from the previous SLR**; and (iii) **publishing outputs that are useful for target audience**
- Items of SLR protocol** (e.g., search string, selection criteria, included studies, etc.) and other elements (e.g., raw data extracted) should be learnable and **accessible, reusable, modifiable and adaptable**.
- SLR should have a **documentation that is detailed, easily understandable, auditable, and accessible** to others (researchers, practitioners, and others).
- SLR over their whole life cycle (i.e., while the SLR is conducted, update, and/or replicated) should be **continuously assessed** and **continuously documented**, i.e., SLR should be **continuously updated**
- Components** of SLR (e.g., search string, selection criteria, and other elements like raw data) should be **reused** in the **update of SLR**
- Researchers should **make accessible all evidence found in the SLR** (i.e., selected studies) as well as all associated data (e.g., raw extracted data) aiming to keep the viability of future SLR updates.
- Researchers while conducting SLR should make decisions and **adopt practices that minimize the negative impact on current** (e.g., saving efforts by automating tasks) and **future researchers** (e.g., documenting correctly and providing accessible recommendations for practitioners)
- Stakeholder needs** should be **translated into research questions** to be answered by SLR.
- SLR should **provide results that are useful to a wider community** not just fulfilling their particular needs or from specific research groups
- SLR results should **positively impact a research area**
- SLR should be produced with **responsible use of resources** (e.g., time, human effort, and monetary cost) and should be conducted aiming at reducing the time consumption (e.g., by adopting automation tools)

Sustainability Indicators

- Study reliability
- Compliance with standards defined for conduction/update
- Usage of iterations and pilot tests
- Long-term goals and research impact over time
- Documentation quality
- Communication among stakeholders
- Acessibility of SLR artifacts
- Knowledge of stakeholders about the research domain
- Continuous update
- Experience of team members in SLR conduction
- Participation/collaboration of stakeholders
- Research waste
- Improvement of SLR reusability
- Research usefulness and impacts over community
- Accessibility of support technology
- Usage of tools to support SLR
- Components reuse
- Knowledge sharing/transfer
- Resources usage

Critical Factors for Sustainability in SLR

- Usage of **feasibility studies**
- Usage of **iterative process**
- Rich **communication**
- Knowledge of stakeholders** about the research domain
- Maintenance of SLR**
- Experience of team members** in SLR conduction
- Effective **participation of stakeholders** (researchers and SE professionals) in SLR process
- Improvement of SLR **reusability**
- Usage of **refactoring** techniques
- Maturity** of support technology
- Accessibility** of support technology
- Usage of **tools to support SLR**
- Efficient **knowledge sharing and transfer**
- Usage of techniques that **minimize the resources consumption**
- Efficient **management/usage of resources**