

# Literature surveys

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# What is a literature survey/review?

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- A systematic and thorough search of all types of published literature in order to identify as many items as possible that are relevant to a particular topic
- Identify what is already known in a particular topic
- One of the most important and laborious steps in the research process
- Convey to the study readers about the work already done, knowledge and ideas that have already established

# Consist in ...

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- The selection of available documents and the effective evaluation of these documents in relation to the research being proposed
- Seeks to describe, summarize, evaluate, clarify the literature about the subject
- Evaluative report of information found in the literature related to the selected subject

# Is NOT

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- An annotated bibliography
- A list of unrelated sources
- An argument about the importance of own research

# Why is needed?

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- Identification of a research problem
- Development or refinement of questions
- Orientation of what is known and not known about an area of inquiry to ascertain what research can best contribute to knowledge
- Determination of any gaps in knowledge
- Discover of unanswered questions about subjects, concepts or problems
- Determination of a need to replicate a prior study in different settings

# Helps to...

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- To narrow a problem
- Identify if the proposed research is needed
- Form a starting point for own work and give scholarly authority to that work
- Identify the relevant theoretical or conceptual frameworks
- Describe of strengths and weaknesses of methods and instruments previously used
- Plan the methodology of the present study
- Develop research instruments and improve research methodologies

# Helps to...

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- Identify areas of prior knowledge to prevent duplication of effort
- Point a way forward for further research
- Learn how others have defined and measured key concepts
- Identify problems faced by the previous researchers while studying same topic
- Identify a suitable design and data collections methods for the current study
- Identify data sources that other researchers have used

# Internet sources

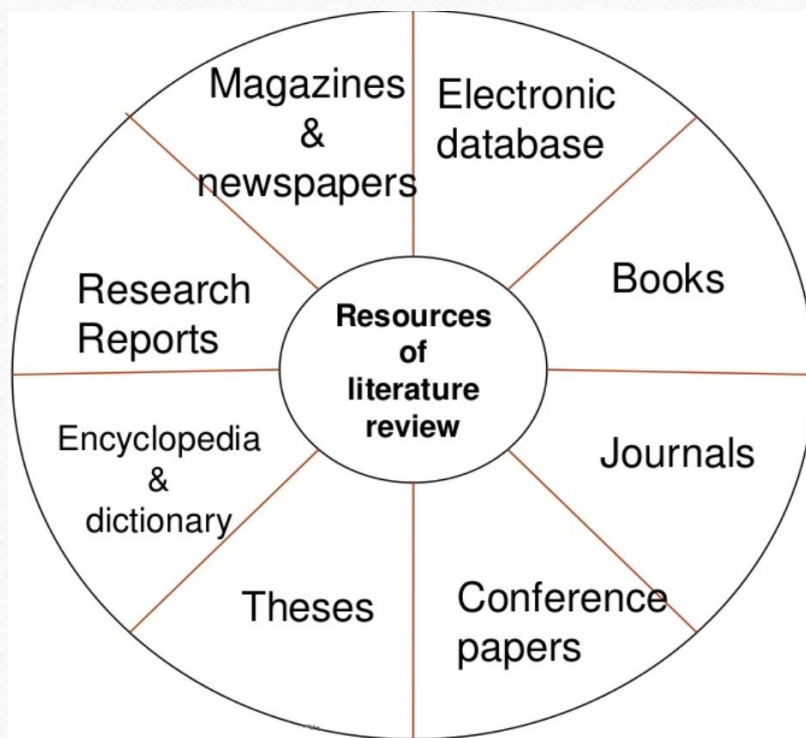
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- Internet can provide practically instant information on most of the topics
- Bear in mind that anyone can post information in the Internet so the quality may not be reliable
- The found information may be intended for a general audience and is usually less detailed



# Sources

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# Electronic sources

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- Computer-assisted literature that is searchable
- Through:
  - General search engines (e.g. Google)
  - Catalogues for scientific literature (e.g. Web of Knowledge, Scopus, IEEE Xplore, ProQuest)
  - Specialized catalogues (e.g. ERIC for education or PubMed and Medline for medicine)
  - Web sites of on-line journals, conference series, printing houses
  - Online databases

# Example: Using Google Scholar

The screenshot shows the Google Academic search interface. The search bar contains the text "Model-driven approach". Below the search bar, the results are displayed in a list format. On the left side, there are filters for "Oricând" (When) and "Sortați după relevanță" (Sort by relevance). The "Oricând" filter is set to "Din 2020". The "Sortați după relevanță" filter is selected. There are also checkboxes for "includeți brevete" (include patents) and "include menționări" (include citations), both of which are checked. A "Creați aler." (Create alert) button is also visible. The search results list three articles, each with a title, authors, a brief description, and a link to a PDF version. The first article is "NDT. A model-driven approach for web requirements" by M.J. Escalona and G. Aragón, published in IEEE Transactions on Software Engineering in 2008. The second article is "ModacLOUDS: A model-driven approach for the design and execution of applications on multiple clouds" by D. Ardagna, E. Di Nitto, and P. Moghagheghi, published in Modeling in 2012. The third article is "A model-driven approach for real-time road recognition" by R. Aufrere, R. Chapuis, and F. Chausse, published in Machine Vision and Applications in 2001. The PDF links are [PDF] us.es, [PDF] archives-ouvertes.fr, and [PDF] researchgate.net respectively.

Google Academic

Model-driven approach

Articole Aproximativ 304.000 (de) rezultate (0,18 sec.)

Oricând

Din 2020

Din 2019

Din 2016

Interval specific...

Sortați după relevanță

Sortați după dată

includeți brevete

include menționări

Creați aler.

NDT. A **model-driven approach** for web requirements [PDF] us.es

M.J. Escalona, G Aragón - IEEE Transactions on software ..., 2008 - ieeexplore.ieee.org

Web engineering is a new research line in software engineering that covers the definition of processes, techniques, and models suitable for Web environments in order to guarantee the quality of results. The research community is working in this area and, as a very recent line ...

☆ 99 Citat de 215 ori Articole cu conținut similar Toate cele 8 versiuni

ModacLOUDS: A **model-driven approach** for the design and execution of applications on multiple clouds [PDF] archives-ouvertes.fr

D. Ardagna, E. Di Nitto, P. Moghagheghi... - ... on Modeling in ..., 2012 - ieeexplore.ieee.org

Cloud computing is emerging as a major trend in the ICT industry. While most of the attention of the research community is focused on considering the perspective of the Cloud providers, offering mechanisms to support scaling of resources and interoperability and ...

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A **model-driven approach** for real-time road recognition [PDF] researchgate.net

R. Aufrere, R. Chapuis, F. Chausse - Machine Vision and Applications, 2001 - Springer

This article describes a method designed to detect and track road edges starting from images provided by an on-board monocular monochromatic camera. Its implementation on specific hardware is also presented in the framework of the VELAC project. The method is ...

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# Other examples

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- Using Science Direct
- Using Scopus
- Using Web of Knowledge
- Using IEEE Xplore
- Using ResearchGate

# Books

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- Basic understanding of a topic
- Topic overview
- Accessible writing style
- Authoritative: written by subject experts & specialist publishers
- Categories: textbooks, handbooks, dictionaries & enciclopedias

# Journals

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- Vital sources for up-to-date research
- Provide information of various specialized topics
- Articles have references to other important contributions in the subject
- Articles are reviewed by an editorial board

# Other sources

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- Conference papers
  - Providing the latest research
  - Providing information about people in different research areas, helpful in tracking down other works by the same researcher
- Government or corporate reports
  - National or regional trends and needs
- Student theses
  - Treat the findings with more caution than published research

# Steps of literature reviews

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1. Collect bibliography
2. Thematic organization
3. Deeper readings
4. Write individual sections
5. Integrate sections



# Step 1: Collect bibliography

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- Select articles, books and other types of literature related to the topic
- Annotation of each source of related literature
- Write a first brief critical synopsis of each review

## Step 2: Thematic organization

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- Find common themes of the topics
- Organize the literature under these themes, subthemes or categories
- Arrange the literature under certain subtheme in chronological manner
- Establish coherence between themes
- Establish coherence in the literature discussed under a certain theme

## Step 3: Deeper readings

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- Based on the knowledge gained through primary reading, it aims to have a better understanding about the topic
- Discover specific literature materials which are more relevant for the targeted research
- Search for more literature by the authors or methodologies that were identified to be of high interest
- Set aside some less relevant areas or articles from the previous steps
- Integrate the new readings into the literature review draft, reorganize themes
- As the search progress, one might rethink the scope and terms of own research

# Step 4: Write individual sections

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- Start writing a synthesis under each thematic section by using the previously collected drafts or annotations
- Reread the article and revise the initial annotations according to the accumulated knowledge
- Related articles under each theme are organized such that the articles are related to each other
- Focus on the theme of the section showing how the articles are related to the theme and how they are related to each other (rather than focusing on describing individual articles)
- Keep in mind that the cited articles are used as evidence to support the critique of the theme (rather than using the theme as an angle to discuss each article individually)

# Step 5: Integrate sections

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- List the thematic sections
- Tie the sections together with:
  - Introduction
  - Methodology
  - Conclusion
- Revisions in the sections to show how they relate to each other and to the overall subject
- Assist the readers with ‘umbrella’ sentences at the beginning of paragraphs
- Brief ‘so what’ summary sentences at the section ends

# [Step 5] Introduction

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- Define the general topic / issue / area
- Point out to one of:
  - overall trends
  - conflicts in theory, methodology, evidence
  - gaps in research
  - single problem
  - new perspective of immediate interest

## [Step 5] Methodology

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- Establish the author's point of view of the need for a literature survey
- Explain the criteria to be used in analyzing and compare literature
- Explain organization (e.g. according common denominators like chronology, conclusions of authors, specific objectives, qualitative approaches)

# [Step 5] Conclusion

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- Summarize the major contributions of significant studies and articles to the body of knowledge
- Evaluate the current state-of-the-art by pointing out at least some of the followings:
  - Major methodological flaws
  - Gaps in research
  - Inconsistencies
  - Areas or issues pertinent for future studies



# General rules

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- Be specific & succinct
  - Briefly state the specific methodologies or other important points
  - A literature survey is not a place for long quotes or in-depth analysis
- Be selective
  - Narrow down a lot of information into a small space
  - Those most relevant to the review's focus
- Focus of current topic
  - Superseded by more recent work?
  - If it is not current, it is important for historical background?
- Reference citations
  - Do not list references in the bibliography that are not directly cited

# Relying on other people reports ...

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- Ensure evidence for claims
  - What evidence is offered? It is relevant and sufficient?
- Focus on sources of evidences:
  - Are the sources reliable?
- Referring original sources
  - Focus in citing the material that originates with each reference
  - If the reference author cites another source of the ideas, track and use the original