RECOMMENDATIONS FOR ANALYSING LITERATURE SOURCES AND PROVING THE ORIGINALITY OF THE DOCTORAL DISSERTATION TOPIC

Analysing existing literature and electronic information sources (hereinafter "source analysis") in the chosen research area – i.e. the identification, analysis and synthesis of existing knowledge – is **the starting point for the substantiation** of the originality of the doctoral dissertation topic. **The originality of the doctoral dissertation topic must also be proved by searching:**
  ➤ primary and secondary databases of scientific publications (e.g. Web of Science, EIFL Direct, etc.),
  ➤ doctoral dissertation databases (e.g. ProQuest Dissertation & Theses Global, etc.) and
  ➤ patent databases (e.g. PatentoScope, EspaceNet, etc.),

based on the use of relevant keywords and subject tags. A summary of the most topic-related **publications, doctoral dissertations or patents** should also be provided, and an appropriate **comment, proving the distinctness of the proposed doctoral research,** should be added.

The source analysis in the chosen research area includes:
  • searching for reliable, accurate and up-to-date sources on the selected topic;
  • reading and summarising key points and message(s) derived from these sources;
  • synthesising key ideas, theories and concepts included in a summary of what is already known in the chosen research area;
  • discussing and evaluating these ideas, theories and concepts;
  • identifying areas of discussion or controversies in the selected research area;
  • preparing the ground for the discussion of existing ideas in the future, new research;
  • describing the expected original scientific contribution.

SELECTION OF KEYWORDS AND SUBJECT TAGS

Keywords ("KW" as the abbreviation for the English word "Keyword") concisely identify a particular research problem. At the same time, they are used to find relevant sources in electronic databases. The keyword may be a noun (e.g. "method") or a noun phrase with adjectives (e.g. "advanced computer method"). When searching by a keyword in electronic databases, one obtains a list of electronic sources which contain the keyword anywhere in the text. In principle, the scope of sources searched by keywords is very broad. In science, it is usually advisable **to use up to five keywords** or phrases **to define the content of a work.**

Subject Tags ("SU" as the abbreviation for the English word "Subject") are words or word phrases used to describe the content of individual information sources in a database. When searching by subject tags (i.e. descriptors) in electronic databases, one obtains a list of sources on the same topic. Searching by subject tags is the most accurate way to search databases. However, it is not easy to determine which subject tags are used in each database. Controlled glossaries,

classifications and drop-down lists of subject tags that individual databases contain and offer are usually used. The scope of sources searched for by subject tags is, in principle, much smaller.

The differences between keywords and subject tags when searching for sources in electronic databases are:

KW Keywords	SU Subject Tags
They are words in natural language that describe a particular research problem.	These are predefined words from a "controlled glossary" and used to describe the contents of individual information sources in a database.
More flexible search – keywords can be combined in many ways.	Less flexible search – the term from a controlled glossary needs to be chosen.
Keywords are located anywhere in the text – not necessarily related.	Only the title and subject tags are searched for the content of information sources, where usually the most important words appear for the given content.
The search may result in either too much or too little information sources.	The search result is related to the focus of the topic.
The search results may contain many irrelevant information sources.	The search results are always relevant information sources.

The supervisors and librarians at the University Library of Maribor or faculties can help in defining suitable keywords or subject tags and designing a search strategy.

SEARCH AND SELECTION OF SOURCES

The selected sources must be up-to-date for a chosen research problem. The exception is "classic works" of leading authors in a specific scientific field, creators of established hypotheses, theories and concepts. The source overview covers all sources that address the chosen research problem from as many different angles as possible. One needs to ensure a balance between important scientific monographs and current scientific articles. There is **NO** answer to the question: "How many books and scientific articles do I have to review?" This depends on the nature of the research problem or on whether the doctoral dissertation is designed as a polemic with existing knowledge – then the literature review will be longer – or if it involves new empirical research. It is crucial to establish the limits of existing knowledge in the chosen research area by reviewing existing literature.

> A good starting point for finding relevant sources are lists of references in some of the most sought-after scientific works in the field of the chosen research problem that the authors have used in their research. In doing so, it is quite easy to identify key theories and relevant authors in the chosen research area, as well as other relevant sources.

Relevant literature can be found in various library catalogues and databases. The COBISS+ library catalogue is used for predominantly Slovenian information sources, while an advanced search engine (UM: NIK) and a guide to electronic information sources are available for mainly foreign

literature. The Web of Science, Scopus and ProQuest Dissertations & Theses Global databases are foremost recommended, but it is advisable to search also in other information sources, including Google Scholar and other available information databases.

> **Ask yourself questions such as:**
> - What sources do I need? Are theoretical, methodological or empirical approaches predominant?
> - What sources are available (e.g. magazines, newspapers, monographs, government documents, databases, etc.)?
> - What sources dominate my chosen research area?
> - Was the search for the sources broad enough for me to find all relevant sources?
> - Has the search for sources been focused enough to exclude irrelevant sources for the research topic in question?
> - Is there a good enough, adequate sample of existing sources for my research problem?

Review the information sources you found and identified as potentially relevant. Focus on chapter summaries, article summaries and tables of contents. Think about how the identified information source will contribute to emphasising and solving your research problem. If the answer is "no" or "not much," **discard the source.**

Then read the selected sources carefully. Consider the following questions:

> - Find the key points discussed by the author. Are they clearly defined?
> - What evidence did the author present in support of the central idea of the information source?
> - How convincing are the reasons, proving the author's point of view?
> - Could the evidence be interpreted in another way?
> - Which research method did the author use (e.g. qualitative, quantitative, experimental, etc.)?
> - What is the theoretical framework that the author laid out?
> - How did the author relate theory and practice?
> - Has the author critically evaluated available information sources in the research area concerned?
> - Has the author also included literature that contradicts his point of view?
> - Are the research data credible – i.e. are they based on a reliable method and accurate information?
> - Can you break down the arguments put forward – identify the gaps between them?
> - What are the benefits and limitations of this particular information source?
> - What is the contribution of this particular book or article for your doctoral dissertation?

When asking yourself these questions, keep a close eye on your answers. These will come in handy for later research work. All selected sources that are relevant at this stage are already an integral part of your doctoral research source base. It is therefore advisable to include them in the list of sources to be used in your doctoral research. It is recommended that you create a systematic digital catalogue of the sources used with EndNote X9 software.

The Content Evaluation of Sources

The content evaluation of the selected sources has two essential aspects, namely:

> - Producing a summary of the selected source's content, together with a brief description of the importance of that source for the research problem.
> - Own comment on the content of the selected source, which includes own analysis of the arguments for a particular source, including an assessment of the strengths and weaknesses of the evidence presented, as well as the definition of distinctness according to the research topic.

A paragraph or two on each selected source is usually sufficient to justify the content of the selected source. There are several ways to organise the selected sources: e.g. chronologically, present relevant theories, group sources by topic, key ideas, concepts, etc. The sequence of thoughts must be clear, current, accurate and interesting. Be critical of the key insights from selected sources. Assess what is crucial and what is of secondary importance. Summarise in your own words! Be careful when interpreting the evidence and justifying your views.

Do not generalise. Make sure you express yourself correctly and use correct notations.

> Ask yourself questions such as:
> - Have I considered different points of view of the research problem?
> - Does the review of sources provide the reader with clear and useful information about the research problem in question?

PROVING THE ORIGINALITY OF THE DOCTORAL DISSERTATION TOPIC

It is relatively easy to prove (justify) the originality of the proposed doctoral research or any other research following a proper content evaluation of the available sources. The originality of the proposed research should be outlined in a way to show that the expected research results **upgrade** or **supplement existing knowledge** or **completely redefine** the chosen research area, based on the performed source analysis. The originality of the results concerning the current state of knowledge in the selected research area should be defined very clearly. Based on well-hypothesised and thorough source analysis, a paragraph or two is usually sufficient for this purpose.

> Ask yourself questions such as:
> - Have I identified the research problem precisely enough? What research questions define my research problem? Have I summarised the essence of the research with them?
> - Have I considered the different points of view of the research problem sufficiently?
> - Have I sufficiently reasoned the expected results of my research concerning the review of existing knowledge?

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Recommended sources:

1. *Literature Reviews.* (18.10.2019). Kent: University. Available at: https://www.kent.ac.uk/learning/resources/studyguides/literaturereviews.pdf
2. Randolph, J. J. (2009). A Guide to Writing the Dissertation Literature Review. Practical Assessment, Research & Evaluation, 14 (13), str. 1-13.