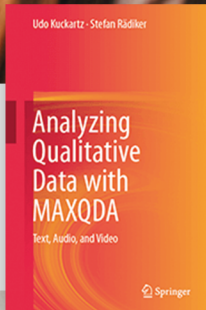




Literature Reviews with MAXQDA



Extended excerpt from „Analyzing Qualitative Data with MAXQDA“, Udo Kuckartz & Stefan Rädiker, (2019), Springer.

Free Guide
English

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www.maxqda.com

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Introduction

Working with specialized literature is a core element of many scientific disciplines. It is difficult to imagine a report for a project, master's thesis, or dissertation in which previous research has not been systematically analyzed and presented (Creswell, 2016, pp. 58–66). As more and more publishers make their journals and publications accessible online, the creation of literature reviews has become easier and more efficient.

MAXQDA is suitable for day-to-day work with literature and the creation of literature reviews (for example, the preparation of theory chapters and research reports) as well as for systematic reviews and the preparation of research results in meta-analysis. In particular, MAXQDA can be used to manage notes and create summaries to support the writing process. When working with literature, bibliographic information (author, year of publication, etc.) must be distinguished from the content of the literature. MAXQDA focuses primarily on the content and is not a specialized reference management software, however, data from such programs can be imported into MAXQDA for further processing.

In this guide:

- Working with bibliographic data and full texts
- Importing data from reference management programs and (online) databases
- Everyday tasks with literature and summaries
- Conducting literature reviews
- Options for creating systematic reviews

Note: This booklet is an expanded and updated version of the chapter "Working with Bibliographic Information and Creating Literature Reviews" contained in the book "Analyzing Qualitative Data with MAXQDA. Text, Audio, Video" by Udo Kuckartz & Stefan Rädiker (2019) published by Springer, Cham.

<https://link.springer.com/book/10.1007/978-3-030-15671-8>

Working with bibliographic data and full texts from reference managers

MAXQDA offers you the option to import bibliographic data from reference management programs such as Mendeley, Endnote, Citavi and Zotero. Like MAXQDA, these reference managers use project files, meaning databases, containing all collected bibliographic information. The smallest unit of such a project is a bibliographic reference (author, title, etc.) which may also contain links to websites, keywords, abstracts, full texts and other information.

MAXQDA is compatible with all reference management programs that are able to export their literature databases in RIS format, which is a standard format for bibliographic information. This is the case with all mainstream literature management programs such as Citavi, DocEar, Endnote, JabRef, Mendeley and Zotero, i.e. you can transfer selected or all literature entries from these programs to MAXQDA. With the following programs it is possible to import the assigned full texts into MAXQDA in addition to the literature references:

- Citavi
- Endnote
- Mendeley
- Zotero

When imported into MAXQDA, each literature entry becomes its own text document. If full texts are imported, MAXQDA automatically connects the full text to the literature entry with an internal link. The individual information in the literature entries is automatically coded for later analysis so that, for example, all titles or abstracts can be compiled and searched. The attachments can be automatically coded during the import with the keywords assigned to them, and the notes for a literature entry can be saved as a document memo with the corresponding attachment. The following picture shows that MAXQDA creates two document groups when importing references including associated full texts, "REFERENCES" and "REFERENCES > ATTACHMENTS", in this case only one reference has been imported (Bryman 2007) and the full text has been saved in the document group for attachments.

-  **Documents**
- ✓ •  REFERENCES
 -  **Bryman, Alan - 2007**
- ✓ •  REFERENCES > ATTACHMENTS
 -  Bryman (2007). Barriers to integrating quantitative and qualita

File breakdown into references and attachments when importing RIS data

The RIS file format for bibliographic data

RIS is the short form for “Research Information System Format”. RIS files are simple text files in which all exported literature entries are listed one after the other. RIS files contain so called “tags”, which consist of two letters and are followed by the corresponding information. Important tags include for example:

TY – Type of reference, always marks the beginning of a new entry

ID – Unique identification number for each entry

AU – Author

TI – Title

PY – Publication date

ER – Closes entry, always located at end of entry

A detailed description of all RIS format tags can be found on Wikipedia at [https://en.wikipedia.org/wiki/RIS_\(file_format\)](https://en.wikipedia.org/wiki/RIS_(file_format)). An example of RIS source data is listed below:

```
TY - BOOK
AU - McLuhan, Marshall
AU - Fiore, Quentin
TI - The medium is the message: An inventory of effects
PY - 1967
CY - New York, NY
PB - Bantam Books
ER -
```

Export literature data from Citavi, Endnote, Mendeley, or Zotero

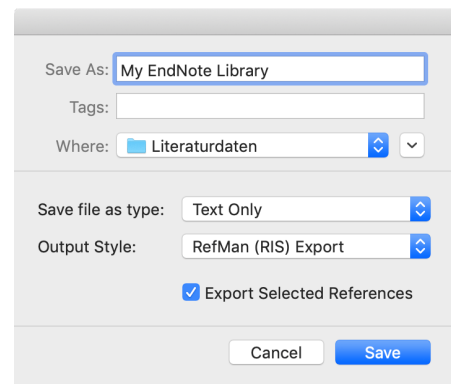
Before importing literature data into MAXQDA, you must export the desired data from your literature management program in RIS format. Exporting works in a similar way for all four programs.

Export from Citavi

1. Select all entries to be exported in the list of references on the left. If you want to export all entries, no selection is necessary.
2. Start the export wizard via *File > Export > Export...* In the first step it may be necessary to add the "RIS" filter via *+ Add export filter*.
3. In the next step, select *Save to text file:* and click *Browse...* to specify the file name and location for the file.
4. If you want to perform exports of this type again in the future, save the procedure as an "export template" as a last step.

Export from Endnote

1. Select the literature entries you want to export.
2. Select *File > Export...* from the main menu.
3. Enter a file name and select a directory.
4. Set the file type to "Text Only" and the output style to "RefMan (RIS) Export" as shown in the following picture. If this output style is not available, open the selection list and select "Select Another Style..." at the top, where you can search for the output style.
5. Click *Save*.



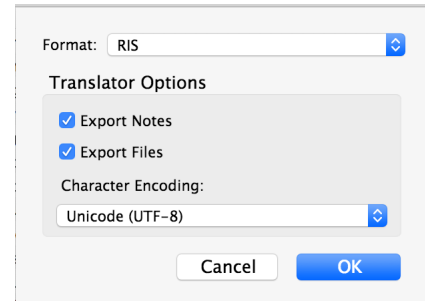
Export from Mendeley

1. Select the literature entries that you want to export.
2. Select *File > Export...* from the main menu.

3. Assign a file name and select a location.
4. Set the file type to "RIS - Research Information Systems (*.ris)".
5. Click [Save](#).

Export from Zotero

1. Right-click on a collection and choose [Export Collection...](#) Alternatively, choose [File > Export Library...](#) from the main menu to export the entire library.
2. In the appearing dialog select "RIS" as the format.
3. If you want to export the notes and the associated files (especially the full texts), make sure to check the corresponding boxes for [Export Notes](#) and [Export Files](#).
4. After clicking [OK](#), assign a file name and select a directory.
5. Click [Save](#).



Import and automatic pre-coding in MAXQDA

RIS files can be imported into MAXQDA via [Import > Reference Manager Data](#). A selection dialog box will then appear in which the relevant file with the extension RIS or TXT is selected. During the import, the following occurs:

- A document group "REFERENCES" is created in the "Document System".
- All literature entries are added to the newly created document group as individual text documents. The entries are sorted alphabetically and marked with their own symbols.
- The document name consists of the surnames and first names of the authors as well as the year. In the case of two authors these are linked with "&", in the case of three or more authors only the first author is mentioned and "et al." is added.

The screenshot displays the MAXQDA software interface with three main panels:

- Document System (Left):** Shows a hierarchical view of documents. Under 'REFERENCES', a document 'Abe, Ryosuke - 2019' is selected. Below it, 'REFERENCES > ATTACHMENTS' shows a link to 'Abe - 2019 - Introducing autonomous buses and taxis Quantifyin.pdf'.
- Code System (Bottom Left):** Shows a hierarchical view of codes. Under 'REFERENCES', the 'KEYWORDS' subcode is expanded, listing various terms like 'Autonomous driving', 'Driver interaction', 'Individual behaviour', 'Insurance', 'Old people', 'Responsibility', 'Risk classification', 'Self-localization', 'Transportation system', and 'Trucks'. A blue box highlights 'Keywords as codes'.
- Document Browser (Right):** Displays the content of the selected document 'Abe, Ryosuke - 2019 (20 Paragraphs)'. It shows a list of RIS tags on the left and their corresponding values on the right. A blue box highlights 'Bibliographic information as text document' for the first few tags. Another blue box highlights 'Link to full-text PDF' for the 'L1_Link to PDF' tag, which points to the full-text PDF of the document.

Imported literature data in MAXQDA

- In the “Code System” a code “REFERENCES” with the two subcodes “RIS” and “KEYWORDS” is generated. The code “RIS” contains all RIS tags used in the import file as subcodes, e.g. “Type of reference” or “Abstract”. The code “KEYWORDS” contains all keywords assigned in the literature references as subcodes.
- When importing, all references are automatically coded by coding each text section with the corresponding RIS code.
- Each keyword in the literature reference is coded with the corresponding keyword in the code system.
- DOI links are inserted into the text as hyperlinks, so that you can access the online version of a publication directly if required.

If attachments are imported, the following will also happen:

- A document group “REFERENCES > ATTACHMENTS” is created in the “Document System”.

- All attachments are imported into this document group as separate documents.
- The documents retain their file names and are sorted in alphabetical ascending order of their references. The sorting of the document names is therefore not necessarily alphabetical and the same document names may occur several times, e.g. if there are several documents with “Table of Contents”.
- Comments in the attachments are imported as in-document memos, highlights in the text as coded segments.

And if references and attachments are imported:

- Internal links are additionally created, which link the literature reference with the corresponding attachments, so that you can jump back and forth between literature reference and full text with a single click. In the literature reference, the internal link can be found in the “Link to PDF (L1)” section (the name comes from the RIS format and also applies if it is a file format other than PDF). In the appendix, the internal link is placed at the beginning of the document.

Five pieces of information which may also be important for future selections are also stored as document variables:

- RIS_Type (Type of Reference) – text variable
- RIS_Author (First Author) – text variable
- RIS_Title (Title) – text variable
- RIS_Reference-ID (Identification number) – integer variable
- RIS_Year (Year of publication) – integer variable

These variables are created as system variables and cannot be changed by the user.

Document Variables

Data editor - All documents 20 Documents

Document group	Document name	RIS_Type	RIS_Author	RIS_Title	RIS_Year
LITERATURANGABEN	Abe,Ryosuke - 2019	JOUR	Abe,Ryosuke	Introducing autonomous buses and tax...	2019
LITERATURANGABEN > ANHÄNGE	Abe - 2019 - Introducing autonomous ...	JOUR	Abe,Ryosuke	Introducing autonomous buses and tax...	2019
LITERATURANGABEN	Baumann,Martina Fet al.- 2019	JOUR	Baumann,M...	Taking responsibility: A responsible res...	2019
LITERATURANGABEN > ANHÄNGE	Baumann et al.- 2019 - Taking responsi...	JOUR	Baumann,M...	Taking responsibility: A responsible res...	2019
LITERATURANGABEN	Blyth,Pascale-L.- 2019	JOUR	Blyth,Pasca...	Of C yberliberation and Forbidden Forn...	2019
LITERATURANGABEN > ANHÄNGE	Blyth - 2019 - Of C yberliberation and ...	JOUR	Blyth,Pasca...	Of C yberliberation and Forbidden Forn...	2019
LITERATURANGABEN	Botello,Bryan et al.- 2019	JOUR	Botello,Brya...	Planning for walking and cycling in an ...	2019
LITERATURANGABEN > ANHÄNGE	Botello et al.- 2019 - Planning for walki...	JOUR	Botello,Brya...	Planning for walking and cycling in an ...	2019
LITERATURANGABEN	Elgharbawy,M.et al.- 2019	JOUR	Elgharbawy,...	Adaptive functional testing for autono...	2019
LITERATURANGABEN > ANHÄNGE	Elgharbawy et al.- 2019 - Adaptive fun...	JOUR	Elgharbawy,...	Adaptive functional testing for autono...	2019

Imported variable values for each document

Working with literature data

Following the import and automatic pre-coding, the bibliographic data is made available in MAXQDA as normal text. This means the data can be searched, coded, linked, edited and have memos added for further qualitative and quantitative content analysis (Kuckartz & Rädiker, 2019). Now you can answer questions such as:

- How often are specific authors named?
- Which topics are represented?
- How has the focus on specific topics shifted?
- Are there more journal articles or monographs on a specific topic?
- To what extent have journal article titles changed over time?

Here are three different initial ideas for starting your analysis:

1. Right-click on a keyword in the code system and select the function *Activate Documents Containing this Code*. MAXQDA will then activate all literature entries and attachments to which this keyword has been assigned.

2. Double click on "RIS > Abstract" to open all abstracts in the "Coded Segments" overview. Start the *Smart Coding Tool* by clicking on the symbol bearing the same name in the toolbar to encode and systematize the abstracts.
3. Activate the document group "REFERENCES" and activate the code "RIS > Title" to list all titles in the "Retrieved Segments" window. In this window, click on the *Word Cloud* icon to start an analysis of the (most common) words in the title.

Organizing and analyzing literature and summaries with MAXQDA

Working with literature – both online and offline – is one of the most important activities not only in research and teaching, but also in NGOs, institutions and for the purposes of market research. Typical tasks when working with literature include finding and reading relevant publications, identifying and marking important points, understanding arguments, and extracting, compiling and comparing texts. MAXQDA is an excellent tool for these daily tasks. In a series of blogposts, Elgen Sauerborn (2014) and Uta-Kristina Meyer (2014) describe how they create summaries and notes while reading relevant literature for their research, and manage them with MAXQDA. Based on their work and our own experiences, we suggest the following procedure:

1. As far as possible, all available literature sources for the research are imported into a MAXQDA project.
2. Summaries are created as individual documents in MAXQDA, whereby the reference information (author, year, title) is used as the document name, ideally in the exact citation style which will be used in the later bibliography. Consequently, authors can be easily searched for in the “Document System” by their document name.
3. In-document memos, further information about the sources can be managed, such as questions arising from particular arguments, criticism of particular publications, or whether the source is important for your own work.
4. The “Code System” is created following the chapters of the report, with codes following the same order as in the later work. Summaries or parts of the original documents suitable for citation will be coded with these codes.
5. As the report is written, the corresponding codes are activated so all of the important coded segments are compiled in the “Retrieved Segments” window.
6. This basis makes writing easy, eliminating the risk of overlooking an important point or reference and helping the user to “write up” the work.
7. After completing the work, the sources, summaries, notes, and coded segments remain available. When you’re working on a similar topic at a later date, this work can be accessed, creating a foundation on which to add further references and summaries.

Creating literature reviews with MAXQDA

What is meant by the term “literature review”? Arlene Fink provides the following definition: “A research literature review is a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners”. (Fink, 2010, p. 3)

A literature review as explained in this way is conducted on a specific topic or research question. The objective is to determine the current state of research and/or the scientific discussion with regard to a particular field of knowledge. The focus may be on different pre-determined aspects, for example theoretical or methodological aspects. A literature review represents a specific form of secondary analysis, as it is not a matter of new, independent research but rather a review of research that has already been conducted. A literature review, like an essay, is frequently written by an individual researcher. It systematically presents substantial research results, identifies controversies, and summarizes the state of scientific discourse in a specific field. A literature review is always an explanatory text, not simply a list of sources.

Literature reviews can be created as embedded reviews (embedded within a dissertation or research report, for example) or as stand-alone reviews. The latter are frequently referred to as “systematic reviews”. As a rule, systematic reviews are concerned with the research results in relation to a specific question, and with identifying any gaps in the research. This is not usually the case with general embedded reviews, which is not to say that these are unsystematic or eclectic. Traditionally, however, stand-alone reviews focus more heavily on quantitative aspects.

Work phases when creating a literature review

Based on the work of Fink (2019), Boland et al. (2017), Hart (2017), Gough et al. (2017) und Heyvaert et al. (2016) six phases for the creation of a literature review can be identified:

1. Formulation of research questions and objectives of the review. The research question should be precisely formulated in order to lead the review.
2. Selection of bibliographic databases, which today are normally online databases.
3. Determination of search terms within these databases.
4. Application of practical and methodological criteria for the selection of high-quality scientific literature.

5. Conducting the review. This includes, among other aspects: importing bibliographic data and eventually full texts; definition of variables such as author, year of publication, etc.; thematic coding of significant text segments, writing notes and summaries.
6. Synthesis of results and writing up the review, either in the form of a qualitative description of results or in case of a quantitative meta-analysis as a calculation of statistical characteristic values and measures.

MAXQDA can provide valuable support in all phases, particularly in the thematic and content development of primary sources in phases 5 and 6. Before describing the possibilities offered by MAXQDA for this type of work, the differences between MAXQDA and reference management programs such as Endnote, Citavi, Mendeley, Zotero, etc. should be considered. Endnote and the like allow the collection, management and citation of primary, online and offline sources. The focus of these programs is the management of bibliographic input and the creation of bibliographies corresponding to the different regulations of a large number of scientific journals and publishers. For example, the widely-used Zotero program (www.zotero.org) searches for bibliographic information in online catalogs and booksellers such as Amazon, and allows this information to be stored in a local database and to be provided with keywords and metadata. Reference lists can later be exported in various citation styles (for example, in the widely-used APA style). While reference management programs focus on the bibliographic data, MAXQDA focuses on the content and allows for the thematic coding and systematic, qualitative and quantitative analysis of this content. MAXQDA is therefore not primarily used for the collection of bibliographic data (although this is possible), nor for the creation of reference lists for publications. However, as described above, MAXQDA allows the user to import bibliographic data from reference management programs.

But now, we return to a description of the phases of creating a literature review with MAXQDA. Literature reviews are valuable not only as overviews of the current state of knowledge in a particular field, they also situate the research within a wider context and debate within the scientific community. The six phases of creating a literature review are described in greater detail below.

Phase 1: Formulation of research questions and objectives of the review

Similar to a research project, a literature review begins with the formulation of the research field and question(s) as well as the objectives. However, the question is formulated somewhat more broadly than would normally be the case for a research project. If the focus is overly narrow, sources that are relevant but do not initially appear to be central to the research could be overlooked. In MAXQDA, the research question and

objectives are best presented in the form of a free memo (via Analysis > Free Memo) as in the following example:

Memo title: Literature search on data analysis and integration in mixed methods research

The goal of the literature search is to evaluate the current state of debate concerning the topic of data analysis/integration in mixed methods research. Well-known authors in the mixed methods research community see the integration of qualitative and quantitative as the primary challenge of mixed methods research. The review aims to compile the most important positions. Since mixed methods discourse is conducted in English, only English-language literature should be taken into account. The review will cover the years 2014-2016 and will be limited to the leading journal on this topic, the Journal of Mixed Methods Research.

Phase 2: Selection of bibliographic databases

The next step is a targeted search for sources that could present information about the topic in question. In a traditional library, literature is identified by means of keywords and keyword catalogs, retrieved from the shelves, then taken to the workspace and placed on the desk. When working with computers and searching in appropriate databases, the principle is similar. The researcher explores databases and scientific journals, saves search hits, and selects sources that are presumed to contribute to the review.

Next, it is important to decide exactly where and what to look for; in other words, to select the bibliographic databases and define the search terms. Normally the databases are online, and hundreds of public and private databases exist. The most popular international databases are PubMed (Medicine), MEDLINE (Medicine), ERIC (Education science), JSTOR (various), LexisNexis (economics and law), PsycINFO (Psychology), Social Science Citation Index and Sociological Abstracts (social sciences) (Fink, 2019, pp. 17–21). Also to be noted are private databases such as Springerlink, the portal for the Springer International Publishing AG, and the databases of journals and periodicals such as that from Sage Publications, which is indispensable for research in the fields of methods and methodology.

A further consideration is whether to include only English-language sources in the search.

Phase 3: Determination of search terms

After these specifications, the next step is to determine search terms. These could be single words or combinations of multiple words. Nearly all databases offer the possibility for advanced searches, in which you can

formulate more complex conditions, for example linking search terms with the logical operators AND and OR.

Example: In the Journal of Mixed Methods Research (JMMR), a search is conducted for all entries concerning the theme “data analysis”. The search is restricted to the years 2014-2016. Other possible search terms would be “triangulation” and “integration”, but in the following example the search is restricted to “data analysis”. The search on the JMMR website (<https://mmr.sagepub.com/search>) results in 57 hits.

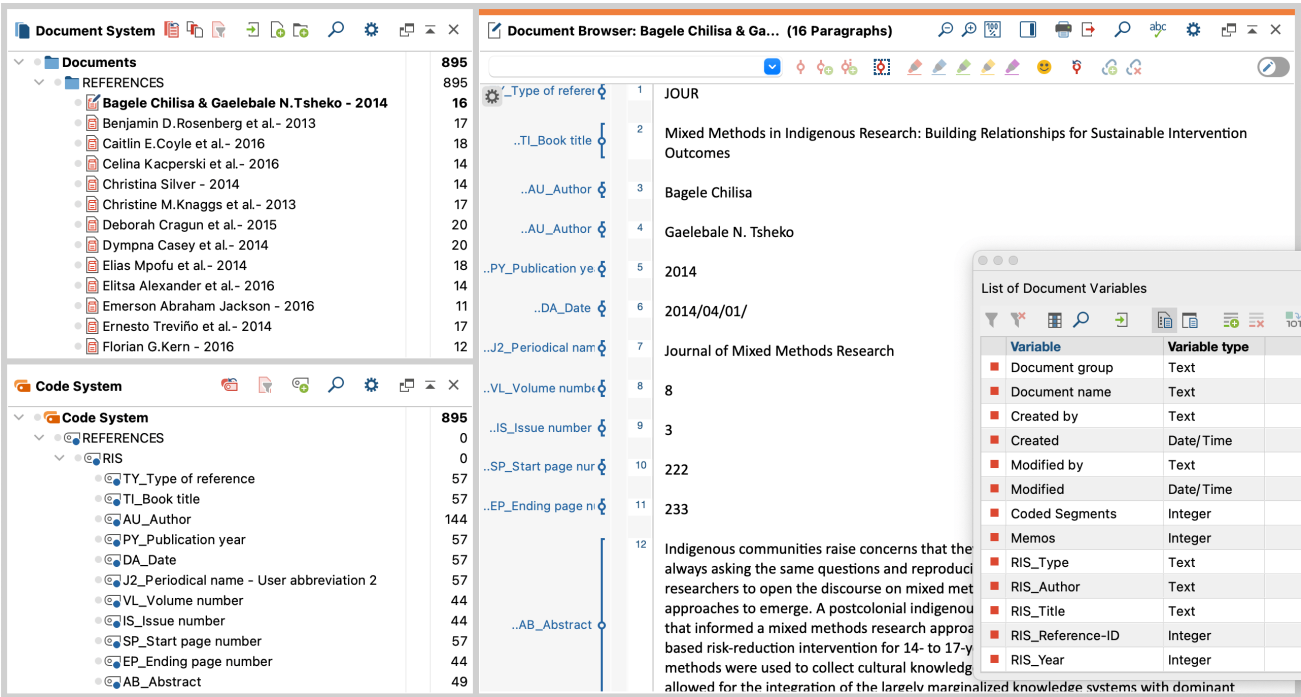
In the next step, the compilation of results on the website can be checked for relevance on the website, or the full list of results can be imported into MAXQDA and checked there. In this example, it is more efficient to import the results into MAXQDA. When exporting from the Sage Publications website, it is important to ensure that both the citation and the abstract are exported. The RIS format should be selected from the list of available formats. The file can be imported into MAXQDA via the menu function *Import > Reference Manager Data*.

Phase 4: Application of practical and methodological criteria for the selection of high-quality scientific literature

This phase concerns the selection of relevant literature, that is to say the literature that was found in the database search is now examined to determine if it falls within the narrower area of the research question, and whether it fulfills the objectives of the review.

Practical as well as methodological criteria of this selection process should be documented. Practical criteria are those which relate to the practical accessibility, language, and type of publication. For example, for a study on environmental awareness in Europe, only results in the most common languages, possibly only in English, would be considered. In addition, the search would be restricted to only the most important social science journals. Methodological criteria for this review could be, for example, the quality and manner of sampling, or the “seriousness” of the institution carrying out the study. It is possible that for methodological reasons, sources based on online surveys would be excluded because they used a convenience sample.

For the earlier example of the literature review of data analysis in mixed methods research, all of the bibliographic search hits were imported into MAXQDA. The sources now appear in the “Document System”. The following figure shows how MAXQDA appears after this information is imported.



Imported RIS file with search results in “Journal of Mixed Methods Research”

The RIS format tags are found in the “Code System”. Here it can be seen that an abstract is available for only 49 of the 57 sources. The list of document variables displayed on the right shows that five tags are also available as variables for later selections, namely type of publication, author, title, ID, and year of publication.

The next step is to systematically read each abstract in order to decide if the source is relevant or not. It is advisable to set up two (or more) new document groups to in the “Document System” to which the results can be moved according to their relevance. The names of the document groups should indicate their functions, for example “Relevant sources” and “Less relevant sources”. Sources that do not contribute to the review can be deleted immediately. If there is any doubt concerning where to assign a source when reading the abstract, the full text can be obtained by clicking the link coded with the tag „DO_DOI” or with the tag “UR_Web/URL” in the “Document Browser”. This will open the information page in the Sage Publications database, which contains a link leading to the full text (assuming you have access to the sources via your library). Reading the full text provides a solid basis on which to classify the text as relevant or less relevant.

Other variables which allow the user to make selections or comparisons and recognize trends can be defined in this phase of the literature review. For example, the variable “RIS_Year” allows for the creation of a table or chart showing the distribution of sources by year.

There may be other primary sources outside the results of the database search that should be included in the review. In principle, all types of sources, including audio and video sources, can be imported into MAXQDA. Sources such as books that cannot be borrowed may only be available as scanned copies. Such scanned sources can also be included in the literature review.

Hints for scanned sources: If no digitized version of a relevant source is available, the only option is to use scanned pages. This results in a photo or PDF file. Using software such as Adobe Acrobat, you can perform an OCR text recognition procedure. This is strongly recommended, as subsequent searches can be performed for words in the text and all word-related functions in MAXQDA including MAXDictio are also available for use.

If the sources have been classified according to their relevance, particularly relevant publications can be imported as full texts. It is best to create a new document group (for example, “Primary literature”) and to download and import full texts into this folder. Ideally, the full text and bibliographic reference should be linked:

1. Open the full text.
2. Open the bibliographic reference in the “Second Document Browser”.
3. Highlight the first word (or first paragraph) in the full text and select *Insert Internal Link* from the context menu.
4. Highlight the first word (or first paragraph) in the bibliographic reference and select *Insert Internal Link* from the context menu.

For many databases, particularly private databases, you may only download full texts if you have authorization to do so. This is the case at most universities, and all members of the university may have access. It may be necessary to log into the university network via VPN.

Phase 5: Conducting the review

The process of conducting a literature review varies depending on the nature of the research questions and the objectives of the review as well as the range of the sources. In addition, the process depends on the time available for the preparation of the review. If little time is available, you have to restrict the material and tighten the formulation of practical and methodological criteria (see Phase 4). In this case, your review will be based mainly on the abstracts and not on the more extensive full texts. The following are some of the possibilities MAXQDA offers for conducting a literature review:

Working with word clouds

What are the central themes of a text and the key terms that are used? These can be easily explored by right-clicking on the full text and selecting the Word Cloud option. Alternatively, you can create a word cloud for parts of the bibliographic data (titles or abstracts) by retrieving the relevant segments and starting the word cloud function in the “Retrieved Segments” window. Nonsensical words or words that are not relevant in the context of the review can be added to the stop list.

Exploring full texts and working with memos

In view of the abundance of publications available on almost every topic, it is often hard to read an entire book or journal article. Using the context search in the “Document Browser”, you can search specifically for the presence of key terms, which greatly reduces the extent of text passages that need to be read intensively. Questions which arise, alongside ideas and core statements, can then be stored as memos attached to the corresponding text passages. The overall assessment, evaluation and criticism of a text can be stored as a document memo in the “Document System”.

Emphasizing important text passages

Reading a text and underlining important points is a common practice. You can work in the same way when creating literature reviews in MAXQDA: five distinct colors are available for color coding text passages. The marked passages can be easily located at a later time. In some cases, it may be useful to mark the text passages with a thematic code rather than color coding.

Exploring the frequency of words and terms used in the sources

Using the word frequency function (part of the MAXDictio module), you can analyze the frequency of words in one or more documents. In addition, a differentiated word frequency analysis can be performed on documents, document groups and document sets. As with word clouds, nonsensical words can be added to the stop list and excluded from the analysis.

Writing summaries

Summarizing text and extracting interesting passages is one of the classic techniques of literature work. In MAXQDA, a document group “Summaries” should first be defined, in which all summaries and excerpts are stored. Next, select the option *New Text Document* from the context menu of this new document group. A new document will appear in the “Document Browser” in Edit Mode, where you can start to write a summary. If the full text has been imported, it can be opened in the “Second Document Browser”, allowing the user to read the source text and write the summary concurrently. The text segment and the corresponding summary can be linked using document links.

The name of the summary should also contain the author and year; furthermore, the summary should be linked to the bibliographic reference using the procedure described above.

Automatic coding of text segments

The text can be searched for interesting key words and the results coded automatically using the function *Analysis > Text Search*. The range of text passages to be coded can be freely selected by the user (search hit, sentence, several sentences, paragraph). Following automatic coding, the coded segments can be retrieved and explored further.

Manual thematic coding of significant text passages

It is possible to code the relevant text passages when the primary text is available, which is normally the case with journal articles. In this case, working with thematic codes that are as close as possible to the research questions in the scope of the review is recommended. By means of specific labeling, you can tag passages that are suitable for later quotations. For this purpose, a specific code, for example “Suitable for quotation” can be defined. Alternatively, the comment function or a weight score can be used. For each coded segment, a short comment can be added, in this case for example, “Quotation”. Later, in the Overview of Coded Segments, you can sort by the comment column so that all potential quotes are listed together. It is

also possible to assign a weight score to any coded segment. Later, you can retrieve just the text passages which have been coded under a selected theme or allocated a specific weight score.

Distinguishing, coding, and statistically analyzing different dimensions

For a specific content area in the literature, for example the research design, specific dimensions can be identified and defined as subcodes, for example “Explanatory sequential design”, “Exploratory sequential design”, or “Convergent design”. Using the option *Subcode Statistics* in the context menu of the “Code System”, the frequency of the different design types can be determined and displayed as a table or graph.

Visual representation of themes and sources

MAXQDA’s visual tools can also be used very effectively for literature reviews. We assume here that thematic coding of relevant texts has already taken place, either manually or using automatic coding of search items.

- The *Code Matrix Browser* displays the themes covered and their respective frequency per text in a comparative table.
- The *Code Relations Browser* displays the simultaneous occurrence of pairs of themes in a comparative table.
- The *Single-Case Model* (available in *Visual Tools > MAXMaps*) represents the coded themes and their respective frequencies for a selected source in a schematic diagram.
- The *Single-Code Model* (also available in *MAXMaps*) displays a selected theme and its coded segments, the code memo and the memos linked to the code in a schematic diagram.

Writing thematic summaries and creating summary tables

This technique uses MAXQDA’s function *Analysis > Summary Grid*. This makes it possible to write thematic compilations and present them in comparative tables (“Summary Tables”). In order to use this technique, it is a prerequisite that relevant text passages have been thematically coded beforehand.

Quantitative evaluation of themes

Quantitative aspects can also be relevant to literature reviews. For example, it is possible to sort and count sources according to variables (e.g. year of publication) and answer questions such as “How are the sources distributed over time?” or “Has the investigation of the topic ‘Data analysis/integration’ increased or decreased during the period of study?” Statistical tables with absolute and relative frequencies as well as bar

and pie charts can be created for thematic codes and subcodes in MAXQDA. More complex analyses including correlation analyses can also be carried out with the STATS module in MAXQDA.

Phase 6: Synthesizing your results and writing up the review

After most of the work has been completed in the first five phases, it is time to summarize your findings. When writing your review, the preparatory work of the first five phases comes into effect, that is to say, the results of the previous work should prepare you to write a well-structured text. In other words, you can build on the memos prepared in phases 5 and 6, as well as the displays such as summary tables, and visual representations, to write up your review.

There are two types of reviews:

1. A review in the form of a qualitative description of results (descriptive literature review); occasionally, quantitative results can also be included, such as the number of sources, their distribution over time, apparent trends, frequency of sub-topics, etc. The focus, however, remains a qualitative one.
2. A review in the form of a quantitative meta-analysis with calculations of statistical parameters and measures. Here, the results of statistical procedures are central, as in the case of a meta-analysis of attitude-behavior research, where average correlations in various spheres of activity are calculated and communicated.

According to Fink (2019), both types of literature reviews should always contain the following four parts:

- Purpose and objectives of the review
- Methods and sampling
- Results
- Conclusions

In the case of a quantitative meta-analysis, the methods section should be expanded with particular attention to the description and substantiation of the statistical methods used.

When writing your review, the following MAXQDA tools can provide valuable assistance:

- The Simple and the Complex Coding Query, with which you can locate previously classified text segments and text passages you have previously flagged as suitable for quotation.

- Memos, particularly the free memos written in phase 5 of the work on the review, from which you can copy and insert passages into the final text.
- Summary tables, with which compressed summaries of sources can be effectively compared and represented. You can also integrate summary tables into your review.
- The word frequency functions of MAXDictio, with which you can represent the usage of specific search items and semantic contexts.
- The graphical display options of MAXMaps, which in particular allow you to create concept maps.

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