

## Writing a Literature Review

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### **Abstract**

*Literature review or research synthesis is an essential component in research field. Novice and student researchers usually take it as a required burden in research, and present haphazardly under sub-topics in research. There is the problem of application and correlating LR with their studies. The main purpose of this paper is to present introduction of LR/research synthesis, its functions and methods in research. LR/research synthesis consists of searching relevant literature, discussing the findings and evidence, correlating the individual studies, interpreting critically, and synthesizing them to build an argument for future research. It is a review article based on qualitative research, but not based on primary data. This paper contributes to answer the questions of writing a LR or synthesis paper, and becomes a useful reference material to novice and student researchers of higher education.*

**Key words:** *Literature review, research synthesis, research gap, knowledge contribution*

### **1. Introduction**

#### **1.1. Background**

I, as a student and a novice researcher, have faced the problem of writing a review of literature in my theses and research articles. I, as a campus teacher, have to teach students writing a literature review in research paper and to respond the questions of students who are going to write theses. Sometimes, other teachers ask me about the ways of writing a literature review (LR). As a thesis supervisor and a reader, I have found some problems in the writing of literature review. College students and novice researchers feel a difficulty to write a literature reviews in their research works. Students from bachelor level to Ph.D. level take it a required burden and a challenging hurdle in their thesis writings and other research works. Novice teachers (researchers) overcome with great difficulty a hurdle of writing literature reviews in research articles and other research projects. It seems easy to write a literature review, and we teachers usually ask students to collect the books, articles and other research works related to their topics and write what they have said. Many students and other novice researchers give less priority in reading and writing it. There is a rare detailed discussion of the methodology for literature in formal classes. However, it is not easy task as students and novice researchers think, and it is not less important than other components as many researchers think and do in their research processes.

Literature review (LR) or research synthesis is a significant component in a research work. Without going through the literature reviews, no researcher can do a research work effectively. We need to go through literature review in a particular topic. New knowledge is based on the previous facts, information, skills, theoretical or practical concepts acquired through experience, education and research: "To push the knowledge frontier, we must know where the frontier is. By reviewing relevant literature we understand the breadth and depth of the existing body of the work and identify gaps to explore" (Xiao and Watson, 2017, p. 1). Reviewing existing relevant literature helps to identify research gaps in research works. It directs researchers to explore new knowledge, facts, information and theory; it adds new knowledge to the existing knowledge. This article discusses about writing a literature review, guides to produce it and carries successfully at the determined destination. It focuses more on adding value of literature reviews than providing just their narrative general overviews on research writing.

## 1.2. Statement of the problem

Novice researchers and college students up to PhD level do not usually consume more time in reviewing related literature. If some go for literature review, they select topics, determine objectives of the study and state the problem, then they go for some cheap sources rather than valid and reliable. Literature review must be on their interest areas before fixing titles and objectives. There is a lack of systematic reviews of related literature in research works. Literature review is presented haphazard and casual ways and only names of writers or researchers and titles are written in literature. There is the problem of methodology for reviewing literature.

### 1.3. Research questions

- a) What is Literature Review/research synthesis?
- b) What does it serve in research?
- c) What can be the procedures for an effective synthesis of literature?

### 1.4. Objectives

The major objective of this paper is to discuss and present the procedures for conducting literature review or research synthesis.

### 1. Research methodology of the study

This research paper has taken a survey on publications about literature reviews and methodology of literature reviews in academic researches. It has only included the studies of methods and procedures of writing a literature review. Literature reviews of a particular research topic are not included in this study. The sources collected for this study are from libraries, Google Scholar and other links in internet. The sources having keywords 'literature review', 'how to write literature review', 'methodologies of literature review', 'review synthesis' and 'qualitative and quantitative literature reviews' were collected and screened if they were relevant for this study. Note taking was used as a tool for data extraction from the relevant sources. The researcher has studied the collected sources within the context of the study, and used an inductive logic for the methodology of conducting literature review. Evidences have been obtained from the relevant sources. This research paper focuses on the practical implication of conducting literature review to formulate the research problem in research, especially in the academic field. The purpose of writing this article is to guide the researchers on how to synthesize the existing literature on a topic for research. It is useful to teachers and trainers in research as well.

## 2. Discussion of doing a literature review

### 3.1. What is a literature review (LR)?

A literature review is an indispensable step and component in research works, especially in academic research. A literature review refers to a re-view of existing knowledge and information on a particular topic. The literatures that are the previous studies and researches of a particular area and topic are reviewed in the course of a research. "A literature review is a written document that presents a logically argued case founded on a comprehensive understanding of the current state of knowledge about a topic of study. This case establishes a convincing thesis to answer the study's question" (Machi and McEvoy 2016 p. 28). When researchers have plans to do research, they must go in their interest areas and search what have been previously in their areas. They summarize and synthesize the previous ideas; this is the literature review in research. What is, then, not literature review? "Literature review is not annotated bibliography where you summarize and describe individual

sources on your topic, ...not a presentation of your own ideas, arguments, assumptions, ...not a position paper, and ...not simply mirror the current literature in the field” (Efron and Ravid 2019 pp. 3-4). LR correlates the existing multi-various ideas and concepts on a topic, synthesizes them and reveals the unanswered questions for further research.

Literature review can generally be written in two ways: simple or traditional and complex or systematic. A traditional literature review is a general overview with no clear methodological approach but with contextual and theoretical bases: “[It] is a written appraisal of what is already known ... with no prescribed methodology” (Jesson et al. 2011 n.p.). It is based on subjective summaries of the findings of the existing studies. A traditional review draws useful information and ideas with the titles and perspectives of the literature. A simple or traditional literature review is “to argue a position about the current state of knowledge on a topic” (Machi and McEvoy 2016 p. 25). A literature review should be a systematic study; a systematic review is “a review with a clear stated purpose, a question, a defined search approach, stating inclusion and exclusion criteria, producing a qualitative appraisal of articles” (Jesson et al. 2011 n.p.). It is a synthesis based on evidences of the literature: “[It] is a systematic way of collecting, critically evaluating, integrating and presenting finding from across multiple research studies on a research question or topic of interest. It is ‘systematic’ since it adopts a consistent, widely accepted, methodology” (Pati and Lorusso 2017 p. 1). A good literature review goes along with the focus of a research topic and gives a direction to a topic of your interest. “[It] 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 2014 p. 3). A literature review is not a heap of previous studies, but an ‘integration’ and ‘synthesis’ of the existing studies. It seems complex in nature because a complex or systematic literature review is “a review that extends the work of simple review to identify and define an unanswered question requiring new primary research” (Machi and McEvoy 2016 p. 22). In brief, a literature review synthesizes the existing knowledge and information on a research topic, and it helps the researcher to build a claim that s/he is going to do research: “Literature review is a library or desk-based method involving the secondary analysis of explicit knowledge, so abstract concepts of explicit and tacit knowledge are explored” (Jesson et al. 2011 n. p.). The existing body of information and knowledge are found in (e-)library. What is ‘systematic’? The word systematic means working in a fixed plan, structured, methodical and well-ordered way, but not haphazard way; it should follow a systematic approach in research. Jesson et al. suggest six stages of methodology for an effective systematic review: “define the research question, design the plan, search for literature, apply exclusion and inclusion criteria, apply quality assessment and synthesis” (n. p.). It discusses a research topic in the theoretical, practical and methodological contexts. A systematic review should go through the certain processes for interaction and analysis. “The terms *research synthesis* or *research review* or *systematic review* are often used interchangeably in the social science literature, though they sometimes connote subtly different meanings” (Cooper et.al. 2019 p. 6). I have used the terms literature review (LR), research synthesis or synthesis frequently throughout this paper because academicians nowadays use the term writing ‘synthesis’ in the place of writing LR to build more systematic LR writing in research.

### **3.2 Functions of literature review**

Literature review is an important component in research. It is not a required burden to gather the previous studies in a chapter in theses and dissertations or under a title in research articles. It has multifunction in research works. It directs researchers from the very beginning to the conclusion, and it helps readers to read the research works effectively. Researchers explore the existing knowledge and information in particular fields of research. The existing knowledge and information

of a particular field provide a foundation of knowledge on a topic. Literature review (LR) enhances the knowledge of research theory and philosophy, background, latest research and development, and research designs on a topic. The researchers come to know the existing conditions and knowledge on a topic and the left area or research questions from literature review; LR provides what is known and not-known on a topic. That left areas and not-known issues on a topic are research gaps. Therefore, LR or research synthesis helps to find out research gaps. This is the first step to set up research questions. It demonstrates the unsolved problems, unsolved questions and issues on a topic. LR helps to identify research problems and refine research questions. Objectives of a study are set to answer the research questions. Without LR, a researcher cannot determine the objectives of a research in a particular topic, and objectives may be repetitions. LR also helps to formulate a hypothesis of a specific topic based on objective study of the existing current literature in research. LR contributes to identify and determine theoretical frameworks, key terms and variables, new perspectives and supports, research methodology and techniques, and the research gaps (Baker 2016 p. 265). LR guides to good research. LR provides (in)adequate knowledge and information to a question of interest and moment of insight i.e. time of finding a gap (Abrams 2012 p. 189). A researcher moves to the further research based on prior literature. LR “facilitates theory development, closes areas where a plethora of research texts, and uncovers areas where research is needed” (Webster and Watson 2002 p. xiii). LR provides contexts for your research. LR also helps to formulate your research questions; LR demonstrates if the previous researches answer your questions on your topic of interest. If answered in prior literature, “your time can now be spent extending that work and contributing to knowledge, rather than unintentionally duplicating what is already known”. LR guides to make specific good and unanswered research questions that “will lead to original work that generates new insights” (Mattick, Johnston & Croix 2018 p. 106). LR makes you ensure whether your intended research questions were answered in prior literature or not. Therefore, LR is essential for determining research questions and “can address either theoretical or practical questions” (Knopf 2006 p. 127). The research questions demands particular research designs and draws a conclusion that contributes a new knowledge on your topic of interest. LR also evaluates the research designs and method applied in the prior literature; it draws pros and cons of those research methodologies on the related literature.

A literature review tells you if others have used procedures and methods similar to ones that you are proposing, which procedures and method have worked well for them and what problems they have faced with them. By becoming aware of any problems and pitfalls, you will be in a better position to select a methodology that is capable of providing valid answers to your research questions. (Kumar 2014 p. 52)

It guides to select specific research methodology and be careful to the possible drawbacks to your research. LR helps to identify a research gaps and declare the knowledge contribution on your interest area. The new and advanced finding on a topic is the contribution of knowledge; there comes to know the knowledge contribution by differentiating with the prior literature. “It enables you to show how your findings have contributed to the existing body of knowledge in your profession. It helps you to integrate your research findings into the existing body of knowledge” (Kumar 53). What and how your research is different and new insight from the previous researches; that is your contribution on your topic of interest. “Research syntheses ...pay attention to relevant theories, critical analyze the research they cover, try to resolve conflicts in the literature, and attempt to identify central issues for future research” (Cooper et al. 2019 p. 6). Therefore, LR or research synthesis is not a required burden in research project, but is an essential and useful element from the very beginning of formulating research problems, questions, objectives, research titles, hypotheses, research methodology, finding to a claim of contribution of knowledge on your topic of interest.

### 3.3 Processes of conducting LR

LR is an essential required component in research work. Some researches present it under the sub-topic, review of related literature, and others do not mention it in research papers. However, LR is essential to do effective research, and it at least avoids unintentional repetitions of the research topics. Doing a literature review is not merely to heap the previous literature, but present them in systematic ways. How to write a LR? There are some practices doing a literature review, i.e. looking for sources, searching the previous literature on a topic, selecting those literatures, analyzing and evaluating them, and organizing them. Internet/websites, bookshops and libraries are the major sources where researchers look for books, articles, reports, etc. They can visit to the organized institutions and the government offices to collect the materials for literature review. They may consult with professors and professional researchers for sources and guidance. The researchers should determine some key words on their topic of interest to search related literature in libraries and/or internet. For example, while writing this paper, the literature were searched by using some keywords like “literature review”, “review of the related literature”, “how to write a literature review”, “methods of literature review”, research synthesis, “how to synthesize the literature”, and “ literature review procedures”. LR in particular topics were not taken for this paper. LR that have discussed about the procedures of conducting literature reviews were only taken for this study. LR was conducted by keeping these above key terms in mind in libraries and internet (Google Scholar, webs) to limit the literature search to this study. The materials were screened by reading their abstracts (conducting literature reviews) and by identifying peer-reviewed journals and the established publishers. The researcher extracted the data (ideas, knowledge and information) concerning the definition of LR, types, importance, methods and process of LR from the collected materials. Therefore, while doing a literature reviews, initial steps are determining key terms of the area of your interest, evaluating the materials and publishers, and extracting the necessary data from the materials.

The extracted data from the literature can be used in two ways: as a stand-alone piece and as a background for empirical research (Templier and Pare 2015, cited in Xiao and Watson 2017 p. 2). LR as a stand-alone piece is used in writing a review paper that critically analyzes and synthesizes the prior literature, and presents the understanding on a specific topic. This paper has used literature review as a stand-alone piece. LR as a background for empirical research is used for doing a research paper that is a empirical research based on primary data, and is taken as background information to identify the research problems, research gaps, research designs and knowledge contribution on the area of your interest. It helps to conduct an original study. LR can either be in a separate sub-topic or integrate the literature as supports within the analysis and interpretation of raw data in empirical researches. These two styles depend on institutional policy and authors.

LR can be theoretical, empirical, policy and methodological reviews. Theoretical literature review refers to the review of the existing knowledge of a theory that the researcher is going to apply to the research.

Reviewing the theoretical literature in your area of research should help you answer questions such as: What is already known about the issue in particular or the area in general? Which theories are used and discussed in this area? Which concepts are used or debated? What are the theoretical or methodological debates or controversies in this field? What questions remain? What has not yet been studied? (Flick 2014 p. 67)

Theoretical review may consist of a whole theory or a concept from the whole theory. “A *theory* is a general explanation of why variables work together, how they are related to each other, and especially how they influence each other. As a unified set of constructs, a theory helps to explain



how seemingly unrelated empirical observations tie together and make sense” (6). The state of understanding a theory helps to make a new meaning in the discussion of primary data. Empirical literature review is the review of empirical studies i.e. “the first published accounts of particular sets of research findings” (Galvan and Galvan 2017 p. 3). Empirical research mainly consists of introduction, literature review, methodology, data analysis and interpretation, findings and conclusion. The reviewers should analyze critically these sub-topics of the research works. “You should read the empirical literature to see how other people in your area work, what has been studied, what has been focused on, and what has been left out” (Flick 2014 p. 68). This empirical review guides identifying a research gap and confirming the findings of your research. LR can be a critical review of policies and rules on a specific area of your interest; not all researches may need it. Flick suggests reviewing the existing relevant research methodology in theoretical and empirical researches; the reviewers should identify what methods, why and how other people have used in their research “to avoid problems and mistakes mentioned in the literature” (69). It helps to select research designs for further study. The reviewers should read critically what other researchers have said on the area of your interest. In the writing process of a literature review, the reviewers must synthesize the relevant literature. The researchers analyze critically and synthesize the explicit knowledge using their tacit knowledge in LR.

Some academicians call LR a synthesis review; they ask their students and novice researchers to write a synthesis paper in the research process. What is a synthesis paper? A synthesis paper refers to the process of making an argument by synthesizing other people’s literature. LR restates others’ ideas and information by either summarizing, paraphrasing or quoting. The researchers should not only gather others’ literature, but also identify the similar and different ideas, knowledge and findings; the review should analyze critically others, and develop your argument for further research. “A synthesis is a discussion that forges connections between the arguments of two or more authors, [and] ... creates a context for your own argument” (164). A synthesis presents others’ claims, gist and compares them; the researchers make their own arguments for further studies. “...Mak[ing] comparisons to the ideas of others in the process of developing your own argument” (Greene and Lidinsky 2015 p. 151) is called a synthesis in LR. “Synthesizing the sources means bringing together separate elements from the individual studies or pieces of evidence and weaving them logically together to produce a coherent whole in the form of an argument, a theory, or a conclusion (Pope et.al, cited in Efron and Ravid 2019 p. 177). The process of synthesis writing squeezes others’ literature and helps to make your own argument; it sets research gap and your research contribution.

The question often raises, “How to write a research synthesis?” There may be various techniques to synthesize others’ ideas and knowledge to make an argument. Cooper et al. suggest some steps in research synthesis: formulating the problems, searching the literature, gathering information from studies, evaluating the quality of studies, analyzing and integrating the outcomes of studies, interpreting the evidence, and presenting the results. The researchers should think about the research question asked at each stage of the synthesis, their primary function served in the synthesis, and procedural variation that might produce differences in conclusions. Wilson provides practical advice on designing and developing a coding procedure suitable to writing research synthesis; some of them are empirical relationship of interest, eligible designs and required methods, required data, delimitations and restrictions, time frame, report identification, study setting, participants, methodology, treatment manipulation, dependent measures, effect sizes, iterative refinement, structure of data, and coding forms and manuals (pp. 153-172). Synthesis draws an argument from others’ similar and different research findings. Efron and Ravid give some strategies under traditional-narrative literature to synthesize others: “grouping the sources, comparing and contrasting sources,

exploring contradictory findings and adopting a critical stance” (pp. 177-184). LR is not only to give summaries of others’ research but also interprets others’ findings and synthesizes to build an argument for further research.

Researchers can use two strategies- quantitative narrative and meta-analysis – to synthesize the quantitative data in literature. Quantitative narrative synthesis refers to a synthesis of “quantitative data by using words and text” from others’ studies, and meta-analysis synthesizes statistical findings from others on the area of your interest and gives a research gap for future research. Synthesis of qualitative literature can follow the strategies like meta-ethnography, meta-synthesis, critical interpretive synthesis and thematic analysis to synthesize the prior sources; synthesis of mixed-studies literature uses segregated synthesis, sequential exploratory and explanatory synthesis, and convergent synthesis (Efron and Ravid 2019 pp. 185, 190 & 196). It discusses both quantitative and qualitative findings together. “To compose an effective synthesis, you must (1) make connections among ideas in different texts, (2) decide what those connections mean, and (3) formulate the gist of what you’ve read” (Greene and Lidinsky 2015 p. 153). The researchers can use the strategies of note-taking of “author and source, gist of argument, examples/illustrations, counterarguments, and what I think” (p. 167). Research synthesis or LR is carried out by collecting, selecting, evaluating, grouping, making connections, drawing their meanings and identifying gaps for future research. Galvan provides some guidelines for synthesizing literature prior to writing a review: 1. Consider your purpose and voice, 2. Consider how to resemble your notes, 3. Create a topic outline that traces your argument, 4. Reorganize your notes as your argument, 5. Mark differences among literature, 6. Identify gaps within each literature for further research, 7. Describe relevant theories on your area, 8. Consider how individual literature relate to theories, 9. Summarize your review, 10. Present conclusions and implications, 11. Direct yourself to future research on a area of your interest, 12. Gather evidence to elaborate your notes (pp. 73-82). These strategies help to advance writing a research synthesis or LR. According to Cooper et al. (2019), LR or research synthesis contributes to increase precision and reliability and finding claims, but it has also limitations in “correlational nature of review evidence”, “post hoc nature of synthesis nature” and “need for new primary research” (520). LR or synthesis improves data and develops its usefulness in research. A good research synthesis should incorporate research problems, research evidence, evaluation of methods and implementation of literature, integration of evidence from studies, interpretation of evidence, and procedures and result of synthesis.

Oliver suggests reviewing literature to place themes in order in the direction of your research interest, compare literature critically, and discuss significant literature in your area. LR or research synthesis can be linked with your study, research questions, methodology and recent development in the area, primary data, findings and results. The researchers then can show their contribution of knowledge on the area of their interest. The structure of synthesis writing may consist of headings, sub-headings, sub-divisions, theoretical perspectives and methodology used during your research. SQ3R (survey, question, read, recall and review) technique can be helpful in writing LR/synthesis. Reading should be active and critical. Note-taking habits should be developed to organize LR well and avoid the risk of plagiarism, and it takes researchers forward to synthesize the previous literature and to the area of their interest.

### 3. Conclusion

Literature review (LR) or research synthesis is an essential step in research. Researchers should search relevant literature on the area of their interest, discover the findings and evidence of the studies, analyze critically the studies, correlate the individual studies, and synthesize to a research

argument for future research. LR or synthesis serves as the background knowledge to identify the research problems and questions, research gaps, research methodology, findings and conclusion, and the contribution of knowledge in research. Research synthesis presents others' literature, interprets and correlates their findings, and draws a synthesis from their individual studies. From this synthesis, the researcher builds a research argument that generates a research gap for future research. Writing a synthesis is not a required burden in research but refines and advances a research work.

This paper is a review article, and lacks empirical research examples. It has not included LR of specific topics, but included only definitions of LR/synthesis, its functions and methods of writing. This paper answers the query of writing a LR or a synthesis paper to novice and student researchers. It may be a reference material for the students of research programmes and other novice researchers.

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