

Guide Smart Reading

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For : ZENTHESIS COMMUNITY

Why?

First of all, I would like to congratulate you of being selected for this PhD position. I know that having to read too many scientific research papers may seem as a hell. But the good news is that you are not obliged to do it all by yourself. Thanks to the technological ascension, you have read and analyze faster the literature more than we did back then when I did my PhD 2015-2018. Before, guiding you through the smart protocol I built just for you, I desire you to acknowledge one important lesson: Literature review is not about reading in detail every article from the abstract to the conclusion or even to the references.

Literature review is like doing market research for your startup idea, you have to analyze the market, what is already done and what is now missing- research gaps- so you can elaborate the smart and powerful research questions that the literature is calling for! You have to switch now your mindset from wanting to synthesize and read all the articles in your Zotero file, to extract the right information to support your literature analysis. This is why I created this guide to help you focus on the right information to gather so you can save your time, your energy and the most important your mood.

No one will value how many papers you read and in order for you to advance, to really advance, you have to start working smarter not harder. You are invited to select the right research papers that corresponds to your research questions, I recommend you to start using the protocol PRISMA so you gather the right articles for your literature review, either to build your Systematic Literature Review article or to create your literature review for your empirical study. Why? Because if you gather too many articles but none of them tackle your research questions, you will end up by losing time in reading and synthesizing the wrong papers Garbage in equals to Garbage out.

This guide assumes you have already collected your research papers and you are struggling how to read all of them in short period of time without losing your time in reading in every single paper. You have already used PRISMA to gather a clean and selective set of papers that match your research questions. The challenge now is : how do you read these selected papers intelligently without losing your motivation and energy.

That is exactly why I created this guide to support in this specific stage of your research journey that I know it is the most time consuming. You have to have the smart strategy plus now the technology. Count yourself lucky because back then during my PhD I had only the strategy but I had to do the extraction and reading by myself!

Ready? Let's start our guide!

Step 1: Setup the AI tool : NoteBookLM

NotebookLM is a free AI research assistant built by Google. What makes it different from a chatbot like ChatGPT is one decisive feature: it answers only from the documents you upload. It does not pull from the open internet, and it does not invent sources. This technology is called RAG (Retrieval-Augmented Generation), and for a researcher it means one thing above all: when NotebookLM tells you a paper says something, it actually says it. Every answer is grounded in your own uploaded papers, and you can click to see the exact passage it came from. This is what makes it safe to use for serious literature work, where a fabricated citation could damage your credibility.

Here is how it will assist you to read smart. Instead of opening fifteen PDFs and reading each one from abstract to conclusion, you upload all of them into a single notebook and interrogate them as one connected body of literature. You ask NotebookLM to extract the four elements you defined earlier (research gaps, contributions, future research agenda, and frameworks and methods), and it scans every paper at once, pulling out only what you asked for, with the source passage attached. A task that used to take you a full week of manual reading and note-taking now takes minutes, and the output comes back already organized in a table you can reuse directly in your analysis.

It also lets you compare papers against each other, which is exactly what gap analysis requires. You can ask it which papers contradict each other, which ones share the same limitation, or which research direction the authors most frequently call for. This cross-paper comparison is something you simply cannot do efficiently by reading one PDF at a time.

A few practical things to know before you start. Each notebook holds up to 50 sources, so if you have more papers than that, create several notebooks and split your corpus into batches. Keep one notebook per project or per research question, so your analysis stays focused and your prompts stay relevant. And remember the golden rule from earlier: NotebookLM can only analyze what you put inside it. The quality of its extraction depends entirely on the quality of the papers you upload. Garbage in, garbage out.

To get started, go to notebooklm.google.com, sign in with your Google account, and click "Create new notebook." Give it a clear name tied to your research question, for example "Gap_Analysis_[YourTopic]." Then click "Add sources" and drag your selected papers in from your Zotero folder. Once your sources show as checked, you are ready to begin the smart extraction protocol that follows.

Step 2: Define your objectives

To read smart, you must first define your reading objectives. What information are you actually looking for inside these papers? Before you open NotebookLM, decide what you want to extract. Here are the four elements that matter most for building a strong literature review.

Research Gaps. There are two types of research gaps you can extract, and they work differently.

The first type is the limitations the authors stated themselves in their paper. NotebookLM simply finds and reports these from the Limitations and Future Research sections. The gap already exists in the text; the AI just locates it.

The second type is the gap you derive across all the papers, relative to your own research problem. Here, you give the AI your main research question (the impact of your independent variable on your dependent variable in your context), and you ask it to compare your problem against everything the papers cover. The AI then tells you what is missing regarding your specific question. In this case, your research problem is not just a filter; it becomes the measuring stick. The gap emerges from the comparison between what you want to study and what the papers actually address. One caution: the AI can only judge what is missing inside the papers you uploaded, not in the whole field. So make sure your corpus contains the papers most likely to have covered your topic before you trust a gap claim.

Contributions. The AI synthesizes the main contribution that each paper brings to the field, exactly as the authors state it. This shows you the territory already occupied, so you do not claim something that has already been done, and so you can position your own contribution around what exists.

Future Research Agenda. The AI extracts all the research perspectives, open questions, and directions the authors explicitly leave unanswered and call for future scholars to address. This is especially valuable, because a gap that authors themselves request is a gap you can claim with their own words as support.

Theoretical Frameworks and Methods. The AI identifies which theoretical lens each paper used to study its variables, and which research method it applied to measure them. This shows you how your field studies your topic, helps you choose your own approach, and reveals whether a particular method or theory is overused or still underexplored.

Step 3: Extract information from research papers

If you want to extract information exactly as it is stated within the research papers (research gaps of type 1, contributions, methods and theoretical frameworks, and any other variables you need), you have to customize this first prompt before inserting it into your notebook and running it.

Role: Act as a strict academic research analyst. You extract only what is explicitly written in the uploaded papers. You never infer, summarize loosely, or invent. If a piece of information is not stated in a paper, write 'Not reported' in that cell. For every extracted item, the information must be traceable to the actual text of the paper.

My research focus: I am studying the relationship between [INSERT YOUR INDEPENDENT VARIABLE] and [INSERT YOUR DEPENDENT VARIABLE] within [INSERT YOUR CONTEXT]. Use this focus to stay relevant, but extract the information as the authors stated it.

Task: For each uploaded paper, scan the relevant sections (Abstract, Introduction, Methods, Results, Discussion, Limitations, Future Research, Conclusion) and extract the following variables. Process one paper at a time. Do not merge papers.

Variables to extract for each paper:

- 1. Author & Year*
- 2. Stated Research Gap (Type 1): the limitations or unresolved issues the authors explicitly state in their own paper.*
- 3. Main Contribution: what the paper explicitly claims to deliver, theoretically and practically.*
- 4. Theoretical Framework: the theory or conceptual lens the authors use to study their variables.*
- 5. Method: the research design, sample, and data collection method used.*
- 6. Key Independent Variable studied: how the paper operationalizes the concept closest to my [IV].*
- 7. Key Dependent Variable / Outcome studied: how the paper measures the concept closest to my [DV].*
- 8. Context / Population: the setting, sector, geography, or population of the study.*
- 9. Future Research Agenda: the specific directions or questions the authors explicitly call for.*
- 10. [INSERT ANY ADDITIONAL VARIABLE YOU NEED — e.g., sample size, country, key finding, moderator identified]*

Output format: Produce one single Markdown table. One row per paper. Use these exact columns, in this order:

Author & Year | Stated Research Gap | Main Contribution | Theoretical Framework | Method | IV Studied | DV / Outcome | Context / Population | Future Research Agenda | [Your Additional Variable]

Keep each cell concise: one to two short sentences maximum, in plain academic English. Do not pad. Do not editorialize. After the table, do nothing else unless I ask.

Tone and constraints: precise, evidence-based, no filler, no introductory sentence before the table."

Example:

Role: Act as a strict academic research analyst. You extract only what is explicitly written in the uploaded papers. You never infer, summarize loosely, or invent. If a piece of information is not stated in a paper, write 'Not reported' in that cell. For every extracted item, the information must be traceable to the actual text of the paper.

My research focus: I am studying the relationship between AI adoption in supply chain management and supply chain resilience within manufacturing supply chains. Use this focus to stay relevant, but extract the information as the authors stated it.

Task: For each uploaded paper, scan the relevant sections (Abstract, Introduction, Methods, Results, Discussion, Limitations, Future Research, Conclusion) and extract the following variables. Process one paper at a time. Do not merge papers.

Variables to extract for each paper:

1. Author & Year
2. Stated Research Gap (Type 1): the limitations or unresolved issues the authors explicitly state in their own paper.
3. Main Contribution: what the paper explicitly claims to deliver, theoretically and practically.
4. Theoretical Framework: the theory or conceptual lens the authors use to study their variables.
5. Method: the research design, sample, and data collection method used.
6. Key Independent Variable studied: how the paper operationalizes the concept closest to AI adoption in supply chains (e.g., machine learning, predictive analytics, AI-driven decision systems).
7. Key Dependent Variable / Outcome studied: how the paper measures the concept closest to supply chain resilience (e.g., recovery time, disruption response, robustness, agility, performance under uncertainty).
8. Context / Population: the setting, sector, geography, or population of the study.
9. Future Research Agenda: the specific directions or questions the authors explicitly call for.
10. Moderating factors identified: any condition, contingency, or moderator the paper reports as affecting the strength or direction of the AI–resilience relationship (e.g., data quality, organizational maturity, human oversight, firm size). If none, write 'Not reported.'

Output format: Produce one single Markdown table. One row per paper. Use these exact columns, in this order:

Author & Year | Stated Research Gap | Main Contribution | Theoretical Framework | Method | IV Studied (AI) | DV / Outcome (Resilience) | Context / Population | Future Research Agenda | Moderating Factors

Keep each cell concise: one to two short sentences maximum, in plain academic English. Do not pad. Do not editorialize. After the table, do nothing else unless I ask.

Tone and constraints: precise, evidence-based, no filler, no introductory sentence before the table

Step 4: Analyze the research gaps

Now, if you want to analyze the research gaps and limitations across these papers in relation to your own research problem, you move from simple extraction to genuine diagnosis. This is the second type of gap we discussed earlier, and it is the more powerful one for building your contribution.

Here is the difference. The first prompt pulled out the limitations each author admitted in their own paper. This second prompt does something deeper: it takes your main research question as the reference point, then reads the whole body of papers as one connected literature and tells you what is missing *regarding your specific problem*. The gap is no longer something the authors handed you. It is something you derive by comparing what you want to study against what the literature actually covers.

This is exactly how you justify your own research. A reviewer does not care that "author X admitted a small sample." A reviewer cares that, across the entire field you reviewed, nobody has resolved the precise tension you are about to study. That collective, problem-anchored gap is what this prompt produces.

One thing must stay clear in your mind before you run it. NotebookLM can only judge what is missing *inside the papers you uploaded*, not in the whole field. So before you trust any gap it reports, make sure your notebook actually contains the papers most likely to have covered your topic. If you upload the wrong corpus, the AI will report a gap that does not really exist, and a Q1 reviewer will catch it immediately. Garbage in, garbage out, one more time.

What You Must Bring to This Prompt

Before running it, prepare four anchors:

- Your **main research question(s)**, written exactly as you formulated them.
- Your **research problem / tension** in one or two sentences (the relationship you want to resolve).
- Your **independent variable**, your **dependent variable**, and your **context**.

Your uploaded corpus of papers, already loaded and checked in the notebook.

The Gap Diagnosis Prompt (à copier-coller dans NotebookLM)

Role: Strict academic research analyst for Q1 gap diagnosis. Assess ONLY what is written in the uploaded papers. Never infer beyond the text, never invent a gap. If the text doesn't support a claim, say so.

===== *FILL THIS IN* =====

My problem: The literature broadly assumes [DOMINANT ASSUMPTION YOU CONTEST]. I want to know when / under what conditions this [effect / relationship / claim] [weakens / disappears / reverses / fails], depending on [FACTOR 1], [FACTOR 2], [FACTOR 3].

RQ1 — [YOUR FIRST RESEARCH QUESTION]

RQ2 — [YOUR SECOND RESEARCH QUESTION]

RQ3 — [YOUR THIRD RESEARCH QUESTION] (delete if unused)

*IV = [INDEPENDENT VARIABLE] | DV = [DEPENDENT VARIABLE] | Moderator(s) = [IF ANY]
| Context = [POPULATION / SECTOR / SETTING]*

=====

7 gap types (Miles, 2017):

- 1. Evidence — valid results that conflict when compared.*
- 2. Knowledge — knowledge absent, or results differ from expected.*
- 3. Practical — real practice deviates from / isn't covered by findings.*
- 4. Methodological — narrow or conflicting methods; another method is needed.*
- 5. Empirical — claims not empirically tested.*
- 6. Theoretical — a theory/lens is missing or not applied.*
- 7. Population — a relevant population/context is under-studied.*

Task:

Read all uploaded papers as one connected body of literature, then produce a DETAILED research-gap table.

MAIN OUTPUT — one row per paper, with these columns:

- 1. Paper (author, year)*

2. Finding on [IV–DV relationship] (one line)
3. Gap type identified (name it from the 7 above)
4. Status: E = explicitly named by authors / I = implicitly left open / C = covered
5. Textual evidence: exact quote or close paraphrase (for E) OR the specific absence justifying it (for I). No evidence = no gap.
6. Relevance to my RQs (RQ1 / RQ2 / RQ3)
7. Defensibility for Q1: Strong (E, author-stated) / Moderate / Weak (rests on absence only)

If a paper shows several gap types, give it several rows.

Never assign E or I unless the text supports it; if unclear, write "undetermined" and say why.

GAP SYNTHESIS (write this section in a doctoral, dissertation-grade register — analytical prose, not bullet fragments; the tone of a Chapter 2 "synthesis and gap" section in a Q1-targeted thesis):

a) Patterning of the gaps. Read the table as a whole and characterise how the gaps distribute across the corpus: which gap types cluster, which co-occur within the same papers, and what this convergence reveals about the maturity (or immaturity) of the field on my problem. Argue, don't list.

b) Evidence vs. absence. Distinguish rigorously between gaps that authors themselves articulate (status E) and gaps that exist only because a dimension is unaddressed (status I). Explain why the former carry citational weight in a Move 2 and the latter must be framed cautiously to survive reviewer scrutiny.

c) Tensions and contradictions. Surface any genuine evidence gaps — points where findings diverge across studies — and interpret what drives the divergence (context, method, measurement of the DV, operationalisation of the IV). Treat contradiction as a resource, not a flaw.

d) The unresolved core. Converge the analysis on the single most defensible gap relative to my RQs: name its taxonomy type, anchor it in the supporting papers, and state with precision what remains unknown — the boundary conditions, moderators, or mechanisms the corpus leaves open. Resist overclaiming; specify the limits of what can legitimately be asserted.

e) Sufficiency for Q1. Appraise honestly whether the corpus can sustain this gap claim in a Q1 submission or whether it remains evidentially thin. Specify what kind of additional source (design, population, or theoretical lens) would consolidate the argument.

End with ONE sentence stating the gap, ready for Move 2 of my introduction.

Tone: precise, evidence-based, doctoral. No filler. Never fabricate a gap.

Example:

Role: Strict academic research analyst for Q1 gap diagnosis. Assess ONLY what is written in the uploaded papers. Never infer beyond the text, never invent a gap. If the text doesn't support a claim, say so.

My problem: Literature assumes AI adoption always improves supply chain resilience. I want to know when this effect weakens, disappears, or reverses in manufacturing, depending on data quality, organizational maturity, or human oversight.

RQ1 — How does AI adoption affect supply chain resilience in manufacturing?

RQ2 — Under what conditions does the effect weaken or reverse?

RQ3 — Which moderating factors govern it?

IV = AI adoption | DV = supply chain resilience | Context = manufacturing.

7 gap types (Miles, 2017):

1. Evidence — valid results that conflict when compared.
2. Knowledge — knowledge absent, or results differ from expected.
3. Practical — real practice deviates from / isn't covered by findings.
4. Methodological — narrow or conflicting methods; another method is needed.
5. Empirical — claims not empirically tested.
6. Theoretical — a theory/lens is missing or not applied.
7. Population — a relevant population/context is under-studied.

Task:

Read all uploaded papers as one connected body of literature, then produce a DETAILED research-gap table.

MAIN OUTPUT — one row per paper, with these columns:

1. Paper (author, year)
2. Finding on AI–resilience (one line)
3. Gap type identified (name it from the 7 above)
4. Status: E = explicitly named by authors / I = implicitly left open / C = covered

5. Textual evidence: exact quote or close paraphrase (for E) OR the specific absence justifying it (for I). No evidence = no gap.

6. Relevance to my RQs (RQ1 / RQ2 / RQ3)

7. Defensibility for Q1: Strong (E, author-stated) / Moderate / Weak (rests on absence only)

If a paper shows several gap types, give it several rows.

Never assign E or I unless the text supports it; if unclear, write "undetermined" and say why.

GAP SYNTHESIS (write this section in a doctoral, dissertation-grade register — analytical prose, not bullet fragments; the tone of a Chapter 2 "synthesis and gap" section in a Q1-targeted thesis):

a) Patterning of the gaps. Read the table as a whole and characterise how the gaps distribute across the corpus: which gap types cluster, which co-occur within the same papers, and what this convergence reveals about the maturity (or immaturity) of the field on my problem. Argue, don't list.

b) Evidence vs. absence. Distinguish rigorously between gaps that authors themselves articulate (status E) and gaps that exist only because a dimension is unaddressed (status I). Explain why the former carry citational weight in a Move 2 and the latter must be framed cautiously to survive reviewer scrutiny.

c) Tensions and contradictions. Surface any genuine evidence gaps — points where findings diverge across studies — and interpret what drives the divergence (context, method, measurement of resilience, operationalisation of AI adoption). Treat contradiction as a resource, not a flaw.

d) The unresolved core. Converge the analysis on the single most defensible gap relative to RQ1–RQ3: name its taxonomy type, anchor it in the supporting papers, and state with precision what remains unknown — the boundary conditions, moderators, or mechanisms the corpus leaves open. Resist overclaiming; specify the limits of what can legitimately be asserted.

e) Sufficiency for Q1. Appraise honestly whether the corpus can sustain this gap claim in a Q1 submission or whether it remains evidentially thin. Specify what kind of additional source (design, population, or theoretical lens) would consolidate the argument.

End with ONE sentence stating the gap, ready for Move 2 of my introduction.

Tone: precise, evidence-based, doctoral. No filler. Never fabricate a gap.

Step 5: Capitalize on your reading

I really appreciate to be part of your research journey and helped you now to read smartly your literature. You now have something most doctoral candidates take months to reach: a clear method to read smart, extract the right information, and diagnose the gaps that matter for your research. With the protocol in this guide, you can already move faster, work smarter, and protect your energy for what truly counts.

But here is the honest truth. Reading the literature and diagnosing the gaps is the first step, not the final one. The real challenge, the one that separates a published Q1 paper from a rejected one, is what comes next: turning those research gaps into a powerful, defensible research contribution, and weaving them into a literature review that reviewers cannot ignore.

That transformation is exactly what we do, together and in depth, at the SLR Summer Camp.

This guide gave you the map. The SLR IA Camp walks the road with you. Over our sessions, we take the gaps you just learned to extract and turn them into sharp research questions, a clear contribution, and a literature review built to the standard of the journals you are aiming for. You will not be doing it alone, guessing in the dark. You will be doing it with guidance, with feedback, and alongside other PhD starters who are exactly where you are.

Reach out to me on WhatsApp: [00212652067405](https://wa.me/00212652067405), and let's turn your gaps into your contribution, together.

Good Luck!