

THEORETICAL PART

Definition of *Theoretical Part* of a dissertation

A critical evaluation

and A synthesis

of existing research, scholarly articles, theses, books, and other sources relevant to a specific topic or research question.

The terms "literature review", "current state of research" or "state of the art" are synonymous and constitute the core of the theoretical section.

Role of *Theoretical Part*

Identify

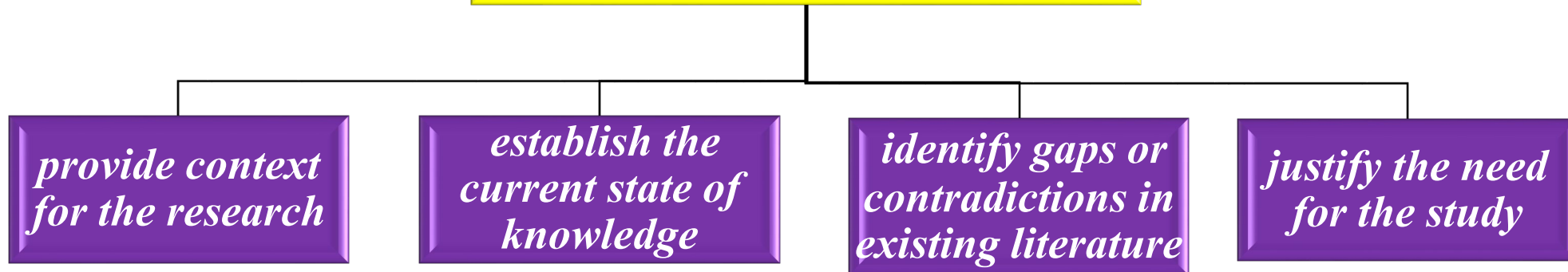
Analyse

Summarise

key findings, theories, methods, and debates in the field.

A Theoretical part is a critical evaluation and synthesis of existing research, scholarly articles, books, and other sources relevant to a particular topic or research question. It involves identifying, analyzing, and summarizing key findings, theories, methodologies, and debates in the field.

Purposes of *Theoretical Part*



*The purpose of a Theoretical part is to provide **context** for the research, establish the **current state of knowledge**, identify **gaps** or **contradictions** in existing literature, and justify the **need** for the study. The theoretical section serves as the foundation for the dissertation, informing the research process and positioning the study within the broader academic landscape. A well-conducted literature review demonstrates the researcher's understanding of the subject area, informs the research design, and contributes to the development of new insights or perspectives.*

Size and structure of *Theoretical Part*

*Typically, this section
accounts for
approximately one-third of
the dissertation or thesis.*

*For organizational
convenience, it may be
divided into multiple
chapters.*

EXAMPLE 1:

*Bellow is a **three-prompts** or **three-chapters** theoretical part division on "**vernacular architecture and modernism**".*

These prompts provide a framework for organizing the theoretical or literature review section, allowing for an in-depth exploration of the relationship between vernacular architecture and modernism from historical, theoretical, and contemporary perspectives.

Chapter 1: Historical Development of Vernacular Architecture

- Explore the historical roots of vernacular architecture, examining its origins, evolution, and traditional building practices.*
- Discuss how vernacular architecture has been influenced by cultural, social, economic, and environmental factors over time.*
- Examine the impact of modernization and industrialization on traditional building techniques and the preservation of vernacular architectural heritage.*

Chapter 2: Modernist Movements and Vernacular Architecture

- Investigate the relationship between modernist architectural movements and vernacular architecture, considering both conflicts and synergies.*
- Analyze how modernist architects and theorists have engaged with vernacular building traditions, incorporating or rejecting elements of local building practices.*
- Discuss the influence of modernist ideologies such as functionalism, minimalism, and universalism on the interpretation and adaptation of vernacular architecture in the modern context.*

Chapter 3: Contemporary Perspectives on Vernacular Architecture and Modernism

- Review contemporary discourse and scholarship on the intersection of vernacular architecture and modernism.*
- Explore case studies or examples of contemporary architectural projects that integrate vernacular principles with modernist design approaches.*
- Evaluate the challenges and opportunities of reconciling vernacular traditions with modernist aesthetics, sustainability goals, and globalized architectural practices.*

EXAMPLE 2:

Bellow is a two-prompts or two-chapters theoretical part division on "vernacular architecture and modernism".

Chapter 1: Historical Evolution and Influences:

- Trace the historical development of vernacular architecture, exploring its origins, evolution, and traditional building techniques.
- Examine the impact of social, cultural, economic, and environmental factors on the evolution of vernacular architecture over time.
- Investigate how modernist movements and ideologies have interacted with and influenced vernacular architectural traditions.

Chapter 2: Contemporary Perspectives and Synthesis:

- Review contemporary scholarship and discourse on the relationship between vernacular architecture and modernism.
- Analyze case studies or examples of contemporary architectural projects that integrate elements of vernacular architecture with modernist design principles.
- Synthesize key findings and identify current trends, challenges, and opportunities in reconciling vernacular traditions with modernist approaches in architecture.

Literature Review (LR) Methods

Narrative LR (NLR)

- Summarizes existing literature without formal systematic methods like systematic reviews, relying on author's judgement.
- Known as traditional way of performing LR.
- Flexible LR to support the topic, hypothesis and identify the research gaps,
- Researcher's subjective information extraction

Systematic LR

Standard studies

Rigorous approach to gather, evaluate, and synthesize existing research on a specific topic using predefined, systematic criteria without Meta analysis.

- Used when the studies are not combinable (diverse, heterogeneous),
- Researcher designs a system based on guidelines or review protocols.
- System autonomously identifies required documents, independently.
- Reduces biases, enhances reliability, potentially comprehensive.

Meta analysis

A SLR followed by statistical methods to combine and summaries of several independent studies. A meta-analysis is a statistical analysis that combines the quantitative results of similar multiple studies to estimate an effect size., indicating the strength of the relationship between variables.

- It's an optional part of SLR, where SLR can transition into Meta-Analysis.

Comparison of steps of SLR and MA

Steps	SLR	MA
1	Define the research question	Define the research question
2	Literature search	Literature search
3	Study inclusion and exclusion criteria : Date, Journal, Database	Study inclusion and exclusion criteria : Date, Journal, Database
4	Selection of specific studies	Selection of specific studies
5	Screening process using PRISMA flow chart: once the research studies has been identified then a screening process will have to follow to select which one to consider and which one to exclude by referring to Prisma chart	Screening process using PRISMA flow chart: once the research studies has been identified then a screening process will have to follow to select which one to consider and which one to exclude by referring to Prisma chart
6		Select effect size to measure: Heggs' g, Cohen's d, OR (Odd ration), Hasard ration, Rate, Pearson correlation.
7		Select MA model: fixed effect, Random effects
8		Heterogeneity tesst (I^2)
9		Overall effect size
10		Draw forest plot

Narative LR (NLR)

- Known as traditional way of performing LR.*
- Summarizes existing literature without formal systematic methods like systematic reviews or meta-analyses, relying on author's interpretation.*
- Flexible LR to support the topic, hypothesis and identify the research gaps,*
- Researcher's subjective information extraction*
- Flexible LR to support your topic, hypothesis and identify the research gaps,*
- Researcher's subjective information extraction*
- More subject to author knowledge and bias,*
- Less systematic and rigorous than systematic and scoping reviews*

Steps for conducting a Narrative LR

1

Step 1: Identify Relevant Literature

1-Define your research topic

2-Make a list of keywords:

List keywords related to your research topic, including concepts and synonyms. Begin by listing keywords related to your research question, including key concepts and variables, and add new terms as you progress in your literature search.

3-Search for relevant sources:

Search data on different websites, databases, registers and other methods (university library catalogues, Theses, Masters, etc.). Some common databases and websites are: Web of science, Scopus, SNDL, Google scholar, Inspect)

2

Step2: Evaluate and Select Sources

1-Prioritize the most relevant sources:

You may not read all on your topic, so prioritize relevant sources for your research question.

Consider creating a table to summarize and assess the sources you plan to use (refer to the template below).

2-Ensure sources are credible and prioritize reading landmark studies and major theories in your research field.

3-Take notes and cite your sources:

As you read, start writing and taking notes for your literature review. Track sources with citations to prevent plagiarism. Consider making an annotated bibliography for each source to aid memory and save time later.

Table to Summarize and Evaluate Sources

[illegible]

3

Step 3: Identify themes, debates, and gaps (What we learn from literature)

1-To structure your literature review, **understand connections between the sources** you've read.

2-Look for: **trends** (in theory, method or results), **themes, conflicts, pivotal publications, and gaps** (what is missing from the literature).

4

Step 4: Outline your LR's Structure

Multiple approaches exist for organizing a literature review, combining strategies based on length.

1-Chronological: Trace topic development over time, but avoid mere summarization. Analyze patterns, turning points, and key debates.

Topic: Evolution of Passive Solar Design Techniques

Example: Trace the development of passive solar design strategies from ancient civilizations to modern sustainable architecture, discussing key historical advancements and innovations.

2-Thematic: Organize into subsections based on recurring central themes. For instance, in migrant health, themes may include healthcare policy, language barriers, and legal status.

Topic: Sustainable Materials in Bioclimatic Architecture

Example: Organize literature into themes such as natural building materials, energy-efficient construction methods, renewable energy integration, and low-impact building practices.

3-Methodological: Compare results and conclusions from different research methods or disciplines.

Topic: Performance Evaluation of Bioclimatic Buildings

Example: Compare studies using quantitative performance metrics like energy consumption and indoor air quality measurements with qualitative assessments of user comfort and satisfaction in bioclimatic buildings.

4-Theoretical: Use the literature review to discuss theories, models, and key concepts. Argue for a specific theoretical approach or combine concepts to create a research framework.

Topic: Bioclimatic Design Principles and Theoretical Frameworks

Example: Discuss various theoretical frameworks in bioclimatic architecture, such as passive design strategies, thermal comfort models, and biophilic design principles, examining their application in sustainable building design.

5

Step 5: Write your LR

1-Introduction:

Clearly define the focus and purpose of the literature review. For a dissertation or thesis, reaffirm your central problem or research question and summarize the scholarly context. Emphasize the topic's timeliness or highlight any gaps in the literature.

The introduction of a LR serves to outline the scope and purpose of the review. It begins by providing background information on the topic under investigation, highlighting its significance in the field of study. The introduction then states the research question or objectives of the review and outlines the structure of the review. It may also briefly discuss the methodology used to conduct the review and any key terms or concepts that will be explored.

2-Body:

Consider dividing the body of your literature review into subsections based on its length.

When writing, follow these guidelines:

- Summarize and synthesize: Combine main points of sources into a cohesive whole.
- Analyze and interpret: Add your insights, discussing findings' significance.
- Critically evaluate: Mention strengths and weaknesses of sources.
- Write in well-structured paragraphs: Use transition words for connections.

3-Conclusion:

In concluding, summarize the key findings derived from the literature and underline their significance.

Steps for conducting a Systematic LR

1 Define a Research Topic

2 Define keywords

3 Identify sources (Search strategy):

- Inclusion/Exclusion criteria (date; country, duplicates, etc.)
- Sources (Web of science, Scopus, Google scholar, Science direct, etc.)

4 Screening and Eligibility:

- Screening Title/Abstract
- Full-text assessed for eligibility

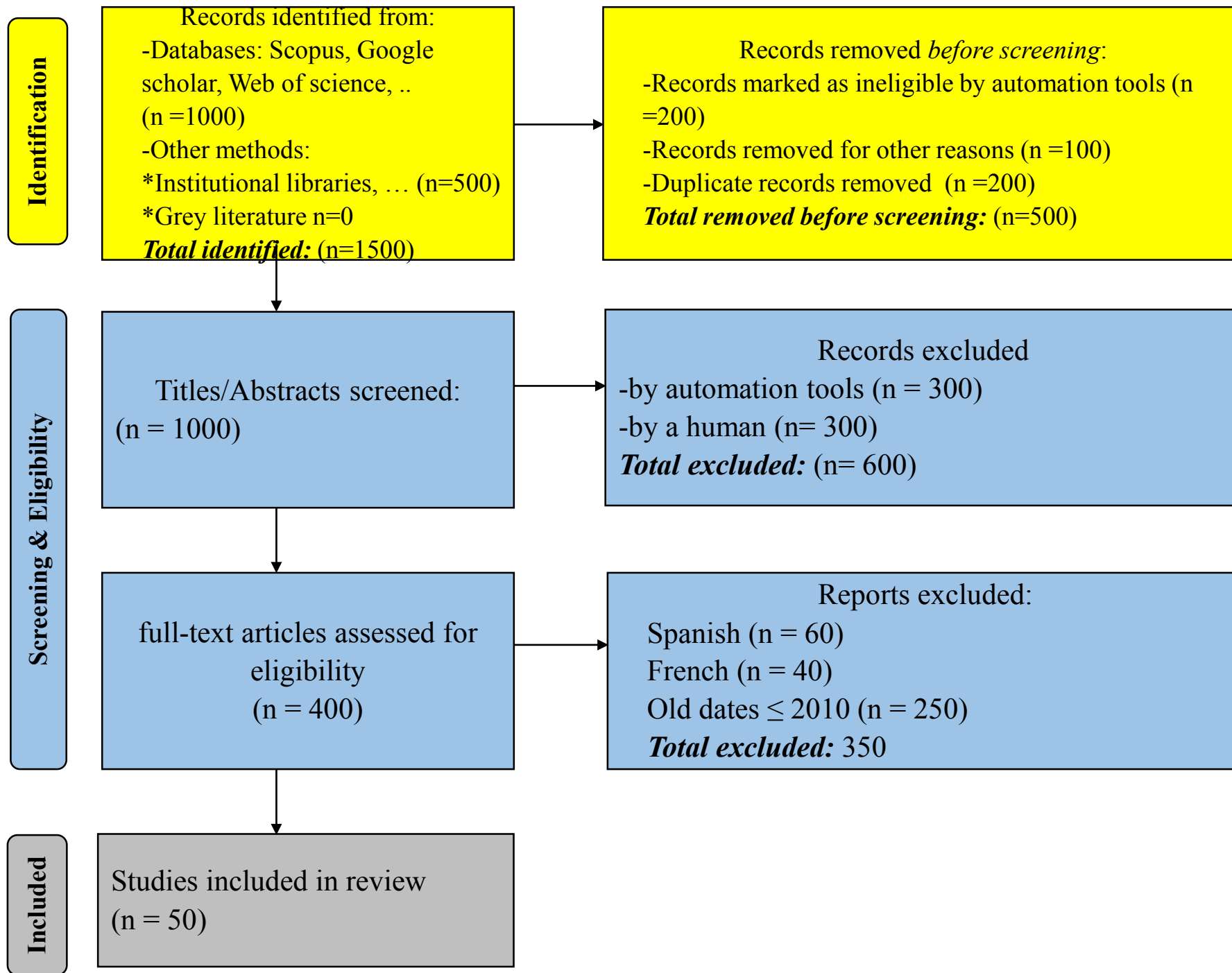
5 Extract Data

6 Quality appraisal

7 Synthesize and Learn from Studies

8 Write the literature review

Identification of studies via databases, registers and other methods using
PRISMA 2020 flow diagram for systematic literature review.
Preferred Reporting Items for Systematic Reviews and Meta Analysis



Data Extraction

Data extraction refers to the process of collecting and gathering information (systematically or manually) from various sources, such as studies or datasets, for further analysis or synthesis.

- Studies are collected from databases, registers, and other methods in PDF format to extract synthesized information for learning from literature.
- A table is created to summarize these studies (typically ranging from 20 to 70 files) in Excel or CSV format. Default columns are suggested by the tool, which you can select or deselect, but you can build your own columns according to the study requirement.
- Using AI tools like SCISPACE and ELICIT can help in generating summarized information, instead of manually filling the table.
- Other AI tools with similar capabilities can also be used for this purpose.


Quality assessment

The following points are important to consider when assessing the quality of the publications:

- 1-Critical approach to academic literature:** Navigating the academic literature requires a critical and careful approach and ability to distinguish between rigorous and flawed studies. The quality of published research varies. Critical evaluation of cited papers.
- 2- Consider contradictory evidence:** Relying on one paper is insufficient to validate claims, as different papers may present conflicting results.
- 3- Assess credibility of research:** Even reputable journals may publish poor (standard) work. The prevalence (occurrence) of academic fraud underscores the importance of thorough scrutiny.
- 4- Do not rely on journal reputations:** Even reputable journals may occasionally publish substandard work due to factors like reviewer oversight (error) or leniency (tolerance).
- 5- Guard against academic misconduct:** In the sphere of academic literature, each paper exists at the interval between established knowledge and uncertainty. Don't accept findings at face value.
- 6-Journal standards vary widely:** Despite undergoing peer review, the process is imperfect, with journal standards varying widely.
- 7-Importance of thorough scrutiny (examination):** It is essential to critically evaluate every paper cited and used as a foundation for one's own work, as publication does not guarantee research integrity.

Quality indicators

INDICATORS	ASSESSMENT QUESTIONS
Title	Does the title correctly reflect the content of the research?
Research Question	Is the research question clearly articulated? If not, the research will seek out the research objectives.
Abstract	Does the abstract explain the purpose of the paper, why the research was conducted, what was achieved, the significance, and the conclusions?
Key words	Are the keywords informative and relevant?
Introduction	Is the research problem clearly defined, and is the background relevant to the research problem?
Method(s)	Are the methods reliable and valid? Are they qualitative or quantitative? Are they theoretical or experimental?
Data Analysis (Results)	Were the steps involved in the data analysis explained, and were the strategies justified? Was the data analysis rigorous enough to substantiate the claims? Is the analysis supported by statistical analysis? Are the results relevant to the research question? Do the tables and graphs clarify the data analysis? Did the researcher highlight the most important findings?
Discussion	Have the results been interpreted in relation to the research question, hypothesis, and aims? Have the results been compared to other studies (Triangulation)? How relevant and useful are the results for practical application?
Conclusions	Can the data justify the conclusions?
Ethical issues	Were ethical issues adequately addressed?
Reproducibility	Could the study be replicated by another group?


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
SCISPACE


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













Liens



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Synthesize and Learn from Studies

After summarizing on Excel, we transition to an advanced tool named POWERDRILL. POWERDRILL offers sophisticated data analysis features for classifying and analyzing complex datasets efficiently.

It enables data uploading and querying to generate clusters and perform data analysis.

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Which cities globally house the most billionaires, and what industries primarily thrive in these locations?



Analyzing Conclusions

Conclusion

Top Billionaire Cities:

1. **New York** - Houses the most billionaires globally, with a count of 99.
2. **Hong Kong and Beijing** - Both cities tie for the second-highest billionaire population with 68 each.

...

Primary Industries in Top Cities:

New York: The predominant industry among billionaires is Finance & Investments...

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Writing the literature review

Writing the literature review chapter can be a daunting task, but following a structured approach can make it more manageable. One of the big problems in writing the literature review is to try to write it before understanding it; putting pressure in showing knowledge before developing it. Here's a step-by-step guide on how to write the literature review chapters:

1. ****Understand the Purpose****: Before you begin writing, make sure you understand the purpose of the literature review. It should provide a comprehensive overview of existing research relevant to your topic, highlight gaps in the literature, and justify the need for your study.
2. ****Organize Your Materials****: Group your sources based on themes, topics, or key concepts relevant to your research. This will help you organize your literature review and identify common themes and trends.
3. ****Develop a Structure****: Decide on the structure of your literature review chapter. Common structures include chronological, thematic, theoretical framework, or methodological approach. Choose the structure that best suits your research question and objectives.
4. ****Write an Introduction****: Start your literature review chapter with an introduction that provides an overview of the topic, outlines the scope and objectives of the review, and explains the organization and structure of the chapter.
5. ****Review and Synthesize Literature****: For each theme or topic, summarize the key findings, theories, and methodologies of the existing research. Critically evaluate the strengths and weaknesses of each study and identify gaps or inconsistencies in the literature.
6. ****Provide Context and Connections****: Make sure to provide context for each study and explain how it relates to your research question. Highlight connections between different studies and theories, and show how they contribute to your overall understanding of the topic.
7. ****Discuss Implications and Future Directions****: Conclude each section with a discussion of the implications of the findings and suggest areas for future research. Identify any unanswered questions or areas where further investigation is needed.
8. ****Write a Conclusion****: Summarize the main findings of your literature review and reiterate the significance of your research. Reflect on the contributions of the existing literature and emphasize the importance of your study in addressing gaps or advancing knowledge in the field.
9. ****Cite Sources Properly****: Make sure to cite all sources properly according to the citation style required by your institution or field of study. Double-check your references to ensure accuracy and consistency.