Lisbon School of Economics & Management
Universidade de Lisboa

# Research Methods and Master's Project

# From the Topic to the Research Question

Amílcar Moreira

23/03/2025, 18:00-19:30

FRANCESINHAS 2, Room 2.03

# FROM THE TOPIC TO THE RESEARCH QUESTION

## In the previous class…

- **Conducting a Systematic Bibliographic Search.**
- **The PRISMA protocol.**
- **Creating an Article Matrix as a tool for systematizing information.**

# FROM THE TOPIC TO THE RESEARCH QUESTION

## Today we aim to…

- Familiarise students with the distinction between Research Problem, Research Question and Objectives.
- Introduce students to guidelines and tools for writing clear Research Questions and Objectives.

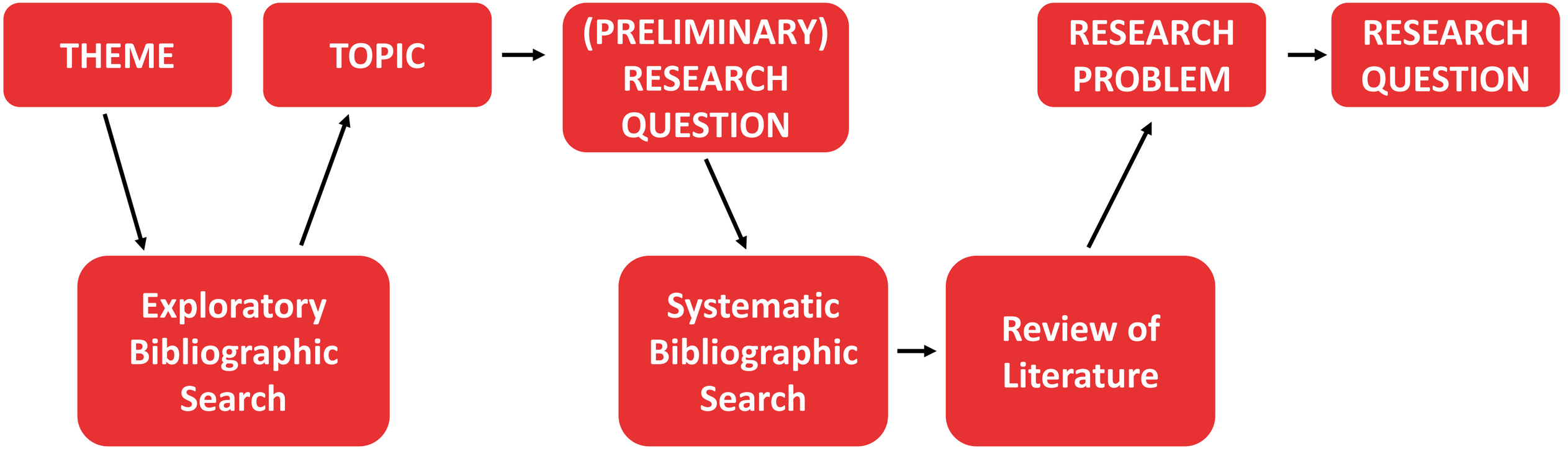
# FROM THE TOPIC TO THE RESEARCH QUESTION

## At the end of this class, you should be able to:

- Distinguish between the Research Problem, the Research Question and the Research Objectives.
- Have an understanding of the steps that lead to a clear and effective Research Question.
- Be able to identify the type of research design by the way a Research Question is formulated.
- Have an understanding of importance of Research Problem, the Research Question and the Research Objectives.
- Understand the distinction between the PICO and the MEO models, when writing a Research Question.

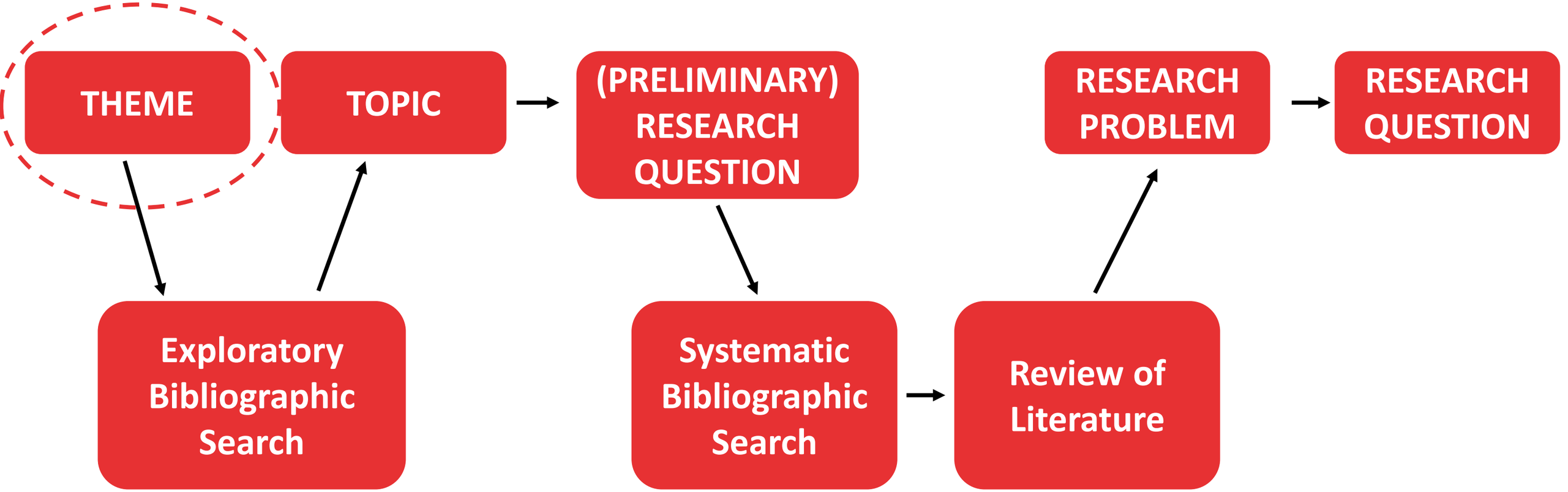
# FROM THE TOPIC TO THE RESEARCH QUESTION

## The Path to an Effective Research Question



# FROM THE TOPIC TO THE RESEARCH QUESTION

## The Path to an Effective Research Question



# Looking for a Theme

# Looking for a Theme

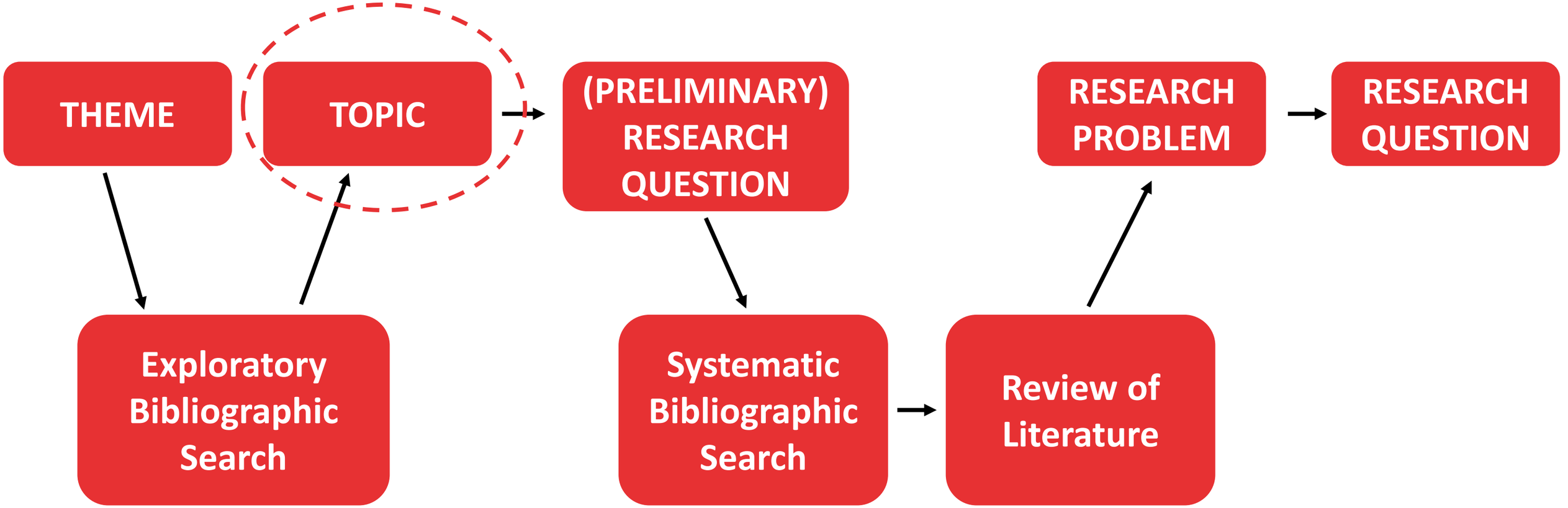
**According to Bryman (2012), we can find inspiration in:**

- **Personal interest or experience**
- **Changes/innovations in social or business life**
- **Salient social problems**
- **Theoretical/scientific interests**

**Source:** Bryman, 2012: 14.

# FROM THE TOPIC TO THE RESEARCH QUESTION

## The Path to an Effective Research Question



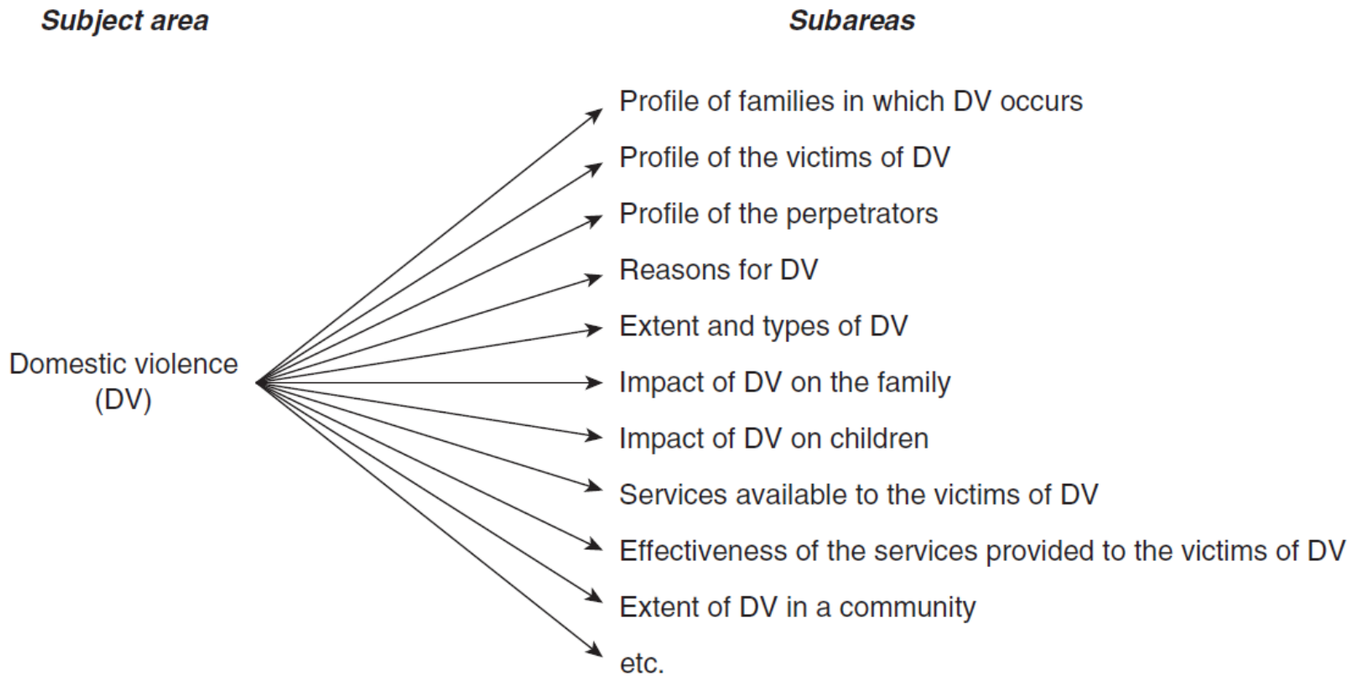
# From Theme to Topic

# FROM THE TOPIC TO THE RESEARCH QUESTION

## From Theme to Topic

**Defining the topic may involve (Kumar, 2012):**

- **Choosing a more specific aspect** of the theme;
-




**Source:** Kumar, 2012: 49

# FROM THE TOPIC TO THE RESEARCH QUESTION

## From Theme to Topic

**Ex:** Increase in Sea Water Temperature

**Defining the topic may involve (Kumar, 2012):**

- **Choosing a more specific aspect** of the theme;
- Thinking about the theme as a **Dependent Variable** or **Independent Variable.**

| | **Topic** |
|---|---|
| **As a Dependent Variable** | "What factors explain the increase in sea water temperature?" |
| **As an Independent Variable** | "What is the impact of increase in sea water temperature on fishing?" |

**Source:** Kumar, 2012: 47-9

# From Theme to Topic: Assessing the Topic

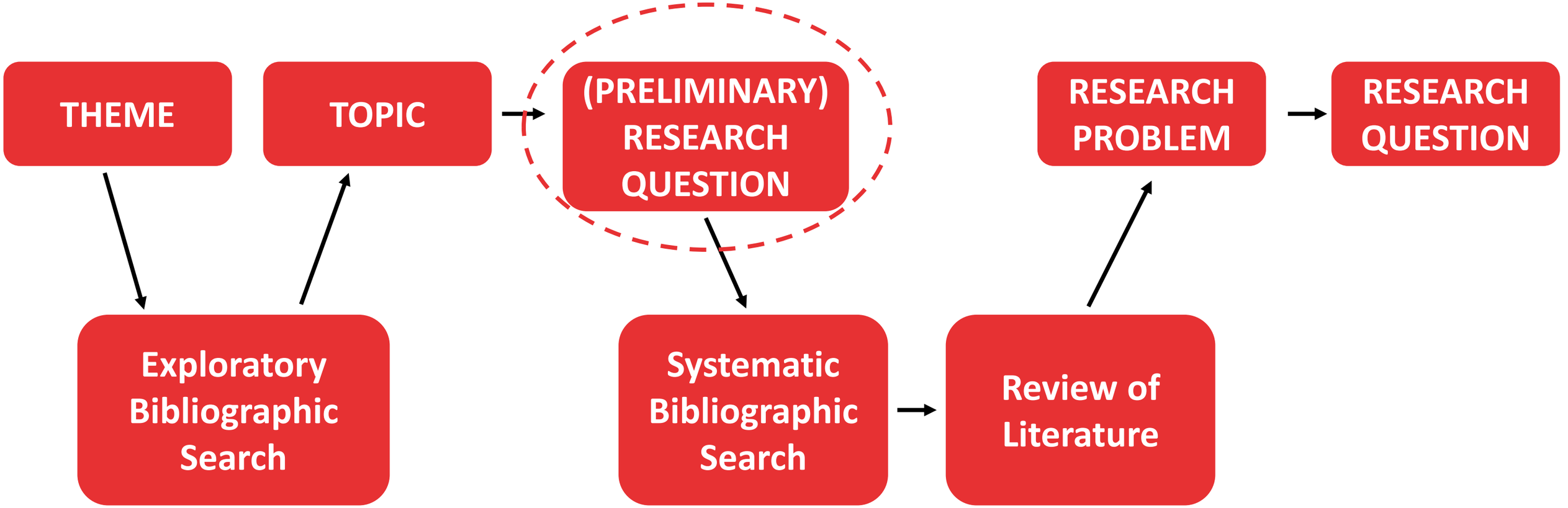
**According to Kumar (2012), there is a set of factors that we should consider when evaluating a topic that may interest us:**

- **Personal interest/Intrinsic motivation;**
- **Feasibility (in terms of time and resources);**
- **Measurability (especially in scientific studies);**
- **Data availability (if it depends on secondary data);**
- **Level of experience/demand;**
- **Etc.**

**Source:** Kumar, 2012: 47-9

# FROM THE TOPIC TO THE RESEARCH QUESTION

## The Path to an Effective Research Question



# The (Preliminary) Research Question

# FROM THE TOPIC TO THE RESEARCH QUESTION

## How to formulate a 'Research Question'?

**The formulation of the Research Question should take into account two central dimensions:**

- **The Methodological Approach (Quantitative, Qualitative, Mixed);**
- **The Research Design (Exploratory, Descriptive, Correlational, Causal, etc.).**

**Source:** Kumar, 2012: 47-9

# FROM THE TOPIC TO THE RESEARCH QUESTION

## How to formulate a 'Research Question'?

*Table 8.7 Types of research questions and their characteristics*

| *Type of Research Question* | *When To Use* | *First Word Normally Used* | *Example* |
|---|---|---|---|
| *Descriptive* | When you plan to use data collected to describe the phenomenon of interest | What | What is the experience of mothers homeschooling their children? |
| *Exploratory* | When you want to engage in inquiry to find out what is going on | What, How | What makes physicians quit their jobs? |
| *Process-focused* | When you want to demonstrate how a phenomenon occurs | How | How do people labeled as Generation Z become financially independent? |
| *Comparative* | When you plan to compare entities or phenomena or processes | How | How is working from home different from working in the office? |
| *Explanatory* | When you plan to explain a phenomenon or process | Why, How | Why are some CEOs concerned about allowing employees to work from home? |

**Source:** Adu & Mildes, 2024: 115-9

# FROM THE TOPIC TO THE RESEARCH QUESTION

## How to formulate a 'Research Question'?

### QUANTITATIVE STUDIES

- Exploratory Designs
- Descritptive
- Correlational
- Causal

### QUALITATIVE STUDIES

- Exploratory Designs
- Descritptive
- Causal
- Comparative
- Process focused

# FROM THE TOPIC TO THE RESEARCH QUESTION

## How to formulate a 'Research Question'?

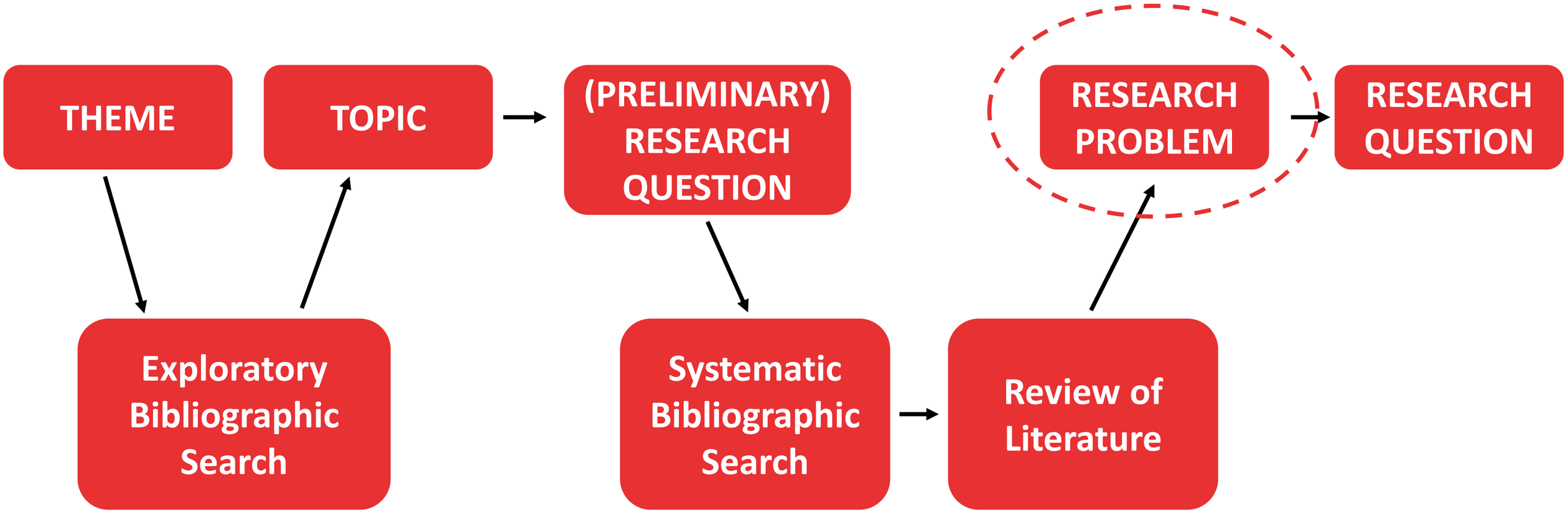
**A research question should have the following characteristics:**

- **Clear and intelligible;**
- **Give the prospect of generating an original contribution;**
- **Allow a connection with existing theory and evidence;Be feasible/measurable;**
- **Neither too broad nor too narrow – so that it can make a significant contribution;**
- **If there are several research questions, they should be interconnected.**

**Source:** Kumar, 2012: 47-9

# FROM THE TOPIC TO THE RESEARCH QUESTION

## The Path to an Effective Research Question



# The Research Problem

# The Research Problem

**The 'Research Problem' is where we:**

- **Specify what gap (in knowledge) our study aims to fill?**
- **Present evidence of the existence of this gap in the literature.**

**Source:** Kumar, 2012: 47-9

# The Research Problem

**The 'Research Problem' is where we:**

- **Specify what gap (in knowledge) our study aims to fill?**
- **Present evidence of the existence of this gap in the literature.**

**This ultimately depends on the quality of the Literature Review!**

**Source:** Adu & Miles, 2024: Chpt. 7

# The Research Problem

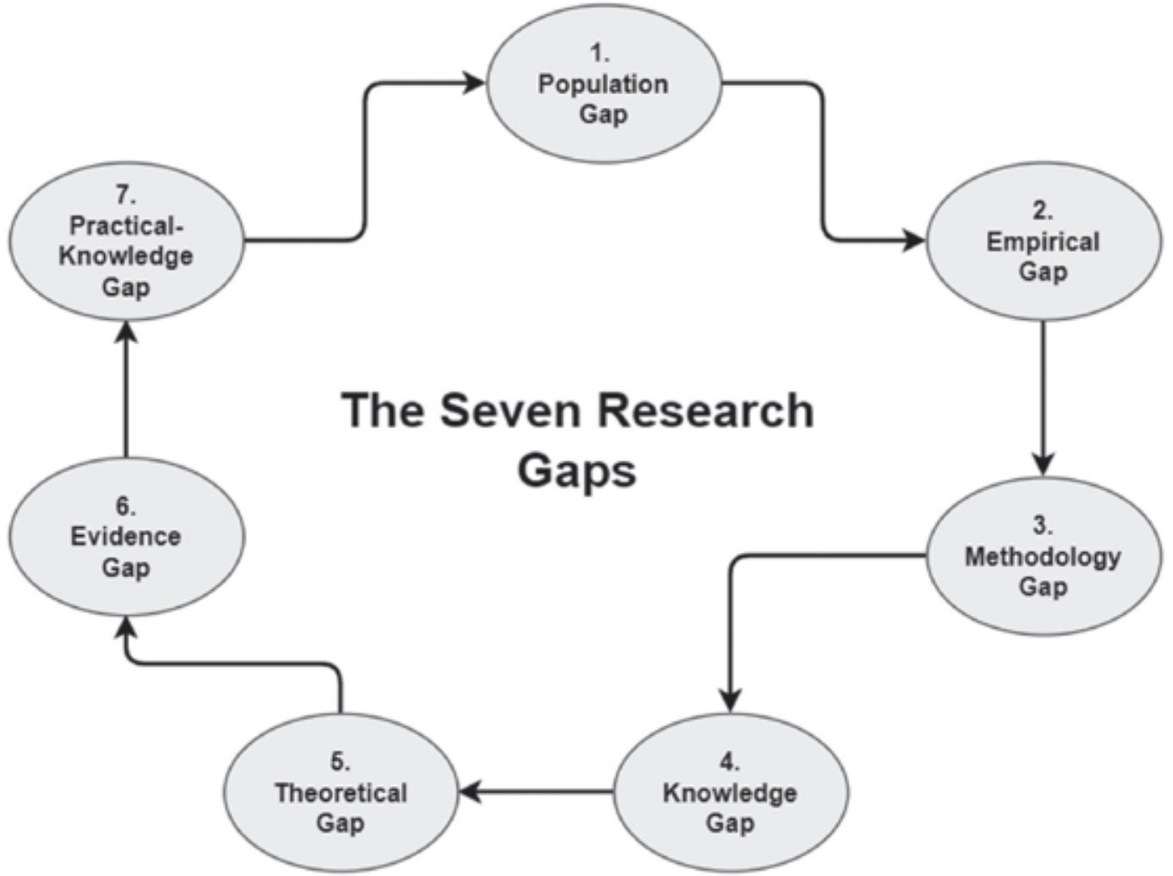
**A (good!) Literature Review should allow you to:**

- **Identify the most relevant concepts and theories in the field;**
- **Identify the most common research methods and strategies;**
- **Identify the facts for which there is (relatively) consistent evidence;**
- **Determine if there are unanswered research questions;**
- **Determine if there are (methodological) inconsistencies in the evidence produced.**

**Source:** Bryman, 2012: 98

# The Research Problem: Finding a Gap in the Literature

**According to Adu & Miles (2024), there is a set of research gaps that are recurrently identified in the literature.**

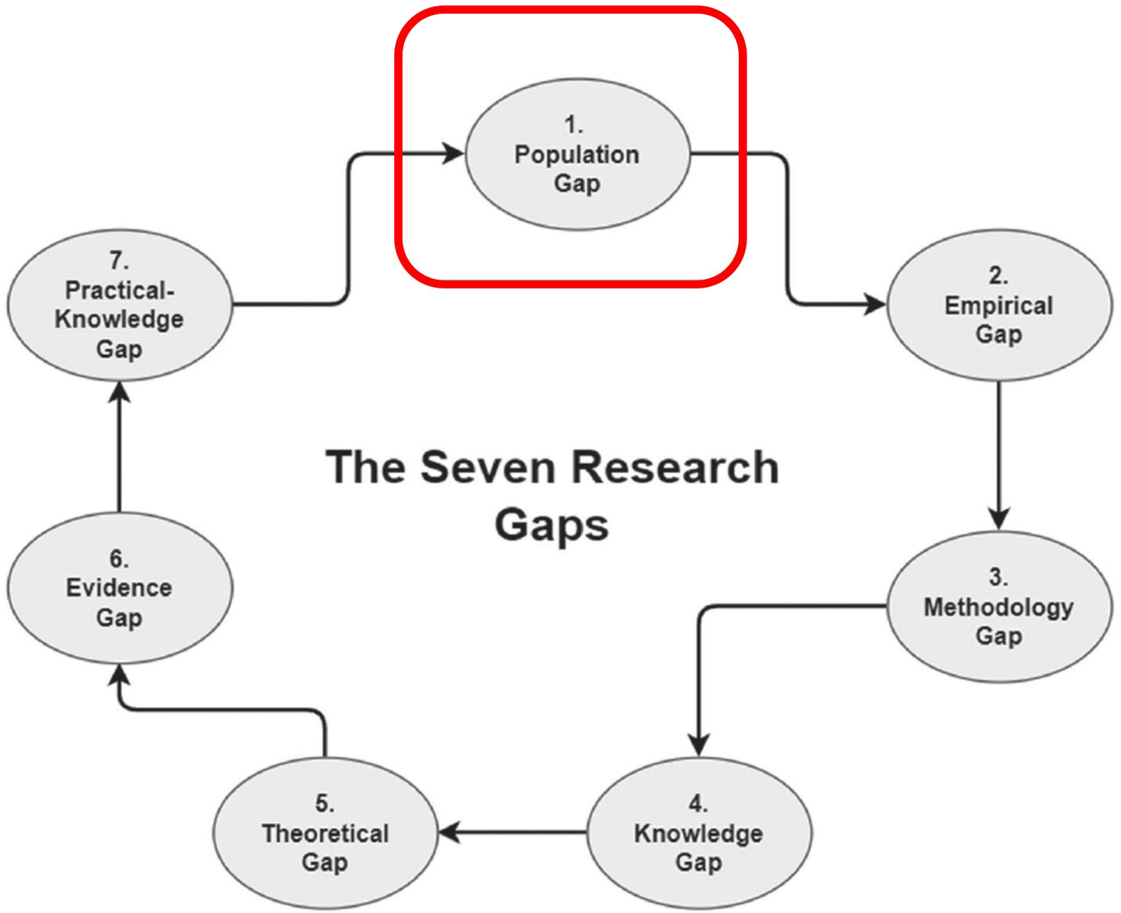



**Source:** Adu & Miles, 2024: 74-84

# The Research Problem: Finding a Gap in the Literature

## Population Gap

- **Population/group (e.g. gender, race/ethnicity, age, etc.) is underrepresented or not adequately represented in previous research.**

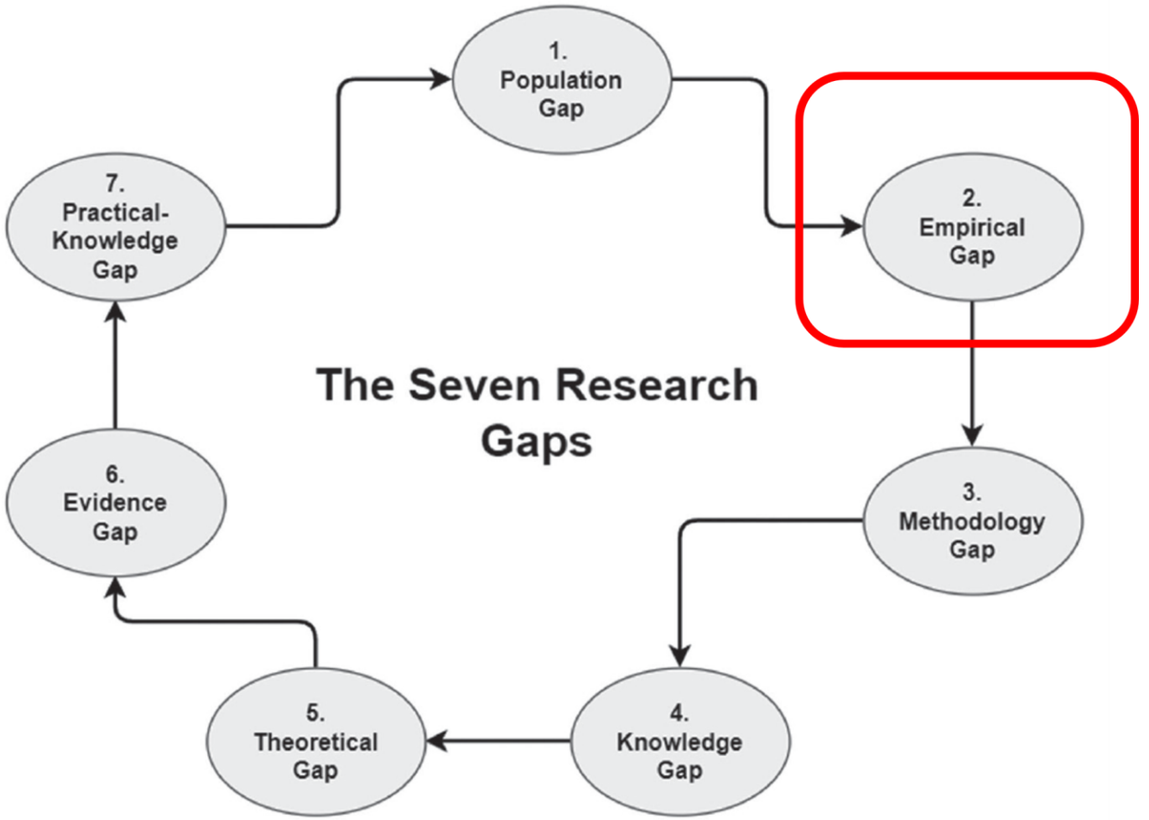



**Source:** Adu & Miles 2024: 74-84.

# The Research Problem: Finding a Gap in the Literature

## Empirical Gap

- Research results or hypotheses that need to be empirically verified/further investigated.

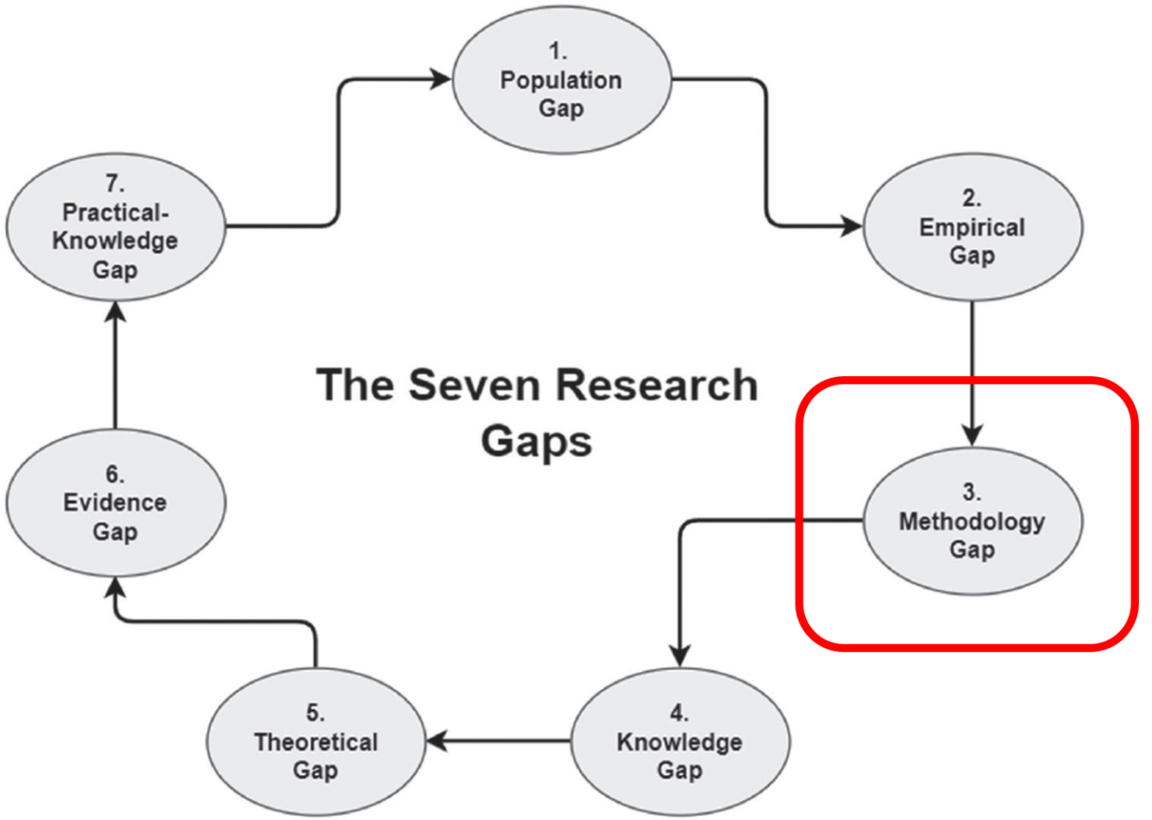



**Source:** Adu & Miles 2024: 74-84.

# The Research Problem: Finding a Gap in the Literature

## Methodology Gap

- There is an overdependence on a particular methodological approach.
- Introducing new methodological approaches can help to reinforce/contradict existing results or even generate new facts.

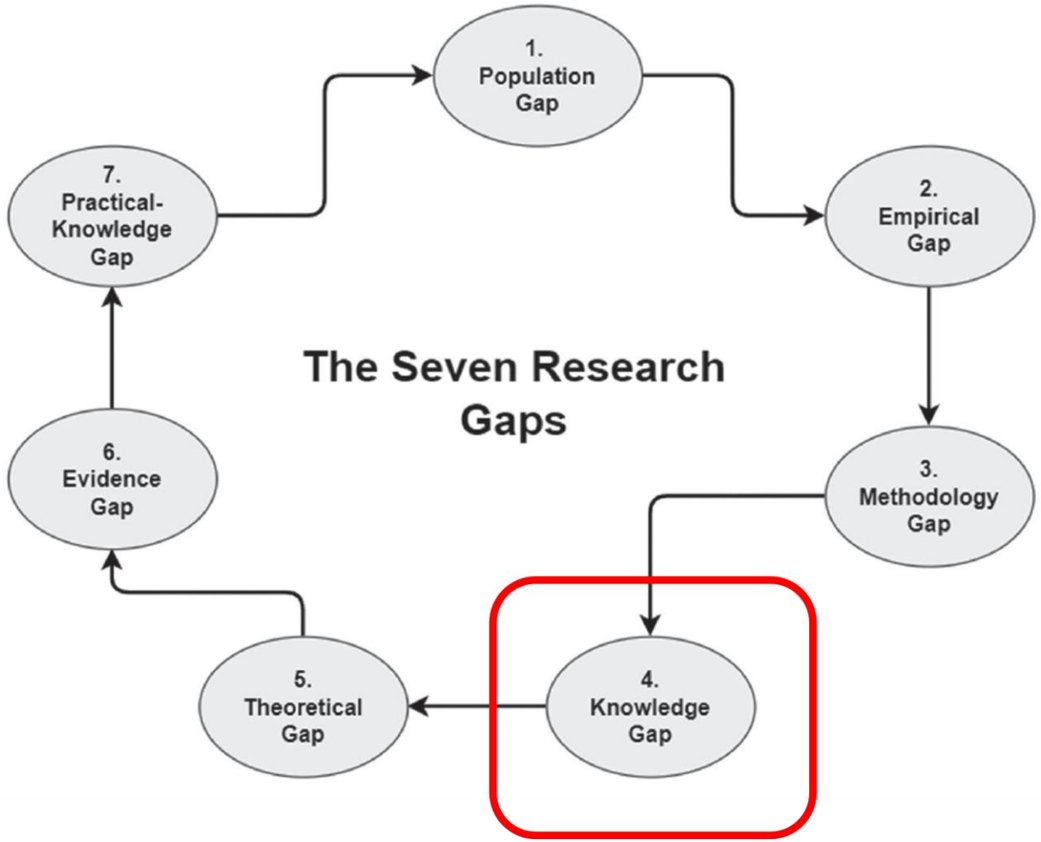



**Source:** Adu & Miles 2024: 74-84.

# The Research Problem: Finding a Gap in the Literature

## Knowlegde Gap

- **There is no evidence on the topic.**

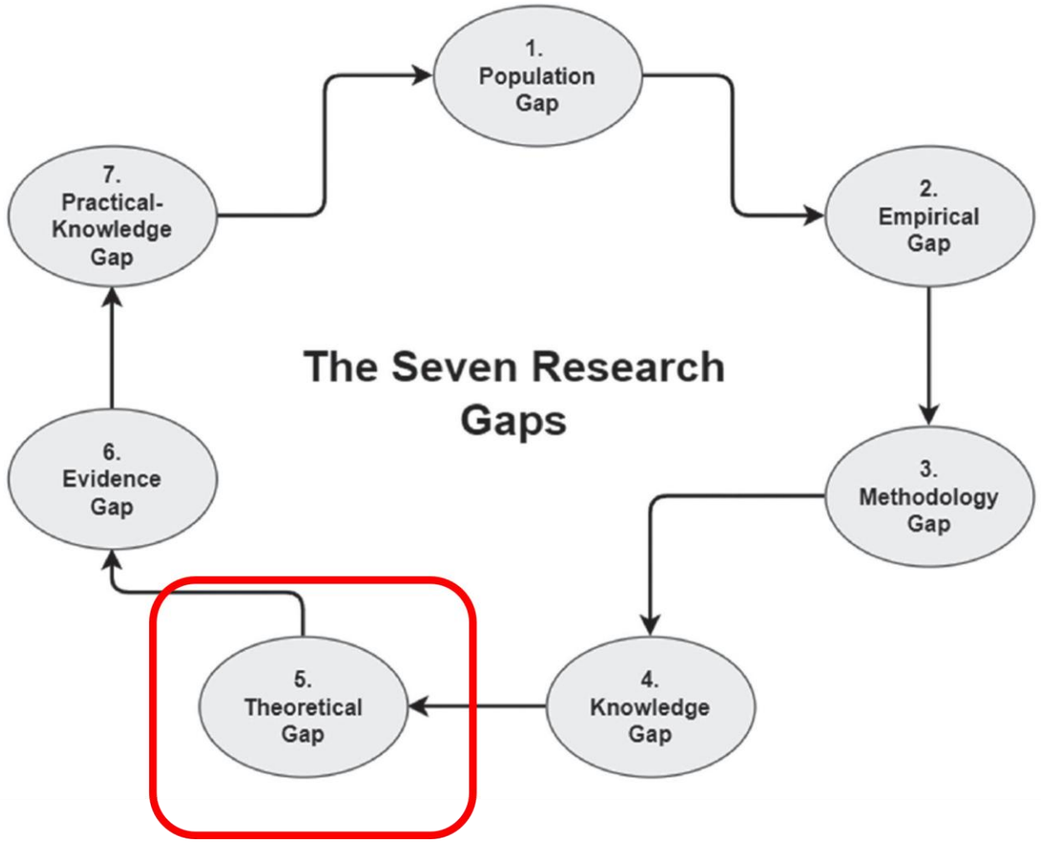



**Source:** Adu & Miles 2024: 74-84.

# The Research Problem: Finding a Gap in the Literature

## Theoretical Gap

- Lack of theory or theoretical framework on the topic.




**Source:** Adu & Miles 2024: 74-84.

# The Research Problem: Finding a Gap in the Literature

## Evidence Gap

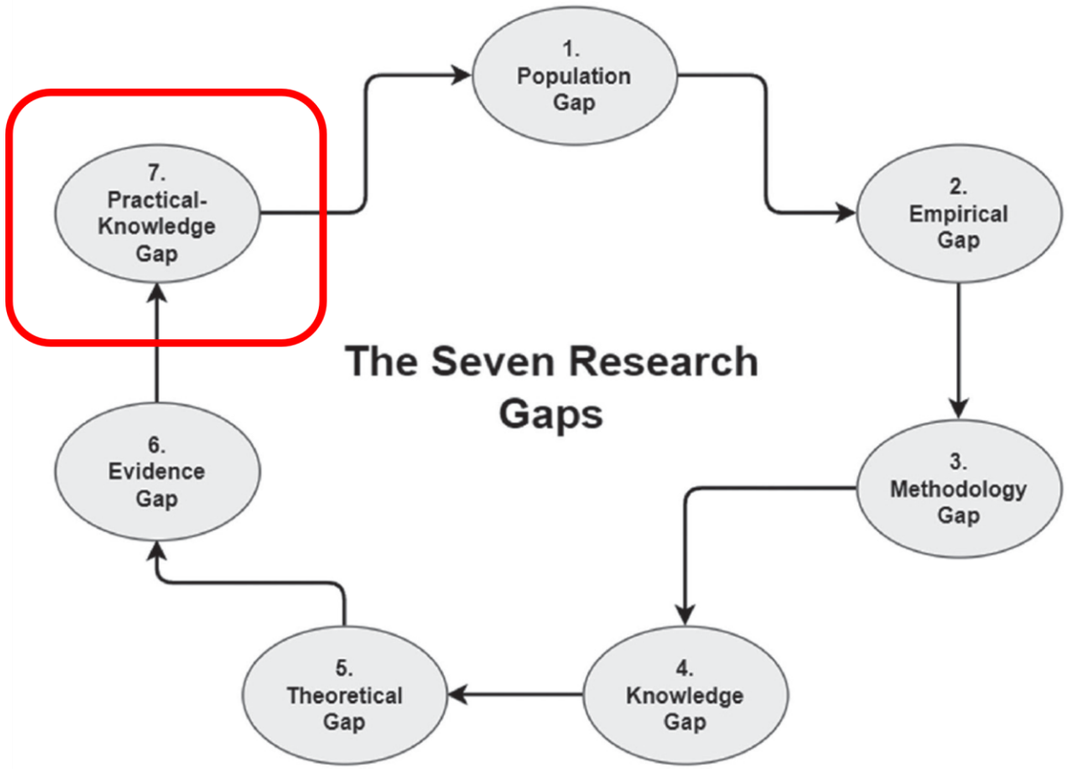
- Contradictory evidence in the literature on the topic.


**Source:** Adu & Miles 2024: 74-84.

# The Research Problem: Finding a Gap in the Literature

## Practical-Knowledge Gap

- **Professional behavior or practices diverge from the evidence or are not covered by the existing research.**

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# The Research Problem: Finding a Gap in the Literature

**What if you identify more than one gap?**

- **Focus on the one that offers the best combination of originality, feasibility, and sustainability.**

- **Assess whether the less relevant gaps are relevant enough to constitute 'Specific Objectives' (to be avoided, as this hinders alignment).**

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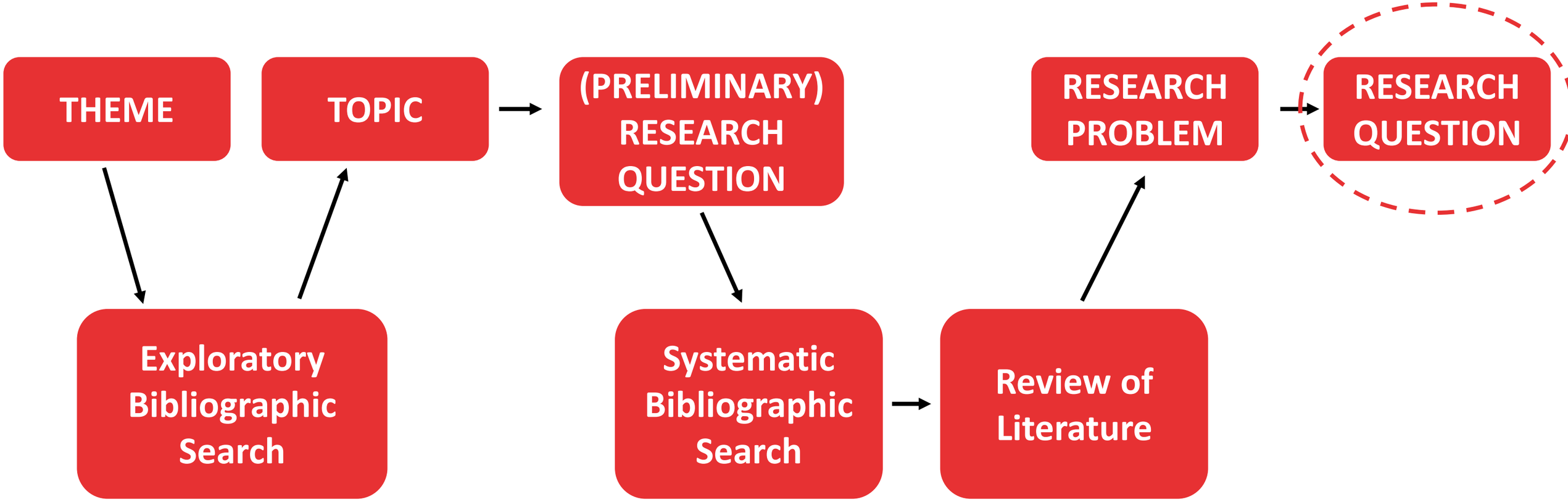
# The Path to an Effective Research Question



# FROM THE TOPIC TO THE RESEARCH QUESTION

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**Align!**
**Align!**
**Align!**

**One of the biggest difficulties faced by less experienced researchers has to do with defining the Research Problem and, subsequently, translating that into a clear and effective Research Question and into clear and achievable Objectives.**

**Source:** Kumar, 2012: 47-9

# FROM THE TOPIC TO THE RESEARCH QUESTION

**Align!**
**Align!**
**Align!**

**Good alignment between these elements (Research Problem, Research Question & &) components is fundamental for several reasons:**

- **A well-aligned study, by ensuring high levels of methodological rigor, maximizes the contribution the study can make.**
- **A well-aligned study facilitates its implementation;**
- **A well-aligned study demonstrates a solid understanding of the topic and the proposed methodology.**

**Source:** Kumar, 2012: 47-9

# The Research Question

# FROM THE TOPIC TO THE RESEARCH QUESTION

## The Research Question

**In the field of Health Sciences, there is a set of contributions (models) that can help us refine our Research Question.**

| Acrómio | Componentes | Tipo de estudo/disciplina |
|---|---|---|
| PICO[10-11,14] | Population, Intervention, Comparison, Outcome | Quantitativo/ Várias disciplinas e contextos clínicos |
| PICOT[15] | Population, Intervention, Comparison, Outcome, Timestamp | |
| PICOS[14] | Population, Intervention, Comparison, Outcome, Study type | |
| PICOC[16] | Population, Intervention, Comparison, Outcome, Context | |
| PICo[17-18] | Population, Interest Phenomenon, Context | |
| PO[11] | Population/Phenomenon Outcome | |
| EPICOT[19-21] | Evidence, Population, Intervention, Comparison, Outcome, Timestamp | |
| PICOTT/ PICOTS[22] | Population, Intervention, Comparison, Outcome, Type of question, Type of study design<br>Population, Intervention, Comparison, Outcome, Study type | |
| PECODR[23] | Problem, Exposure/Intervention, Comparison, Outcome, Duration, Results | |
| PISCOS[24] | Population, Intervention, Setting/Comparison, Outcome, Study type | Qualitativos e mistos/Saúde pública |
| PESICO[25] | Population, Environment, Stakeholders, Intervention, Comparison, Outcome, | Quantitativo /terapeutas da fala |
| PIPOH /S[26] | Population, Intervention, Professionals, Outcome, Healthcare/Setting | Quantitativo/Guidelines |

Estrutura Adaptada de: Davies[11]; Joanna Briggs Institute[13]; Martínez Díaz et al.[5]

**Source:** Sousa et al., 2018

# The Research Question

**The PICO model is particularly useful in formulating questions of a quantitative nature.**

**Table 2.4** Examples of using PICO to ask clear quantitative questions

| | *Example 1* | *Example 2* | *Example 3* | *Example 4* |
|---|---|---|---|---|
| P<br>Population and their problem | In patients with acute asthma | In children with a spinal deformity | In children with a fever | Among family members of patients with mental health problems |
| I<br>Intervention or issue | how effective are antibiotics | how effective is bracing | how effective is paracetamol as compared to | how effective is listening to tranquil music, or audiotaped comedy routines |
| C<br>Comparative intervention | as compared to standard care | as compared to observation | ibuprofen | as compared to standard care (none) |
| O<br>Outcomes or themes | at reducing sputum production and coughing? | at reducing the scoliosis curvature? | at reducing fever and infection? | in reducing reported anxiety? |

**Source:** Sousa et al., 2018

# The Research Question

**The PEO Model is particularly useful in formulating questions of a qualitative nature.**

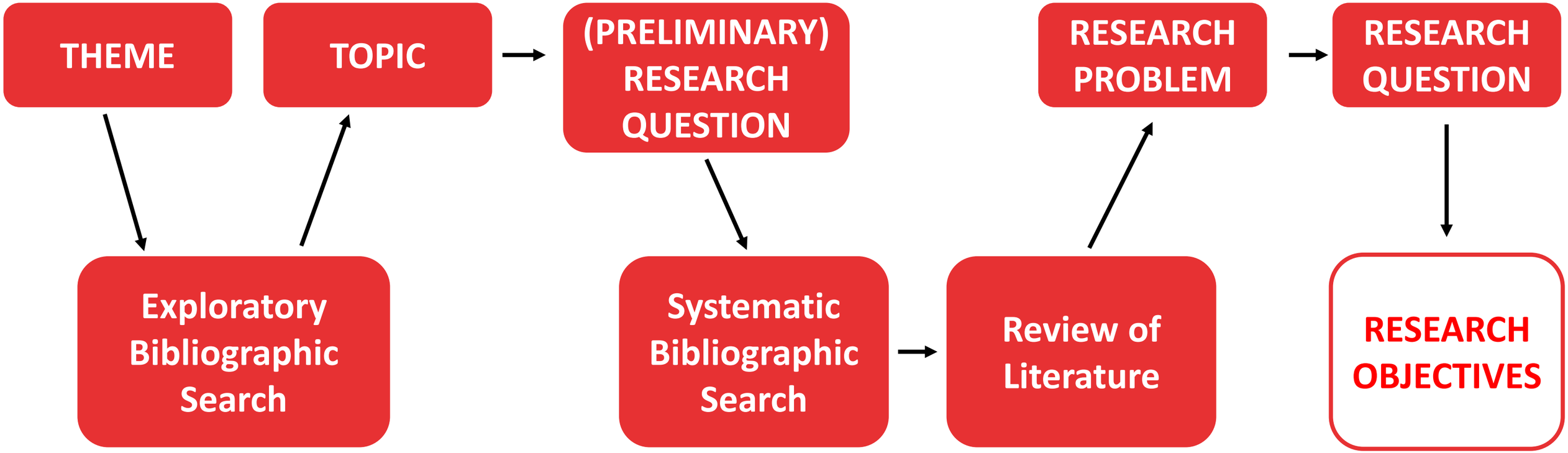
**Table 2.5** Examples of using PEO to ask clear qualitative questions

| | *Example 1* | *Example 2* | *Example 3* | *Example 4* |
|---|---|---|---|---|
| P<br>Population and their problem | In teenagers with a spinal deformity | Older patients with cancer | Student nurses in their first year at university | Family members of patients with mental health problems |
| E<br>Exposure | the development of a spinal deformity | cancer | studying to be a nurse at university and in their first year | having a family member with mental health problem |
| O<br>Outcomes or themes | the patients' views | the patients' views | the students' views | the patients' views |

**Source:** Sousa et al., 2018

# FROM THE TOPIC TO THE RESEARCH QUESTION

## The Path to an Effective Research Question



# The Research Objectives

# The Research Objectives

**Things to have in mind:**

- **Not mandatory;**
- **Some place them before the Research Question (ex. Adu & Miles, 2024);**
- **In quantitative studies, the testing of formalized Hypothesis can relace the role of Research Hypothesis;**
- **Not to be confused with Contributions, which can be mentioned in the Introduction or the Conclusion.**

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# The Research Objectives

**In this Course Unit we treat Research Objectives as subsidiary to the Research Question.**

**Under this approach, Research Objectives help to:**

- **Clarify the Research Question;**
- **Clarify how the analysis of the data will help to respond to the Research Question.**

# The Research Objectives

**Aspects to be considered when writing the 'Objective':**

- **Clear and concise;**
- **It should mention:**
  - **Fundamental concepts;**
  - **Population/Unit(s) of Analysis;**
  - **And/or context;**

**Source:** Kumar, 2012: 50

# This Is All For Today. See You Next Week!