

Identifying gaps  
in the state-of-the-art

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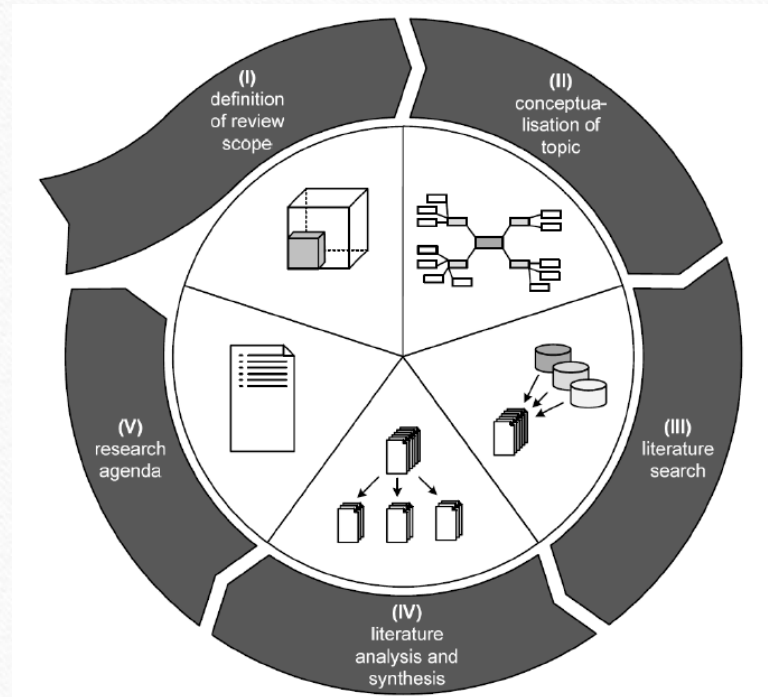
# Introduction

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- Research gaps are defined as gaps in ‘sets of information’
- Identifying research gaps is a fundamental goal of literature reviewing
- No methodological guidelines for how to identify research gaps in qualitative literature reviews ensuring rigor and replicability
- A framework for identifying research gaps in qualitative literature reviews was proposed in 2015 by Christoph Müller-Bloch and Johann Kranz in “A Framework for Rigorously Identifying Research Gaps in Qualitative Literature Reviews”

# Broke model (2009) for a framework for literature reviewing

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# Research gap/problem/agenda

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- Research Gap
  - represent an *output* of literature reviews, perceived as an *input* as for further research
  - it is possible to derive research gaps from other sources than literature syntheses
- Research Problem
  - a statement that is resolved by means of research, not necessarily a research gap
  - when examined carefully a gap in sets of information results in a call for action or resolution
  - the term focuses it focuses on the function as *input for research*
- Research Agenda
  - a set of questions for further research
  - it is not necessarily that all questions for further research are derived from research gaps
  - research gaps *are a part* of research agendas, but not necessarily exclusively

# Six forms of research problems (I)

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1. **Provocative exception:** new research finding contradicts widely accepted conclusions
2. **Contradictory evidence:** occurs if results from studies allow for conclusions in their own right, but are contradictory when examined from a more abstract point of view
3. **Knowledge void:** knowledge may not exist in the actual field of research but in a related research domain; or results of a study differ from what was expected and motivate new research in this direction

## Six forms of research problems (II)

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4. **Action-knowledge conflict:** arises when the actual behavior of professionals is different from their advocated behavior
5. **Methodological conflict:** occurs due to the influence of methodology on research results
6. **Theoretical conflict:** one phenomenon is being explained through various theoretical models

# Find examples from CS for the 6 RP types

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1. ...

2. ...

3. ...

4. ...

5. ...

6. ...

# Chart method

## to identify research gaps in literature reviews

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- only one approach exists for identifying research gaps
- chart each source according to predetermined categories
- categories could feature, for example
  - types of variables examined,
  - level of analysis,
  - important theoretical issues

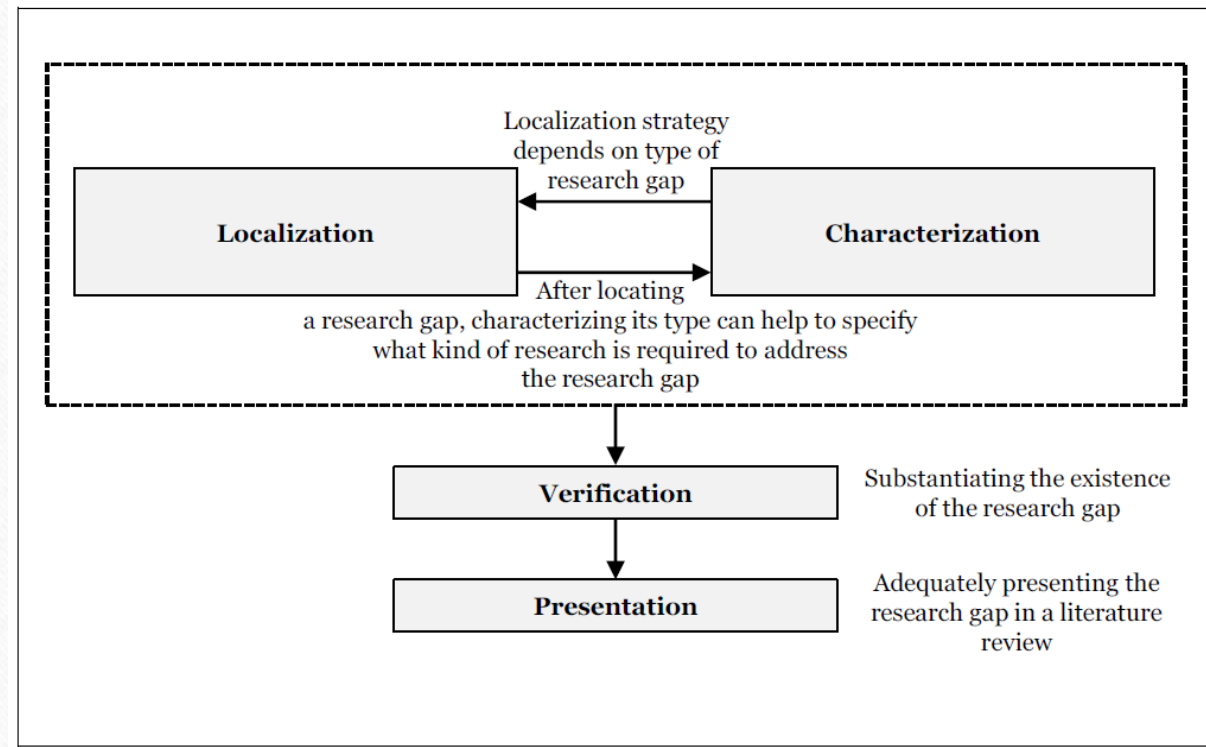


# Concept matrix

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Sources	Concept			
	Concept 1	Concept 2	Concept 3	...
Source 1	X			
Source 2		X	X	
Source 3		X		
...				

# Framework for identifying research gaps (Müller-Bloch & Kranz, 2015)



# Localization

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- commences when the literature is being synthesized
- the procedure is often creative, implicit, and informal
- the chart method can be used for research gap localization
  - perceive blank fields in the chart, which may indicate research gaps

# Localization strategy

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<b>Type of Research Gap</b>	<b>Localization Strategy</b>
Methodological conflict	Scrutinize if findings on a certain topic are inconclusive with regard to applied research methods.
Contradictory evidence	Synthesize key findings and determine contradictions.
Knowledge void	Analyze literature with regard to theoretical concepts (e.g., using the chart method) and look for specific gaps or under-researched areas of research.
Action-knowledge conflict	Collect information about action and relate this information to the knowledge base.
Evaluation void	Analyze if research findings have been evaluated and empirically verified.
Theory application void	Analyze the theories that have been employed to explain certain phenomena and identify further theories that might contribute to the knowledge base as well.

# Characterization

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- means to classify research gaps owing to the reasons of their existence
- Q: what kinds of sets of information are related to each other, and how are they related?
- Characterization vs. localization:
  - the concept of characterization is capable of enhancing the process of localizing research gaps:
    - when trying to localize research gaps, researchers can constantly refer to the concept of characterization.
  - The characterization of research gaps might enable scholars to specify what kind of research is required to resolve the respective research gap. Eg.
    - A methodological conflict indicates that there is a need to vary research methods.
    - For contradictory evidence, new theories that enable the incorporation of all evidence and possibly explain the reasons for the existence of that particular contradictory evidence may be needed.

# Verification

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- means to ensure that the research gap does indeed exist
- has the advantage of enabling researchers to substantially reduce the likelihood that the respective research gaps have been closed or do not exist, while not requiring an exhaustive literature review
- not all literature reviews are exhaustive, meaning that not the entire relevant literature is included
  - there is a need to verify the research gaps derived from the synthesis since papers may have been overlooked that reveal that the research gaps were closed before
- conduct a forward search, based on the articles from which the respective research gaps emerged or that are closely linked to the research gap
- search relevant databases or scan prevailing textbooks for search terms that refer to the research gap

# Presentation

- Sequential presentation describes the research gaps after the synthesis, such that the research gaps are presented separately from the synthesis
- Parallel presentation features the research gaps during the discussion of the synthesis.

