Translating your research topic to a search query

Norma Fötsch, NSM Library Team, contact: n.fotsch@ubn.ru.nl
From topic to research question

- Research idea, broad topic
- Narrowing down the topic
- More specific question
- Main research question
- Sub question
Literature helps to formulate and/or answer your research question

- Research idea, broad topic
- Narrowing down the topic
- More specific question
- Main research question
- Sub question

Background information about your topic area/research field, e.g. handbooks

More detailed information, e.g. overview articles of your topic

Specific information, e.g. research articles, data & statistics
Methods to develop a research question

- Key elements
- Brainstorm
- 5 W’s
- Framework
- Sub question
Use the methods to develop a search query to find literature

Key elements

Brainstorm

5 W’s

Framework

Sub question

Research idea, broad topic

Narrowing down the topic

More specific question

Main research question

Sub question

Background information about your topic

Area/research field e.g. handbooks.

More detailed information e.g. overview articles of your topic

Specific information e.g. research articles, data & statistics

Use the methods to develop a search query to find literature

Key elements

Brainstorm

5 W’s

Framework

Sub question

Brainstorm

Context

Innovations

Mechanisms

Outcome

Specific information e.g. research articles, data & statistics

Area/research field e.g. handbooks.

More detailed information e.g. overview articles of your topic

Background information about your topic

Research idea, broad topic

Narrowing down the topic

More specific question

Main research question

Sub question
1. Define the key elements

Situation

- choosing a topic
- orientation on the topic

Result of literature search

- impression of the existing published research
Topic: 
Urban heat islands and the changes of land use

Key elements: 
Urban heat island + land use
Key elements and search terms:

<table>
<thead>
<tr>
<th>Urban heat islands</th>
<th>Land use</th>
</tr>
</thead>
<tbody>
<tr>
<td>“urban heat islands”</td>
<td>“land use”</td>
</tr>
<tr>
<td>UHI</td>
<td>land-use</td>
</tr>
<tr>
<td>“urban climat*”...</td>
<td>“urban planning”...</td>
</tr>
</tbody>
</table>

Search query:

(“urban heat islands” OR UHI OR “urban climat*”) AND (“land use” OR land-use OR “urban planning”)
2. Brainstorm session

Situation
- **understanding the topic**
- **clarifying the different aspects**
- **narrowing down the topic**

Result of literature search
- **overview of which aspects are analyzed in the literature**
Topic: **Women and politics**

Brainstorm about the topic:
**Collect possible aspects of your topic**

- Voters
  - How they vote
  - Influence on voters
- Media coverage
- Elections
- Women in the media
- In different countries
- Numbers of women
- Levels of government
- Differences from men
Choose an aspect and collect search terms:

**Women politician at national level in the Netherlands**

<table>
<thead>
<tr>
<th>Women</th>
<th>Politician</th>
<th>National level</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>women</td>
<td>politician*</td>
<td>national level</td>
<td>Netherlands</td>
</tr>
<tr>
<td>female</td>
<td>president*</td>
<td>government</td>
<td>Dutch</td>
</tr>
<tr>
<td>gender...</td>
<td>legislator*...</td>
<td>parliament...</td>
<td>The Hague</td>
</tr>
</tbody>
</table>

Search query:

(women OR female OR gender) **AND** (politician* OR president* OR legislator*) **AND** (national level OR government OR parliament) **AND** (Netherlands OR Dutch OR The Hague)
3. Ask the 5 W’s – who, what, when, where, and why

Situation

- specifying your research question
- clarifying the aspects
- formulating searching and selecting criteria

Result of literature search

- most significant items in the published literature
Topic:
Integration of corporate sustainability

Ask the 5 W’s + H:
Who is involved?
What do you want to know?
When does this take place?
Where does this take place?
Why is this topic important?
How did it happen?
Who is involved? - firms (small, medium or big)

What do you want to know? - how to integrate corporate sustainability

When does this take place? - last ten years?

Where does this take place? - global, Europe or specific country?

Why is this topic important? - impact of companies on their context

How did it happen? - change management, change agents (internal or external), different approaches
## Answers and search terms:

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>firm*</td>
<td>corporate sustainability</td>
<td>change management</td>
</tr>
<tr>
<td>compan*</td>
<td>social responsibility</td>
<td>business strategy</td>
</tr>
<tr>
<td>enterprise*...</td>
<td>sustainable development</td>
<td>organizational change</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
Search query:

(firm* OR compan* OR enterprise*) AND (“corporate sustainability” OR “social responsibility” OR “sustainable development”) AND (“change management” OR “business strateg*” OR “organizational change”)

Search filters and/or selecting criteria:
When (period) and Where (region)
4. Frame your question

Situation

- if the main research question is (more or less) clear
- clarifying the aspects
- formulating searching and selecting criteria

Result of literature search

- what is already known about the topic and
- existing evidence in published literature
Topic:

How do firms integrate corporate sustainability into their business activities with the help of external change agents?

Frameworks:

Break down your question into manageable research topics. Different frameworks like PECO or CIMO give guidance on how to frame your research question.
<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
</table>
| P      | **Population**  
Statement of the groups to be considered (e.g. all those in employment, teachers self-employed etc.) |
| E      | **Exposure**  
Exposure category can be used to specify any interdependent variable that is not an intervention of some sort (e.g., leadership behaviours, attitudes, experience of HR practices) |
| C      | **Comparators**  
Against what is the intervention being compared (e.g. practice as usual, other interventions) |
| O      | **Outcome**  
Outcomes of interest (e.g. sickness absence, turnover, creativity) |

<table>
<thead>
<tr>
<th>C</th>
<th>Context</th>
<th>Who are the individual of interest? Or Which aspects of the institutional setting are of interest? E.g. politics, power, technical system</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Intervention</td>
<td>What is the intervention of interest? e.g. leadership style, planning and control system, performance management etc.</td>
</tr>
<tr>
<td>M</td>
<td>Mechanism</td>
<td>What are the mechanisms of interest? What is it about interventions acting in a context that leads to the outcome?</td>
</tr>
<tr>
<td>O</td>
<td>Outcome</td>
<td>What are the relevant outcomes? What is the primary outcome and what are the secondary outcomes? Performance improvement, cost reduction, low error rates etc.</td>
</tr>
</tbody>
</table>

How do firms integrate corporate sustainability into their business activities with the help of external change agents?

CIMO Framework and search terms:

<table>
<thead>
<tr>
<th>Context</th>
<th>Intervention</th>
<th>Mechanism</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>firms*</td>
<td>agent*</td>
<td>change management</td>
<td>corporate sustainability</td>
</tr>
<tr>
<td>“small and medium sized enterprises”</td>
<td>consultant*</td>
<td>business strateg*</td>
<td>sustainable development</td>
</tr>
<tr>
<td>SME</td>
<td>advis#r</td>
<td>management approach*</td>
<td>....</td>
</tr>
<tr>
<td>...</td>
<td>....</td>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>
Search query:

(firm* OR sme OR “small and medium sized enterprises”) AND (agent* OR consultant* OR advis*r*) AND (“change management” OR “business strateg*” OR “management approach*”) AND (“corporate sustainability” OR “sustainable development”)

Selecting criteria: CIMO
5. Formulate sub questions

Situation

- *if the main research question is clear*
- *answering the research question*
- *formulating searching and selecting criteria*

Result of literature search

- *evidence for / answer to the sub question*
Research question:

What are the reasons of poor compliance with rules on selling alcoholic beverages to minors in the Netherlands?

Sub questions and key elements:

- What are the rules on selling alcoholic beverages to young people in the Netherlands?
- What is known in public administration and social science literature about the reasons to observe rules?
- ...
Key elements and search terms
(for each sub question separately):

<table>
<thead>
<tr>
<th>observe</th>
<th>rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>observ*</td>
<td>rules*</td>
</tr>
<tr>
<td>compl*</td>
<td>regulation*</td>
</tr>
<tr>
<td>respect* ...</td>
<td>law ...</td>
</tr>
</tbody>
</table>

Search query:

(observ* OR compl* OR respect*) AND (rule* OR regulation* OR law)
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Thanks to:

- Lonneke Frie for sharing her experiences.
- Katerina Manevska and Jan Hendrik Valgaeren for their feedback.
- Ellen Mastenbroek for the topic selling alcoholic beverages to minors.
- Laurier Library (https://www.youtube.com/watch?v=1oJNO6PYZe4)