Understanding Information-Seeking Behavior of Social Scientists

Meet the Experts – GESIS online talks

Knowledge technologies for the Social Science: Access to Social Science Data and Services

Dr. Dagmar Kern, 18.1.2024
Overview

• What is information-seeking behavior?
• Why is it important to understand it?
• How to research information-seeking behavior?
• How can the identified information-seeking behavior be used to support users?
• Will information-seeking behavior change in the future?
What is Information Seeking Behavior?
Definition: Information-Seeking

“The user’s constructive activity of finding meaning from information in order to extend his or her state of knowledge on a particular problem or topic.”

(Kuhlthau, 1991)
Ellis’ Information Seeking Model (1993)

Web Search
Digital Libraries
Data Repositories
...
Ellis' extended Information Seeking Model by Meho & Tibbo (2003)

Information Seeking vs. Information Retrieval
Why is it important to understand information-seeking behavior?
... to make our users happy!
… to improve our digital services

GESIS Search
https://search.gesis.org

Meet the Experts – 14.03.2024
Searching the Social Sciences with GESIS Search
Information-Seeking behavior research as part of the User-Centered design process
How to research information-seeking behavior?
Research Methods

• Diary study
• Questionnaires
• Log-file Analysis
• Interviews
• Observations
Research Methods

• **Diary Study**
• Questionnaires
• Log-file Analysis
• Interviews
• Observations
Diary study @ GESIS (1)

• 12 German Social Science researchers (5 female, 7 male)
• Task: Protocol information needs over a period of two weeks and provide information about the approach you used to meet the information need

➢ 54 individual statements

Diary study @ GESIS (2)

Outcome: Categories of information needs

• Literature
• Research data
• Variables in research data
• Support for data analysis
• …

Research Methods

• Diary Study
• **Questionnaires**
• Log-file Analysis
• Interviews
• Observations
Online Questionnaire @ GESIS (1)

- 337 participants German Social Science researchers (Professors, Postdocs, PhD students)
- Task 1: “Check each of the 9 statements that corresponds to your own information need.”
- Task 2: “If you're thinking about the last week, what information were you looking for in the context of your scientific work?”

→ 331 information needs

Online Questionnaire @ GESIS – Results Task 1

<table>
<thead>
<tr>
<th>I’m looking for</th>
<th>Number (n=337)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>... literature on a specific topic.</td>
<td>293</td>
<td>Literature</td>
</tr>
<tr>
<td>... for full texts, which I can download directly.</td>
<td>287</td>
<td>Literature</td>
</tr>
<tr>
<td>... national and/or international research data.</td>
<td>216</td>
<td>Research data</td>
</tr>
<tr>
<td>... social science items and scales to create a questionnaire.</td>
<td>171</td>
<td>Measurement instruments</td>
</tr>
<tr>
<td>... information about which variables are contained in certain research data.</td>
<td>163</td>
<td>Variables in research data</td>
</tr>
<tr>
<td>... for clues as to whether certain research data are suitable for answering my research question.</td>
<td>159</td>
<td>Research data</td>
</tr>
<tr>
<td>... variables collected in various studies to compare them.</td>
<td>154</td>
<td>Variables in research data</td>
</tr>
<tr>
<td>... research data mentioned in a paper.</td>
<td>134</td>
<td>Research data</td>
</tr>
<tr>
<td>... for cooperation partners for a research project.</td>
<td>62</td>
<td>Networking / Cooperation</td>
</tr>
</tbody>
</table>

Online Questionnaire @ GESIS – Results Task 2

Outcome: Categories of information needs and use cases

• Research data
• Variables
• Support for data analysis
• Literature

Research Methods

- Diary Study
- Questionnaires
- Log-file Analysis
- Interviews
- Observations
Log File Analysis – GESIS Search

Figure 6: First eight user actions in n=6,812 sessions with positive actions. Search actions in green, view_record actions in blue, positive signals in orange, other actions in grey.

Research Methods

- Diary Study
- Questionnaires
- Log-file Analysis
- Interviews
- Observations
Research Methods

- Surveys
- Diary
- Log-file Analysis
- Interviews
- Observations
Observational study @ GESIS (1)

• Focus on Dataset search
• 12 Social Scientists
• Observations at their workplaces
• Task: “In the context of your research, you need research data. For today, you decide to start with the search for research data.”

Observational study @ GESIS (3)

• **Key finding**
  • Literature search is an important part of dataset search.
  • Tools are unknown
  • Tools are creatively misused
  • Relevance assessment is very complex
  • Accessibility to datasets is limited
  • Dataset search suffers from missing interlinks
  • Dataset search literacy is low

What do we do with the knowledge about information-seeking behavior?
... derive requirements for the GESIS Search and other digital GESIS products
Will information-seeking behavior change?
• Natural Language Search
• Conversational Search
Genuine information need of social scientist (1)

• Online-Survey (72 Social Scientists)

• Task 1: “For answering your current research question, you need quantitative data. You have already searched for data but did not find a suitable dataset yet. You meet a colleague in the coffee corner. You know that your colleague has a great overview of your research topic. You tell her about your struggle to find relevant data. Your colleague offers help and asks you to describe exactly what data or variables you are looking for.”

Genuine information need of social scientist (2)

Request: “I am looking for representative surveys of the population that collects the personal attitudes towards democratic principles.”

Request: “I am looking for data on occupational and financial consequences of the corona crisis on older workers.”

Interested in participating in our user studies?

Contact me:
Dagmar.kern@gesis.org
Information seeking behavior is about **people** and the **processes** they use when seeking information. There are research methods helping us to understand the processes in order to provide support systems that are a pleasure to use.

The people, behaviors, processes, systems, and information involved are **constantly changing** and adapting, but one thing remains the same: we’ll always want information to make sense of the world.
Expert contact & GESIS consulting

**Contact:** you can reach the speaker via e-mail: dagmar.kern@gesis.org

**GESIS Consulting:** GESIS offers individual consulting in a number of areas – including survey design & methodology, data archiving, digital behavioral data & computational social science – and across the research data cycle.

Please visit our website [www.gesis.org](http://www.gesis.org) for more detailed information on available services and terms.
Upcoming talks

• 15.02.2024: Five ways to turn your dataset into click bait
• 14.03.2024: Searching the social sciences with GESIS Search
• 11.04.2024: How knowledge graphs can help you to share research data and information
• 16.05.2024: Opportunities and challenges of Large Language Models for the social sciences
• 13.06.2024: Preserving and analysing large-scale Twitter data
• 11.07.2024: Introduction to scholarly information extraction

• Please visit our meet-the-experts website:
Thank you for participating!