





# Searching the Social Sciences with GESIS Search

### Meet the Experts – GESIS online talks

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

Dr. Daniel Hienert, 14.3.2024







## Introduction





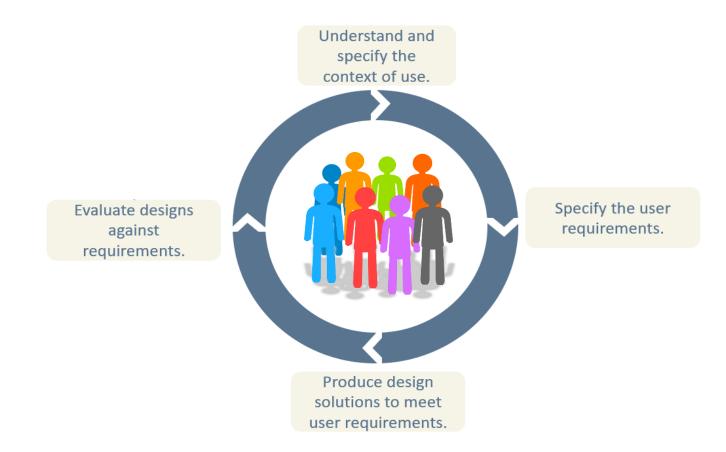
## Overview

- Design Choices for GESIS Search:
  - One Search for Everything
  - Categories
  - Support Relevance Decision
  - Support for Data & Materials
  - Links
- New design choices ahead....





## User-Centered design process

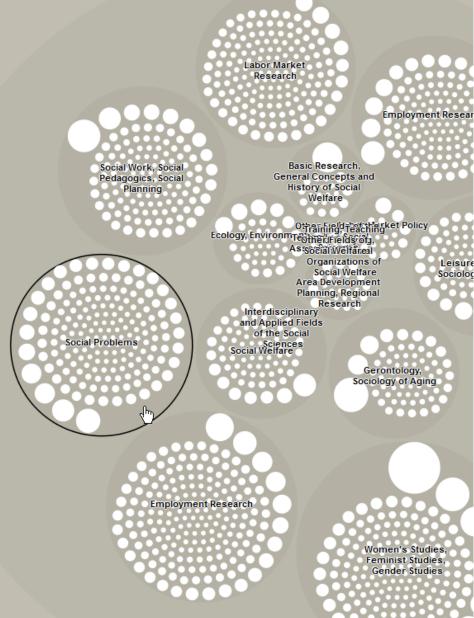


## https://vizgr.org/ social-sciencetopics/

Education and Pedagogics Interdisciplinary and Applied Fields of the Social Sciences Demography Economics Legal Science and AdministScience Science Ethnology, CultuSocial Police Anthropology, Ethnosociology Psychology Political Science Science Communica Sociology

Hienert, Daniel. 2017. "User Interests in German Social Science Literature Search – A Large Scale Log Analysis." In CHIIR '17 Proceedings of the 2017 Conference on Human Information Interaction and Retrieval, 7-16. New York: ACM. doi:

New York: ACM. doi: http://dx.doi.org/10.1145/3020165.3020168.



racismsocial integration discrimination foreign worker ehrenamt scho family minderjährig deutschland integration flüchtling Switzerlandsuicide integration beratung unterkunft gemeind schul kinder Austria handicapped propensity to soci violence sociology carstigmatizaticTurk rehabilitation flüchtlinge flüchtlinge motivation motiv parents ehrenamt cause man drug peverygendersocial pedagogy factors student ideo addiction jugend europa deutschland dänemark Europe North flüchtlingspolitik Rhine-Westphaliproje dassistance for the horseyere disability unself horseyere disability comb Germany identity deprivats ocial control minderjährige flüchtlinge woman statisticsAsiaproblem politics analys unbegleitete jugendliche minderjährig minderjaehrige conception counseling ethnic group right-wing social seemigrant late migrant radicalism nursing care for the assistance group occupats research approach in mental illn asyl migration trauma fluchtling jugendliche soziale migration soccer flucht mental disability socializanutrition incluspemergencyethnicityredia aggress deutschland flucht soziale antisemitism elderly vagrancy tovorthography mod anguageris blent crime ulture diskurs king fluchtling freiwillige asyl vocational edu dependence empiriself-determination alien policy edu disability attitude asylum seeker special education sexual abuse university unemployed person Flüchtling report girlapartment Perlin prejud integration ehrenamt minderjahrige jugenalicher fluchtlingspolitik criminality domestic violencial factors German Demogra smokingat Britainture assistance GDR) alcohol consumption junge jugendlichen drug abuse income **New Federal** adolescent flüchtling flüchtlinge flücht minderjährige minderjahrige minderjahrigkeit minderjahrigkeit effect social effectspingcial conflict social inequality youth trauma alcoho fringe group research theory exclusion deviant behavior flüchtling rauma flucht flucht fluchtlinge integration soziale migration asylverfahren krankneit arabischer child social policy migration xenophobia therapy social work refugee violence minderjährige economics munich centerfor poverty freesemann oliver kompetenz soziale fluchtling deutschen asylant asylbewerber flüchtlingen arbeitnetzwerke integration medien ordnung soziale

sicherung

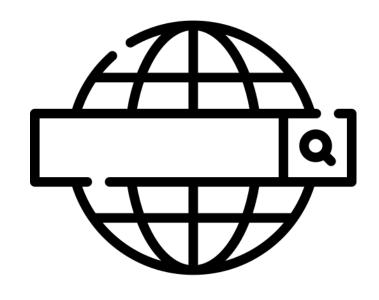




# DESIGN CHOICE: One Search for Everything







Web Search



**Digital Libraries** 



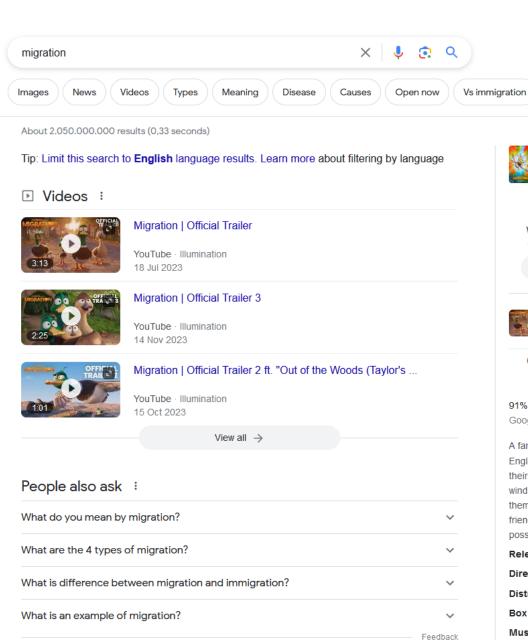
**Data Repositories** 

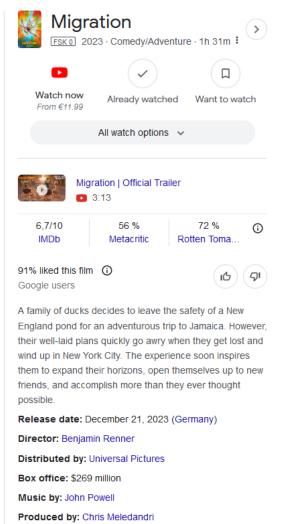






Web Search



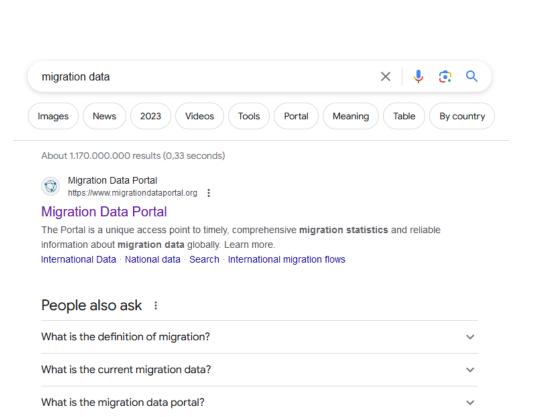


All filters ▼ Tools





Web Search



Feedback



International Organization for Migration

https://worldmigrationreport.iom.int > wmr-2022-intera...

#### Interactive World Migration Report 2022

The World **Migration** Report 2022 presents **data**, **statistics** and research on **migration**, global economic and social shifts and policy about human mobility.



Statistisches Bundesamt

What is migration data used for?

https://www.destatis.de > Population > Migration > \_node :

#### Migration flows - German Federal Statistical Office

16 Feb 2023 — Results of **migration statistics** on external and internal migration show what migration ... Data on migration across Germany's borders by country ...

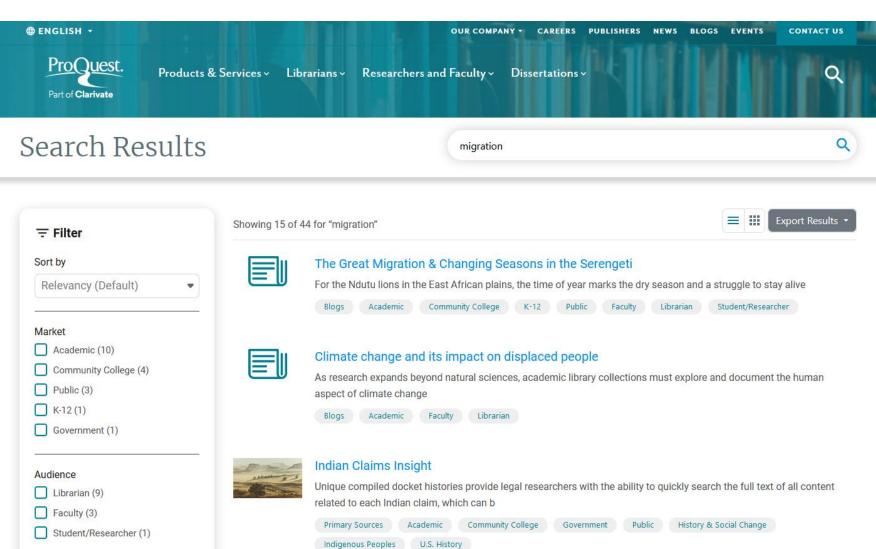






**Digital Libraries** 







→ Sign In



**Data Repositories** 







### Parameter Sensitivity in the Predication of DNAPL Infiltration and Redistribution in Heterogeneous Porous Media

Tissa Illangasekare, Mini Mathew, Fritjof Fagerlund, Auli Niemi & Tissa Illangasekare Content published 2006 in DTU Data

Subsurface heterogeneity has a significant influence on infiltration and distribution of DNAPLs. Numerical models of multiphase flow are limited by their ability to predict behavior of DNAPLs in the field due to lack of accurate data on characterization of heterogeneity. However, these models help to obtain insights into the complex behavior that will be useful in designing effective remediation schemes. A number of multiphase flow codes that have the ability to capture the fundamental processes that control the migration of NAPLs exist. However, the issue of which constitutive model and parameters need to be used in simulating DNAPL behavior at various scales of interest is not studied satisfactorily. With the goal of contributing to the knowledge needed to address this issue, an experimental study was conducted to generate an accurate data set on the migration of DNAPLs in a synthetic aquifer with various combinations of heterogeneous/homogenous configurations. This paper presents the results of a study where the data from these experiments was used in combination with an existing multiphase code UTCHEM9 to evaluate constitutive model sensitivity to prediction of both infiltration and redistribution. In the experiment, a tank with dimensions 0.71 m x 0.53 m x 0.04 m was packed with two layers. The layer in which the spill occurs was packed using five well-characterized sands to represent a spatially correlated random field with geostatistical parameters; Lnk of 22.5 (k in m2) and variance of 1. Second layer was homogenously packed with a single sand. The interface between the two layers had a slope of 3.5°. NAPL was injected as point source and saturation distribution was accurately monitored using an automated x-ray attenuation system. Modifications to the code were made to incorporate hysteresis and accommodate layer inclinations. The model simulations were conducted for two phases of the experiment; during NAPL injection and re-distribution for the following cases: (1) Brooks Corey drainage model during the injection and redistribution, without hysteresis and entrapment, (2) Brooks and Corey drainage model during injection and imbibition during redistribution, without hysteresis and entrapment, (3) Parker and Lenhard model with hysteresis, (4) Parker and Lenhard model without hysteresis, and (5) Brooks and Corey drainage model with trapping during injection and redistribution. The analysis shows during injection perio...

DOI registered April 11, 2011 via DataCite.



#### **Creators & Contributors ?**

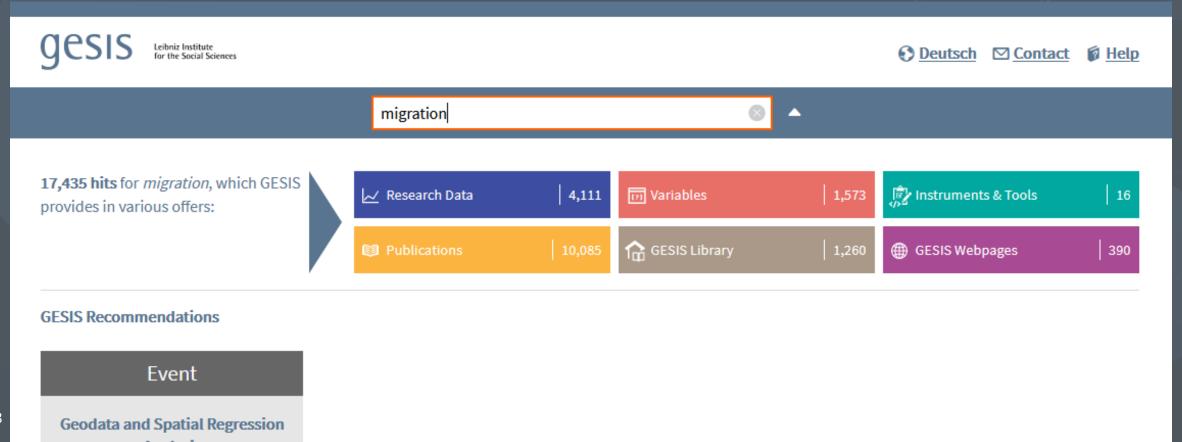
☐ Asmus, Ragnhild	464
☐ Asmus, Harald	459
☐ Wiltshire, Karen Helen	448
☐ Rick, Johannes J	448
☐ Bauer, Silke	61
☐ Abel, Guy	60
☐ Desmet, Peter	58
☐ Morales, Laura	39
☐ Liechti, Felix	38
☐ Schaa, Volker R.W.	37
(Ed.)	

#### **Publication Year**

2024	3,129
2023	21,458
2022	24,634
2021	23,774
2020	24,909
2019	22,283
2018	18,055
2017	13,768
2016	13,011
2015	14,004
7 2014	7 126

## DESIGN CHOICE: One Search for Everything

## https://www.gesis.org







# DESIGN CHOICE: Categories for Information Types





## Diary study

- 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

Outcome: Categories of information needs

- Literature
- Research data
- Variables in research data
- Support for data analysis

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## Online Questionnaire

- 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?"
- → 334 information needs





## Online Questionnaire Results Task 1

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

Publications (1)

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20,776 Hits

Research data

(4,111)

**Variables** 

(1,573)

Instruments &

Tools

(16)

**Publications** 

**GESIS Library** 

(1,260)

**GESIS Webpages** 

(378)

What do you find

~

(?)

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## DESIGN CHOICE: Categories

Category	Description and Sources	Count
Research Data	Metadata of <i>German studies</i> retrieved from the GESIS data archive as well as metadata of <i>international studies</i> , harvested from 30 international data providers such as ICPSR, DANS or the UK Data Archive.	64,725
Variables	Questions & Variables from research data archived in GESIS data catalogue.	557,417
Instruments & Tools	Information about <i>tools for designing surveys and data collection</i> such as pretested response scales, pretested questionnaires or syntax files to conduct analysis in statistical software.	518
Publications	Open access publications and literature linked to research data.	224,625
GESIS Library	Publications focused on Empirical Social Research and related fields	136,801
GESIS Webpages	Webpages from the GESIS Homepage including consulting services and trainings for social scientists.	7,814





# DESIGN CHOICE: Support Relevance Decision





## Genuine information needs of social scientist

- 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."

## DESIGN CHOICE: Support Relevance Decision

ا ، Research data

(4,113)

(?) Variables (1,573)

Instruments & Tools (16)

Publications (13,459)

GESIS Library (1,260)

GESIS Webpages (378)

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show more filters

Current Questions on Migration / Integration (August 2023)

Presse- und Informationsamt der Bundesregierung, Berlin

Date(s) of Data Collection: 16.08.2023 - 22.08.2023

GESIS, Cologne. ZA8722 Data file Version 1.0.0, https://doi.org/10.4232/1.14246

Abstract: The short survey on current issues relating to migration/integration was conducted by the opinion research institute Kantar Public on behalf of the Press and Information ... more

<u>Current Questions on Migration / Integration (October 2022)</u>

Presse- und Informationsamt der Bundesregierung, Berlin

Date(s) of Data Collection: 04.10.2022 - 11.10.2022

GESIS, Cologne. ZA7919 Data file Version 1.0.0, https://doi.org/10.4232/1.14083

Abstract: The short survey on current questions on migration / integration was conducted by the opinion research

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## DESIGN CHOICE: Support Relevance Decision





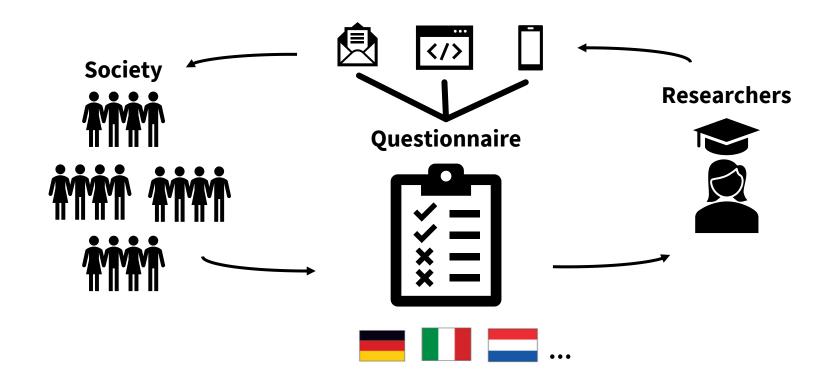


# DESIGN CHOICE: Support for Data & Materials





# Collecting data in the empirical social sciences







## Resulting data and information from data collection

- Study metadata
- Raw data files
- Questionnaires
- Codebooks with questions, variables, answer items
- Other materials -> Method report,
   Standards, Classification, Scales, Question texts, Coding
- Primary and secondary literature

## DESIGN CHOICE: Data & Materials

migration

Services ▼ Research ▼ Institute ▼

< Back

✓ Research data

## Attitudes Towards Values and Religion of Germans With and Without Migration Background and Foreigners in Germany

Neu, Viola; Pokorny, Sabine; Roose, Jochen

GESIS Data Archive, Cologne. ZA7757 Data file Version 1.1.0, https://doi.org/10.4232/1.13766

**Abstract:** On behalf of the Konrad Adenauer Foundation's (KAS) Department of Politics and Consultancy, USUMA GmbH in Berlin conducted a representative survey on the topic of "Attitudes towards values and religion of Germans with and without a migration background and foreigners in Germany" between 15 October 2018 and 28 February 2019. The basic population for this was the population aged 18 and over living in private households in Germany. The study was to be conducted for 3 subgroups and to represent each of these subgroups. The three representative sub-samples included: Germans without a migration ... more

**Content:** Country of birth; year of (first) move to the present territory of the Federal Republic of Germany; German nationality; foreign nationality(ies); German nationality by birth, as a resettler/late repatriate without naturalisation, as a resettler/late repatriate with naturalisation or by naturalisation; year of naturalisation; nationality before mo ... more

Topics: 1 Government, political systems and organisations | Political behaviour and attitudes | Religion and values | Migration

Downloads

Datasets

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Questionnaire

Other documents

. ♥. Actions

Bookmark

Cite





# DESIGN CHOICE: Linking Information





## Observational study

- 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

## Key findings

- 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

## DESIGN CHOICE: Links

https://search.gesis.org/research\_data/ZA7757°

Attitudes Towards Values and Religion of Germans With and Without Migration Background and Foreigners in Germany

Neu, Viola; Pokorny, Sabine; Roose, Jochen

Date(s) of Data Collection: 15.10.2018 - 28.02.2019

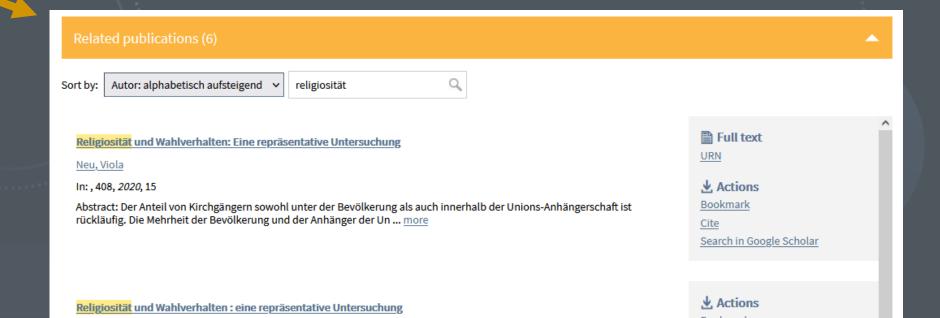
GESIS Data Archive, Cologne. ZA7757 Data file Version 1.1.0, https://doi.org/10.4232/1.13766

Abstract: On behalf of the Konrad Adenauer Foundation's (KAS) Department of Politics and Consultancy, USUMA GmbH in Berlin conducted a representative survey on the topic of "Attitu ... more



Publications (6)

Variables (261)



## DESIGN CHOICE: Links

Variables (261)

Publications (6)

https://search.gesis.org/research\_data/ZA7757

Attitudes Towards Values and Religion of Germans With and Without Migration Background and Foreigners in Germany

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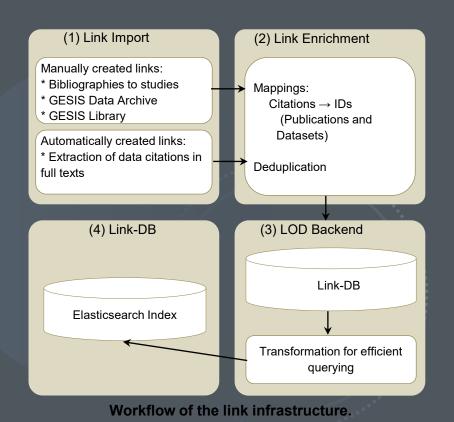
Date(s) of Data Collection: 15.10.2018 - 28.02.2019

GESIS Data Archive, Cologne. ZA7757 Data file Version 1.1.0, https://doi.org/10.4232/1.13766

Abstract: On behalf of the Konrad Adenauer Foundation 's (KAS) Department of Politics and Consultancy, USUMA GmbH in Berlin conducted a representative survey on the topic of "Attitu ... more



## DESIGN CHOICE: Links



Links between information types	Count
Manual Links	49,124
Automatic Links	37,956
Search Links	7,315
Research Data ↔ Variables	557,810

Meet the Experts – 11.04.2024 How knowledge graphs can help you to share research data and information





## Take away message

GESIS Search is about searching and finding social science information at one single entry point. It focuses on social science research data and related information which are interlinked and browsable.

We focus on a user-centered design approach, building GESIS Search and its components on the use cases and needs of users.





# New design choices ahead...





# Digital Behavioral Data

## New Research Opportunities for the Social Sciences

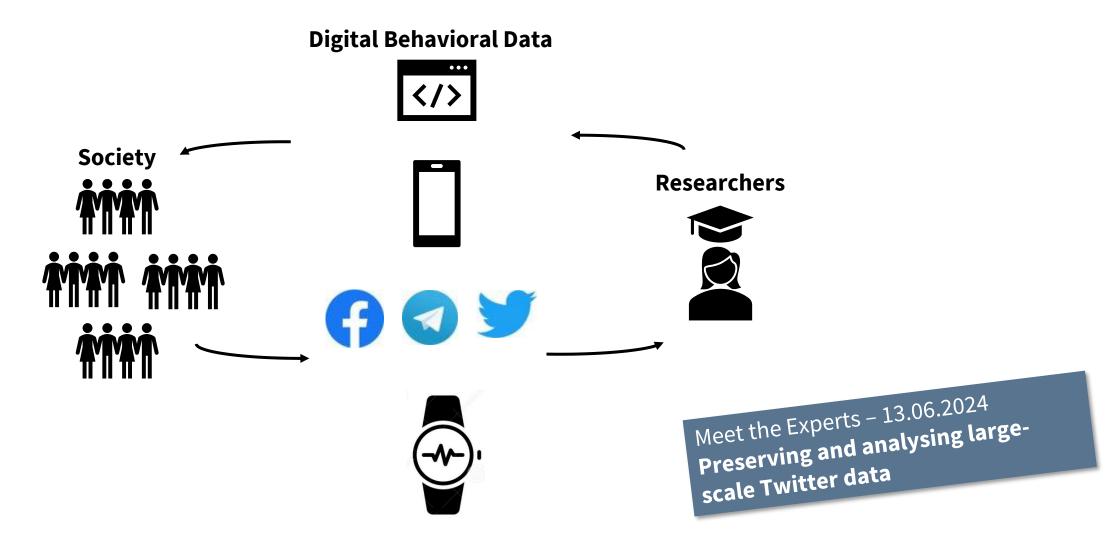
#### What is digital behavioral data?

The concept of 'digital behavioral data' (DBD) encompasses digital observations of human and algorithmic online platforms (like Google, Facebook, or the World Wide Web) or sensors (like smartphones, RFID sensor with concepts of "big data" – with digital behavioral data often sharing their characteristics – or "digital trabehavior. "Digital behavioral data", however, focus on the societally relevant aspects of human and algorith from this.





## Collecting data with digital behavioral data







## Resulting data and information from new data collection

- Study metadata
- Raw data:
  - Visited Webpages
  - Smartphone data, e.g. little questionnaires
  - Social media data, e.g. liked posts, conversations
  - Sensor data, e.g. location, contacts
- Processed data
- Methods

# Implications of Digital Behavioral Data on GESIS Search

- New Metadata
- New categories
- New Data & Materials
- New Links





## Expert contact & GESIS consulting



**Contact**: you can reach the speaker via e-mail:

daniel.hienert@gesis.org

https://www.gesis.org/en/kts

**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 <u>www.gesis.org</u> for more <u>detailed information</u> on available services and terms.





## Upcoming talks

- 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:
- <a href="https://www.gesis.org/en/services/sharing-knowledge/consulting-and-guidelines/meet-the-experts">https://www.gesis.org/en/services/sharing-knowledge/consulting-and-guidelines/meet-the-experts</a>

## **GESIS Search**



