

# Literature Research Practices

## Workshop

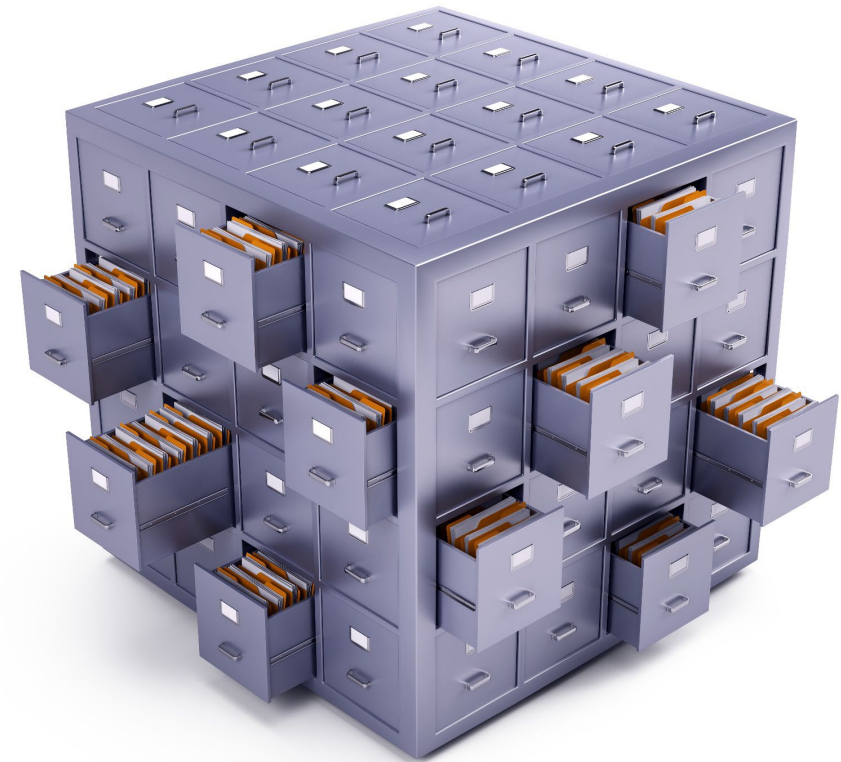
**Bibliothek vonRoll (UB Bern)**

HS24



# Programm

1. Research process and search strategies
2. Finding search terms
3. Formulating a search string
4. AI-Tools for Research
5. Documenting searches
6. Bibliometry



u<sup>b</sup>

# Research process



## Find search terms

- Subject Index(cf. [databases](#) like PsycINFO(APA) und Medline/PubMED (MeSH))
- Keywords (brainstorming, GenAI-tools)
- Reference works (cf. Dorsch, Pschyrembel)
- Subject headings or keywords from already known literature or exploratory searches

## Formulate search string

- Search help
- Boolean Operators AND, OR, NOT
- Phrase “ ”
- Truncation\*
- Wildcards ?
- Limiters

## Choice of database/ search tool

- Books/E-Books
- [swisscovery](#): „Universität und PH Bern (ohne CDI)“
- Journal articles
- [swisscovery](#): „Universität und PH Bern“
- [Databases](#)
- KI-Recherchetools

Citation pearl  
growing/  
Snowballing

## View, retrieve, organise, annotate literature

- **View:** abstracts, subject headings
- **Retrieve:**
- Download online publications (eduroam/VPN)
- Order print publications (Accessibility Unibe/PHBern? CH?)
- **Organise/Annotate:**
- Reference management software

## Citation and bibliography

- Reference management software (cf. University Library Bern free [courses](#))



*u*<sup>b</sup>

# From exploratory to systematic searching

## Preparation

- Identify topic aspects/concepts
- Collect search terms
- Formulate search strings

## Exploratory search

- Choose databases
- Choose limiters
- Assess results

## Adapt search strategy

- Add search terms (for example subject headings)
- Modify search strings
- Modify limiters

## Systematic search

- Perform search(es) with definitive search string limiters
- Identify relevant publications (in-/exclusion criteria)

## Documentation/Export

- Export results
- Deduplicate and screen titles
- Document search strings, limiters and results of search and screening process

*u*<sup>b</sup>

# Preparation

Topic aspects/Concepts – search terms – search strings

## Sample topic:

What components of digital interventions are effective for physical activity promotion?

## Topic aspects/Concepts:

digital intervention

physical activity

promotion

## Finding search terms:

- Note keywords/scientific terms from titles, abstracts, author keywords, reference works
- Note spelling variations
- Note abbreviations for scientific terms
- Decide what search instruments may be helpful to search for compound terms ("search for phrase"), grammatical variants (truncation \*) and spelling variants (wildcards # ?)

# Databases and search engines

Sports	Psychology/Medicine	Interdisciplinary
--------	---------------------	-------------------



- International database
- SPORTDiscus thesaurus
- Further databases on EBSCO (SocIndex, Business Source Ultimate)



- Literature/Search in German



- Biomedical literature from MedLine
- MeSH thesaurus



**AMERICAN  
PSYCHOLOGICAL  
ASSOCIATION**

**PsycINFO®**

- Psychological literature
- APA thesaurus



**Web of Science™**

- Citation pearl searching
- Bibliometric indications



**Scopus**

- Citation pearl searching
- Bibliometric indications



- Citation pearl searching
- Broad coverage (media types and sources/repositories)

# Accessing databases and support

University Library of Bern UB



Research platform

E-Media

**Databases**

E-Journals

E-Books

E-Newspapers

## Databases

database name if known

and / or

database subject (all) ▼

Individual databases:

[Research: Databases - University Library of Bern UB \(unibe.ch\)](https://unibe.ch/research/databases)

- Search for a specific database
- Filter by subject or database type
- Short information about content
- Institutional access link and access information
- Contact person



# Accessing databases and support

Most important subject-specific databases:  
[Research: Subject information - University Library of Bern UB \(unibe.ch\)](https://unibe.ch)

Universitätsbibliothek Bern UB



Rechercheplattform

E-Medien

**Fachgebiete**

Digitale Sammlungen

Sondersammlungen

Hilfe und Tools

## Fachgebiete

### Portale

- Human- und Sozialwissenschaften
- Medizin und Pharmazie
- Naturwissenschaften
- Rechts- und Wirtschaftswissenschaften
- Theologie und Geisteswissenschaften

### Fächer

- Altertumswissenschaften
- Anglistik und Amerikanistik
- Belletristik und Literaturvermittlung
- Bibliothekswesen und Informationswissenschaft
- Biologie

### Psychologie und Psychiatrie

- Rechtswissenschaften
- Romanistik
- Slavistik und Baltistik
- Sozialanthropologie
- Soziologie
- Sportwissenschaft**

[Research: Psychology and psychiatry - University Library of Bern UB \(unibe.ch\)](https://unibe.ch)

Psychology and psychiatry



PsycINFO One of the largest international collections of literary references in the social sciences from more than 100 countries. Video [Recherchieren auf PsycINFO \(in German\)](#)



PSYINDEXplus lit. & AV References with abstracts on psychological literature (with audiovisual media) from German-speaking countries

[Recherchieren auf APA PsycInfo: Videotutorial](#)



PubMed Citations for biomedical literature from MEDLINE, life science journals, and online books



PSYINDEXplus Tests Contains descriptions of psychological and pedagogical test procedures used in German-speaking countries

[Research: Sports science - University Library of Bern UB \(unibe.ch\)](https://unibe.ch)

Sports science



SURF - Sport und Recherche im Fokus Interface to online research in the literature, project and media databases of the Federal Institute for Sport Science in Bonn



SPORTDiscus Full text source for all areas of sports and sports medicine literature



Discover e-journals in your subject area with BrowZine. The best starting point is here: [sport journals](#)



PsycINFO Literature reference for international literature on psychology and fields relevant to psychology. Video [Recherchieren in PsycINFO \(in German\)](#)



Oxford Dictionary of Sports Science and Medicine Comprehensive lexicon on all key subjects in the field of sports science and sports medicine, based on the 2006 printed version





*u*<sup>b</sup>

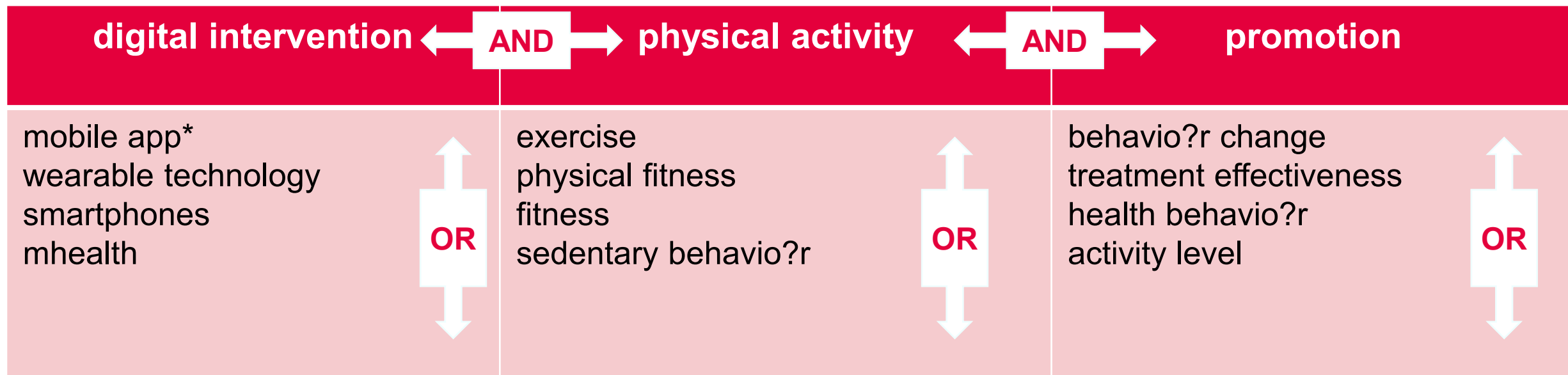
# Finding search terms

## Exercise 1

- a) Brainstorm a list of search terms for your own research topic or the sample topic. Identify the main aspects of the topic and organize the search terms accordingly.
- b) Extend your list of search terms by
  - looking at the keywords/subject headings of a relevant publication for your research topic that you already know;
  - performing exploratory searches in SportDiscus, PsycInfo (Basic or Advanced Search), PubMed and looking at a relevant title
  - asking an GenAI-tool to provide you with further search terms.

$u^b$

# Formulating a search string Using Boolean operators



("digital intervention" OR mobile app\* OR smartphones OR mhealth OR "wearable technology") AND ("physical activity" OR exercise OR "physical fitness" OR fitness OR sedentary behavior?r) AND (promotion OR behavior?r change OR treatment effectiveness OR health behavior?r OR "activity level")

# PICO(S/T)

P

## Patient/Population/Problem

What are the characteristics of the patient or population (demographics, risk factors, pre-existing conditions, etc)?  
What is the condition or disease of interest?

I

## Intervention

What is the intervention under consideration for this patient or population?

C

## Control/Comparison

What is the alternative to the intervention (e.g. placebo, different drug, surgery)?

O

## Outcome

What are the included outcomes (e.g. quality of life, change in clinical status, morbidity, adverse effects, complications)?

S

Setting/  
Study type

T

Timeframe

Cochrane Library. (2024). *Cochrane Library About PICO*.

<https://www.cochranelibrary.com/about-pico>

PICO process. (2024). In *Wikipedia*.

[https://en.wikipedia.org/w/index.php?title=PICO\\_process&oldid=1246486757](https://en.wikipedia.org/w/index.php?title=PICO_process&oldid=1246486757)

$u^b$

# Formulating a search string

PICO process

1. What is the problem/population?

- (lack of) physical activity

2. Which intervention is tested?

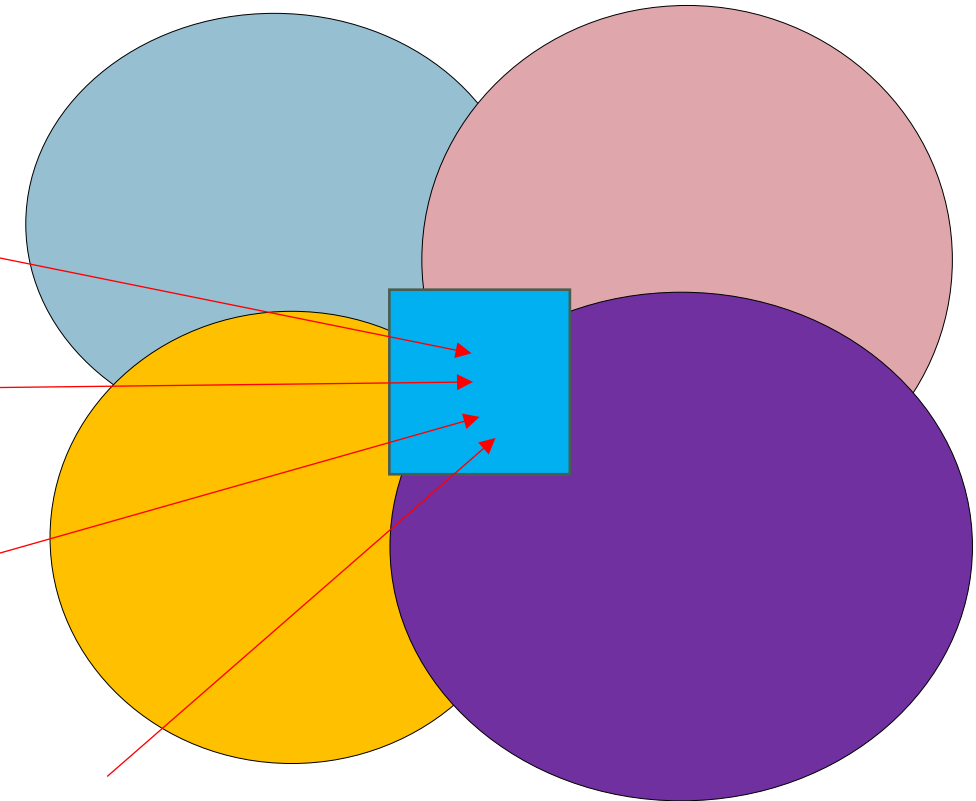
- digital interventions

3. What alternative intervention is tested?

- -

4. What outcome is aimed at/measured?

- promotion of physical activity/increased activity level



*u*<sup>b</sup>

# Criteria for inclusion/exclusion

Define the inclusion/exclusion criteria for the studies you want to consider in your research.

Adapt the search strategies accordingly (search string/limiters).

The criteria are also important for the screening process.

Population	Age, sex, characteristics, health condition
Intervention	Type of intervention
Timeframe	Publication timeframe (for example the last 5-10 years), study duration
Outcome	Study or treatment results
Language/Region	German, English, restricted to certain countries
Publication/Study	Type of study (systematic review, randomised controlled trial, ...)
Setting	Setting characteristics (for example clinical setting, family setting, ...)

*u*<sup>b</sup>

# Formulating a search string

## Exercise 2

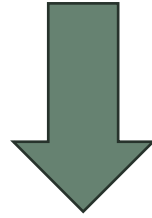
- a) Consider if/to what extent the PICO(S/T) model is helpful to formulate a complex logical search string for your research topic.
- b) Use Boolean operators and possibly wildcards/phrases/truncation to formulate a logical search string out of your list of search terms.
- c) Try out your search string in 2-3 (or more) of the following databases: SportDiscus, Web of Science (search mode “Topic”), Scopus, PsycInfo (Advanced Search), PubMed, SURF (search in German).
- d) Look at the filter options (limiters) in the different databases and how they help you refine your search results in view of your inclusion/exclusion criteria (for example: publication years, method, study type, population, citations, ...)

Consult the help pages of the databases to ascertain which symbols are used for (what kind of) wildcards and what search strategies are recommended!

For example: don't use truncation/phrases/wildcards in PubMed if you want to include related terms.

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# Keywords vs. subject headings

## **Keywords**

Words that occur in titles, abstracts, author keywords, texts, specific metadata fields. Several keywords may identify the same topic/subject.

## **Subject headings/descriptors**

Standardised vocabulary collected/searchable in a thesaurus/index and used to identify the content of a publication (one term per topic/subject). Subject headings are attributed to publications by professionals to allow for better search results.

Include both subject headings and keywords in searches to make sure you find articles with subject headings as well as new articles to which subject headings have not yet been attributed. The use of keywords also allows to find articles on topics for which no subject heading has been defined (yet).

*u*<sup>b</sup>

# Finding subject headings in subject indexes

## Exercise 3

Search for APA subject headings in PsycINFO and for MeSH terms in PubMed. Integrate the subject headings into your search string.

### **PsycINFO**

#### Concept 1

"digital intervention" OR mobile app\* OR smartphones OR mhealth OR "wearable technology" OR exp Digital Interventions/

#### Concept 2

"physical activity" OR exercise OR "physical fitness" OR fitness OR sedentary behavior?r OR exp Physical Activity/

#### Concept 3

promotion OR behavior?r change OR treatment effectiveness OR health behavior?r OR "activity level" OR \*health promotion/

### **PubMed**

#### Concept 1

digital intervention OR mobile apps OR smartphones OR mhealth OR wearable technology OR "Mobile Applications"[Mesh]

#### Concept 2

physical activity OR exercise OR physical fitness OR fitness OR sedentary behavior OR "Exercise"[Mesh]

#### Concept 3

promotion OR behavior change OR treatment effectiveness OR health behavior OR activity level OR "Health Promotion"[Mesh]

*u*<sup>b</sup>

# Searching PsycINFO vs. PubMed

## Cf. search help/advanced search

Search technique	PsycINFO (OVID)	PubMed
<b>Truncation</b> replaces an indefinite number of letters at the beginning or ending of a word stem	dement* or dement\$ finds all possible word endings	dement* finds all possible word endings but deactivates automatic term mapping (ATM)
<b>Wildcards</b> replaces 0 or more letters in a word	randomi?d finds randomized or randomised	organi*ation finds organization or organisation but deactivates automatic term mapping (ATM)
<b>Phrase</b> searches for an exact combination of words	"cognitive therapy" cognitive adj therapy	"cognitive therapy" deactivates automatic term mapping (ATM)
<b>Proximity search</b> finds words within a specified proximity to each other	randomised adj3 trial means the words randomised and trial should be separated by no more than three words	"randomised trial"[tiab:~3] means the words randomised and trial should be separated by no more than three words in the title or abstract
<b>Exploding subject headings</b> includes narrower/more specific terms	exp Clinical Trial/ finds also Controlled Clinical Trial, Randomized Controlled Trial etc.	Clinical Trial [mh] finds also Controlled Clinical Trial, Randomized Controlled Trial etc.

# *u*<sup>b</sup> Important search fields

## PsycINFO

/

Term searched as  
subject heading

dementia/

.ti

Term searched  
in title

dementia.ti

.ab

Term searched  
in abstract

dementia.ab

.ti,ab

Term search in  
title and abstract

dementia.ti,ab

.mp

Term searched in  
most important fields  
like title, abstract,  
subject heading, ...

dementia.mp

.pt

Search for a specific  
publication type

peer-reviewed  
journal.pt

.mh

Term searched as  
MeSH in documents  
with MeSH terms

dementia.mh

.id

Term searched  
in the field key  
concepts

dementia.id

# *u*<sup>b</sup> Search in specific fields

## PsycINFO vs. PubMed

For each search term it is possible to define in which field it will be searched.

### **Example search PsycINFO (advanced search):**

(cognitive behavior therapy.sh. or (cognitive behavio?r therapy or cognitive behavioral therapy).ti,ab.) and (Dementia.sh. or (dementia or demented or alzheimer disease or confusion).ti,ab.) and (depression.sh. or (depression or sadness or unhappiness or melanchol\* or worry).ti,ab.)

Cf. [Ovid Help](#)

### **Example search in PubMed:**

((cognitive behavior therapy [Mh]) OR (cognitive behavior therapy [TiAb] OR cognitive behavioral therapy [TiAb])) AND ((Dementia [Mh]) OR (dementia[TiAb] OR demented[TiAb] OR alzheimer disease[TiAb] OR confusion[TiAb])) AND ((depression[Mh]) OR (depression[TiAb] OR sadness[TiAb] OR unhappiness[TiAb] OR melancholy[TiAb] OR worry[TiAb]))

Cf. [Help PubMed/Search tags](#)

*u*<sup>b</sup>

# Medline

## PubMed vs. Ovid

The database Medline can be searched via both PubMed and Ovid.

Advantages of searching in Ovid:

- Same search syntax can be used as for PsycINFO (but MeSH terms need to be included which are attributed to all articles in Medline)
- Simultaneous search over PsycINFO and Medline is possible
- Results from a search over several databases can be deduplicated in Ovid

Advantages of searching in PubMed:

- Also searches new and old articles in Medline that have not yet been indexed with MeSH terms
- Also searches additional publications that are not included in Medline, such as open access articles from PubMed Central, "ahead of print" citations, manuscripts of NIH-researchers, articles from journals not included in Medline etc. (Cf. [MEDLINE, PubMed, and PMC \(PubMed Central\): How are they different?](#))

*u*<sup>b</sup>

## Experimenting with search strings, search fields, limiters

### Exercise 4

Experiment further with your search strings in the databases of your choice: search over specific fields, try different search modes and limiters, compare the size and quality of the results.



*u<sup>b</sup>*

# AI research tools

Subject to change...



## ChatGPT etc.

Overview of topic and trends, proposition of search terms, formulation of search strings, proposition of databases/repositories, instruction on how to search

## ChatPDF etc.

Query and summarise publications

## Citation-based tools

Research based on a number of known publications or a topic

Ex/import reference management software

## Tools based on semantics

Research based on a research query/topic, possibility to query publications, sort publications by relevance, analyse (positive/negative) citations

Ex/import reference management software

# Connected Papers

Winter Tourism, Climate Change, and Snowmaking in the Swiss Alps: Tourists' Attitudes and Regional Economic Impacts

Prior works Derivative works List view Filters More

Origin paper

Winter Tourism, Climate Change, and Snowmaking in the Swiss Alps: Tourists' Attitudes and Regional Economic Impacts

Marco Pütz, David Gallati, S. Kytzia, H. Elsasser, C. Lardelli, M. Teich, ... 2011

Winter Tourism and Climate Change in the Alps: An Assessment of Resource Consumption, Snow Reliability, and Future Snowmaking...

C. Rixen, M. Teich, C. Lardelli, David Gallati, M. Pohl, Marco Pütz, P. Bebi 2011

The Sensitivity of Austrian Ski Areas to Climate Change

R. Steiger, B. Abegg 2013

The impact of snow scarcity on ski tourism: an analysis of the record warm season 2006/2007 in Tyrol (Austria)

R. Steiger 2011

The impact of climate change on ski season length and snowmaking requirements in Tyrol, Austria

R. Steiger 2010

Does artificial snow production pay under future climate conditions? - A case study for a vulnerable ski area in Austria

A. Damm, Judith Köberl, Franz Prettenhaler 2014

The potential impact of climate change on seasonal snow in New Zealand: part II - industry vulnerability and future snowmaking...

J. Hendrikx, E. Hreinsson 2012

Climate Change Impact Assessment of Ski Tourism in Tyrol

R. Steiger, J. Stötter 2013

Climate change analogue analysis of ski tourism in the northeastern USA

J. Dawson, D. Scott, G. McBoyle 2009

Ski Areas' Competitiveness in the Light of Climate Change: Comparative Analysis in the Eastern Alps

R. Steiger, B. Abegg 2018

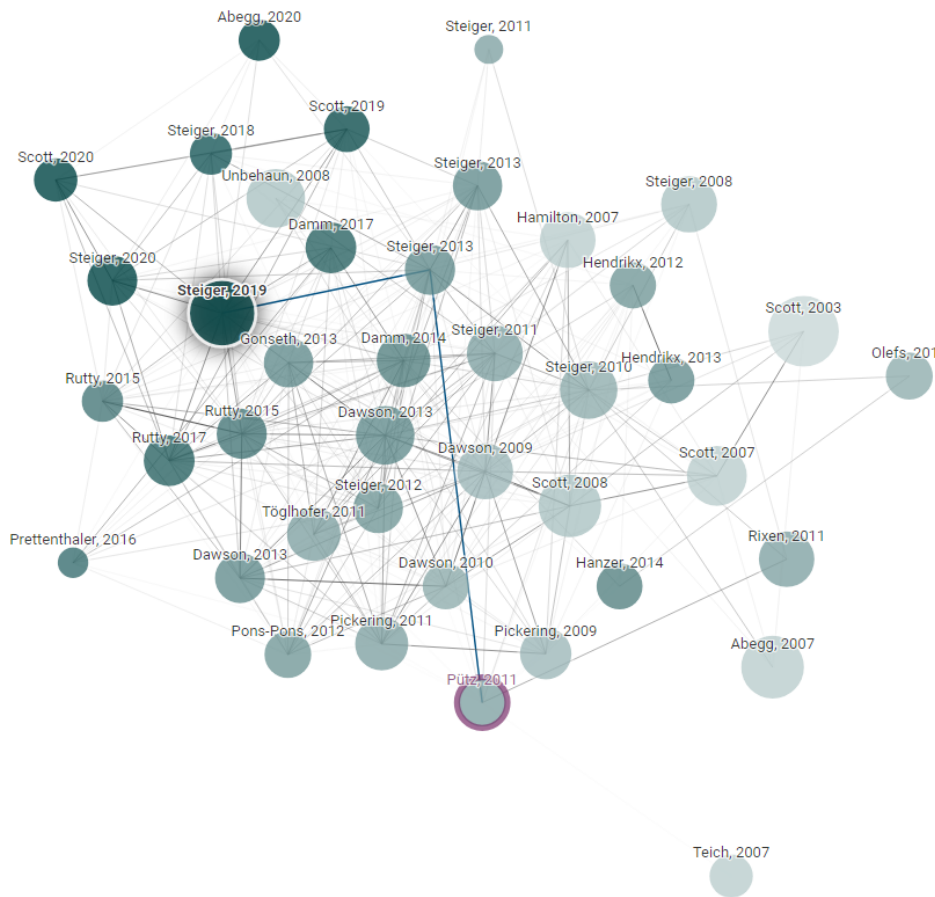
Impacts of snow conditions on tourism demand in Austrian ski areas

Christoph Töglhofer, F. Eigner, Franz Prettenhaler 2011

Managing for climate change in the alpine ski sector

J. Dawson, D. Scott 2013

Impacts of +2 °C global warming on winter tourism demand in Europe



New version ready

## A critical review of climate change risk for ski tourism

R. Steiger + 3 authors C. Aall

2019, Current Issues in Tourism

217 Citations

Open in: PDF DOI

Open graph + Add origin

Ski tourism is a multi-billion dollar international market attracting between 300 and 350 million annual skier visits. With its strong reliance on specific climatic conditions, the ski industry is regarded as the tourism market most directly and immediately affected by climate change. A critical review of the 119 publications that have examined the climate change risk of ski tourism in 27 countries is provided. This growing and increasingly diverse literature has projected decreased reliability of slopes dependent on natural snow, increased snowmaking requirements, shortened and more variable ski seasons, a contraction in the number of operating ski areas, altered competitiveness among and within regional ski markets, and attendant implications for ski tourism employment and values of vacation property real estate values. The extent and timing of these consequences depend on the rate of climate change and the types of adaptive responses by skiers as well as ski tourism destinations and their competitors. The need to understanding differential climate risk grows as investors and financial regulators increasingly require climate risk disclosure at the destination and company scale. Key knowledge gaps to better assist ski tourism destinations to adapt to future climate risk are identified.

## Insight from top 5 papers

Der Tourismus in der Stadt Bern in der Schweiz begann 1970 mit der Initiierung des phänologischen Beobachtungsnetzwerks BernClim durch das Institut für Geographie der Universität Bern [1]. Dieses Netzwerk sammelte saisonale Informationen von Pflanzen, Nebel und Schnee für Anwendungen in der Stadt- und Regionalplanung, landwirtschaftlichen und touristischen Eignung sowie Studien zu den Auswirkungen des Klimawandels [2]. Im Laufe der Zeit hat sich der Tourismus in Bern weiterentwickelt und stand vor Herausforderungen wie dem Klimawandel und der COVID-19-Pandemie [3][4]. Die COVID-19-Pandemie hatte schwerwiegende Auswirkungen auf den Tourismus in der Schweiz und führte aufgrund von Lockdown-Maßnahmen und Reiseverboten zu einem Zusammenbruch des Tourismus [5]. Die Zukunft des Tourismus in Bern und der Schweiz ist ungewiss und hängt von verschiedenen Faktoren ab, darunter den Einstellungen und Entscheidungen der Menschen, der Wirtschaft, politischen Maßnahmen und dem Fortschreiten der Pandemie.

Was this helpful? Ask a follow up

Add columns (3)

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Papers (70)	Insights	Summarized Abstract	My columns
<p>Book Chapter • DOI </p> <p><input type="checkbox"/> <b>Glacier tourism and climate change in Switzerland</b></p> <p>Paul Ladouceur 23 Sep 2022</p> <p>   Ask Copilot</p>	Das bereitgestellte Papier befasst sich mit dem Gletschertourismus und dem Klimawandel in der Schweiz. Es enthält keine Informationen über den Tourismus in der Stadt Bern oder seine Entwicklung im Laufe der Zeit.	<ul style="list-style-type: none"><li>Der Klimawandel wirkt sich auf den Gletschertourismus in der Schweiz aus.</li><li>Der Tourismus der letzten Chance (LCT) entwickelt sich zu einer neuen Tourismusnische.</li></ul>	<p>Try <input type="text"/></p> <p>POPULAR COLUMNS</p> <ul style="list-style-type: none"><li><input type="checkbox"/> TL:DR</li><li><input type="checkbox"/> Conclusions</li><li><input type="checkbox"/> Results</li><li><input type="checkbox"/> Summarized Introduct</li><li><input type="checkbox"/> Methods Used</li><li><input type="checkbox"/> Literature Survey</li><li><input type="checkbox"/> Limitations</li><li><input type="checkbox"/> Contributions</li><li><input type="checkbox"/> Practical Implications</li></ul>
<p>Journal Article • DOI </p> <p><input type="checkbox"/> <b>Swiss Cooperation in the Travel and Tourism Sector: Long-term Relationships and Superior Performance:</b></p> <p>Vu Thi Thao +2 more 01 Jul 2020 - Journal of Travel Research</p> <p>11 Citations    Ask Copilot</p>	Das Papier gibt keine Informationen darüber, wann der Tourismus in der Stadt Bern begann oder wie sich der Tourismus in Bern im Laufe der Zeit entwickelt hat.	<ul style="list-style-type: none"><li>Die Forschung zur Schnittstelle zwischen Verkehr und Tourismus in der Schweiz ist noch nicht entwickelt.</li><li>Die Studie zielt darauf ab, langfristige Beziehungen und herausragende Leistungen im Reise- und Tourismussektor zu untersuchen.</li></ul>	
<p> Open access • Journal Article • DOI </p> <p><input type="checkbox"/> <b>The BernClim plant phenological data set from the Canton of Bern (Switzerland) 1970-2018</b></p> <p>This Rutishauser +18 more 11 Nov 2019 - Earth System Science Data</p> <p>6 Citations    Ask Copilot</p>	In dem bereitgestellten Papier wird nichts über den Beginn des Tourismus in der Stadt Bern oder die Entwicklung des Tourismus in Bern im Laufe der Zeit erwähnt.	<ul style="list-style-type: none"><li>BernClim ist ein pflanzenphänologischer Datensatz von 1970-2018 in der Schweiz.</li><li>Der Datensatz beinhaltet Beobachtungen von Hasel, Löwenzahn, Apfelbaum und Buche.</li></ul>	
<p>Proceedings Article • DOI </p> <p><input type="checkbox"/> <b>Destination brand equity of switzerland tourism as perceived by cantonese tourists in</b></p>	Das Papier gibt keine Informationen darüber, wann der Tourismus in der	<ul style="list-style-type: none"><li>Das Papier konzentriert sich auf</li></ul>	

Copilot

German (de)

Standard High Quality

wer besuchte die Schweiz im 19. Jahrhundert als touristen

3:01 PM

El turismo en Suiza o el advenimiento de un modelo de excelencia (siglos XIX y XX)

Tourists who visited Switzerland in the 19th century included:

- The development of Swiss tourism was based on the intensive exploitation of the mountains, which attracted tourists from other countries or regions who sought to imitate the Swiss model of excellence.
- The construction of mountain railways and the dominance of large-scale hotels played a significant role in attracting tourists to Switzerland.
- The political and symbolic image of Swiss identity, closely associated with the mountains, also contributed to the influx of tourists.
- The rapid diffusion of an image of the Swiss Alps, with symbols such as shepherds, cows, goats, and edelweiss against a backdrop of snowy mountains and lakes, helped attract tourists and create a commercialized and effective marketing campaign.
- The construction and recognition of the founding myths of Swiss identity played a central role in shaping the Swiss tourist space and promoting it abroad.

Note: The provided sources do not specifically mention the names

Were there any unexpected or surprising results reported in these papers? +5 more

Ask a question on:

El turismo en Suiza o el advenimiento de un modelo de excelencia (siglos XIX y XX)

Write your question...

# AI research tools

## Problematic aspects

- Hallucination of generative AI-tools (probable responses instead of existing publications)

can you provide me with 10 academic titles about the following research topic: What components of digital interventions are effective for physical activity promotion?

Here are 10 potential academic titles for your research topic:

1. "Evaluating the Efficacy of Digital Interventions in Promoting Physical Activity: A Systematic Review of Key Components"
2. "The Role of Behavior Change Techniques in Digital Platforms for Physical Activity Enhancement"
3. "Exploring Engagement and Retention Strategies in Digital Interventions for Physical Activity Promotion"
4. "Personalization in Digital Health Interventions: Impact on Physical Activity Outcomes"
5. "Gamification and Incentive Mechanisms in Digital Tools for Increasing Physical Activity"
6. "Mobile Apps and Wearable Technology: Assessing Components that Drive Physical Activity Adoption"
7. "Tailoring Digital Interventions for Physical Activity: Insights from User-Centered Design"
8. "Digital Coaching and Feedback Systems: Enhancing Physical Activity through Interactive Technologies"
9. "The Impact of Social Support Features in Digital Interventions on Physical Activity Behaviors"
10. "Assessing the Effectiveness of Machine Learning in Personalizing Digital Interventions for Physical Activity"

can you provide a doi for each of the 10 papers listed

The titles I provided were hypothetical and generated based on the research topic you shared. They aren't actual existing papers, which means they don't have DOIs (Digital Object Identifiers) yet.

However, if you're looking for real papers with DOIs on this topic, I can guide you on how to find relevant academic papers using databases like Google Scholar, PubMed, or others I mentioned earlier. Searching for terms like "digital interventions for physical activity promotion" or "components of effective digital health interventions" will help you find existing research with DOIs.

If you'd like, I can also search for some real papers on this topic for you! Just let me know.

# AI research tools

## Problematic aspects

- Hallucination of generative AI-tools (probable responses instead of existing publications)
- Necessary familiarity with research in a given field to evaluate search results for relevance and completeness
- Subject- and language-dependent performance of tools
- Lack of transparency concerning (limitations of) sources that are searched
- Lack of transparency concerning the search process (black box)
- Limited free functionalities
- Changing possibilities/functionalities

can you provide me with the references to 10 existing academic articles about the following research topic: What components of digital interventions are effective for physical activity promotion?



2 Websites durchsucht ▾


Here are 10 existing academic references related to your topic on the effectiveness of digital interventions in promoting physical activity, focusing on key components of those interventions:

1. Müller AM, et al. (2016). "Effectiveness of eHealth interventions for the promotion of physical activity in older adults." *BMC Public Health*, 16, 961. DOI:10.1186/s12889-016-3623-2
2. Brickwood KJ, et al. (2019). "Consumer-based wearable activity trackers increase physical activity in adults." *JMIR mHealth uHealth*, 7(4), e11819. DOI:10.2196/11819
3. Krebs P, Duncan DT. (2015). "Health app use among US mobile phone owners: a national survey." *JMIR mHealth uHealth*, 3(4), e101. DOI:10.2196/mhealth.4924
4. DeSantis KK, et al. (2022). "Evaluation of Digital Interventions for Physical Activity Promotion: Scoping Review." *JMIR Public Health and Surveillance*, 8(5), e37820. DOI:10.2196/37820
5. Yang Q, et al. (2020). "Wearable technology and mobile health to support behavioral changes: a systematic review." *JMIR mHealth uHealth*, 8(7), e19162. DOI:10.2196/19162
6. Murray JM, et al. (2017). "Wearable activity technology and intervention effectiveness in the prevention and management of chronic diseases." *Sports Medicine*, 47(9), 1821-1835. DOI:10.1007/s40279-017-0725-5
7. Bort-Roig J, et al. (2014). "Measuring physical activity with smartphone applications and wearable devices." *British Journal of Sports Medicine*, 48(3), 159-161. DOI:10.1136/bjsports-2013-093447
8. Howlett N, et al. (2019). "The effectiveness of goal setting interventions on behavior change: a systematic review and meta-analysis." *Health Psychology Review*, 13(2), 214-230. DOI:10.1080/17437199.2018.1553067
9. Müller AM, Khoo S. (2014). "Non-face-to-face physical activity interventions in older adults." *Health Education Journal*, 73(6), 777-787. DOI:10.1177/0017896913518225
10. Brannan M, et al. (2020). "Systematic review of physical activity and exercise interventions delivered via mobile devices." *American Journal of Preventive Medicine*, 58(5), 674-682. DOI:10.1016/j.amepre.2019.12.009



*u*<sup>b</sup>

# What's to come...

- Integration of AI-tools in existing databases etc.
  - Scopus AI
  - Web of Science Research Assistant (test access until the end of October 2024)
  - ExLibris (Conversational Discovery and Article Summarization)
- Tools/platforms for the entire research/publication process
  - Cf.  Mimir Mentor



*u*<sup>b</sup>

# AI research tools

## Exercise 5

Try out different types of tools to find literature for your research topic. If possible use a personal Wifi access when trying out tools with limited functionalities per user.

- a) Try a citation-based tool based on articles you have already found and compare the search results to the results you have found in the databases.
  
- b) Try a tool based on semantics by entering a short description of your research topic and compare the results you find. Do the results change if you formulate your research query differently (for example reformulated with a GenAI-tool)?



*u*<sup>b</sup>

# Citationchaser

## Exercise 6

Try the tool citationchaser to find references and citations for a corpus of literature on the basis of identifiers like DOI, PMID, etc.

Test the tool based on a single publication of interest or insert a list of identifiers (for example exported from a citation reference management software via a .csv-file).

# Systematic research Documentation

The following information should be documented:

1. Database used
2. Exact search string and relevant information (search mode, search fields, number of hits, date)
3. Limiters used
4. Number of relevant titles after applying in/exclusion criteria and screening abstracts
5. Number of titles considered for study (download, read, reference)

Database	Search String	Limiters	Relevant titles	Titles considered
Web of Science Core Collection	Search mode: Topic (Searches title, abstract, keyword plus, and author keywords)  ("digital intervention" OR mobile app* OR smartphones OR mhealth OR "wearable technology") AND ("physical activity" OR exercise OR "physical fitness" OR fitness OR sedentary behavior) AND (promotion OR behavior change OR treatment effectiveness OR health behavior OR "activity level")  1474 titles (23.10.2024)	Review article	293 titles	?? titles

# Sample research documentation

## Supplementary Resource 1: Search strategies used on main electronic databases

MEDLINE, EMBASE AND PSYCINFO:	
#1.	Exp Dementia
#2.	dement* or alzheimer* or frontotemporal degenerat* or cerebral autosomal recessive arteriopathy or cadasil or carasil or huntington* or korsakoff* or binswanger* or creutzfeld jacob* or creutzfeld jakob or hiv associated neurocognitive disorder* or hiv-associated neurocognitive disorder* or kløver-bucy* or lewy body or pick disease or picks disease or pick's disease or primary progressive aphasia or sundown syndrome or sundowning or cognitively impaired or cognitive impairment
#3.	1 or 2
#4.	Exp Cognitive therapy
#5.	Exp Behavior therapy
#6.	cbt or cognitive behav* or cognitive-behav* or cognitive therap* or behav* therap* or cognitive training or behav* training or cognitive intervention or counsel* or psychosocial intervention or psychosocial therap* or psychosocial support or skills therap* or psychotherap* or support group
#7.	4 or 5 or 6
#8.	carer* or caregiv* or care-giv* or relative or famil* or friend or spouse-caregiver or informal care*
#9.	Exp Depression
#10.	stress or anxi* or psychological morbidit*
#11.	9 or 10
#12.	"3 and 7 and 8 and 11"

Hopkinson, M, Reavell, J, Lane, D & Mallikarjun, P 2019, 'Cognitive behavioural therapy for depression, anxiety and stress in caregivers of dementia patients: a systematic review and meta-analysis', *The Gerontologist*, vol. 59, no. 4, pp. e343–e362. <https://doi.org/10.1093/geront/gnx217>

*u*<sup>b</sup>

# Systematic research documentation

## PRISMA

**PRISMA** (Preferred Reporting Items for Systematic reviews and Meta-Analyses)

**Aim:** transparency and reproducibility of research

**PRISMA 2020 statement:** Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D. et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *British Medical Journal*, 372, n71.:[The PRISMA 2020 statement: an updated guideline for reporting systematic reviews | The BMJ](https://www.bmj.com/lookup/doi/10.1136/bmj.n71)

**Flow Diagramm:** <https://www.prisma-statement.org/prisma-2020-flow-diagram>

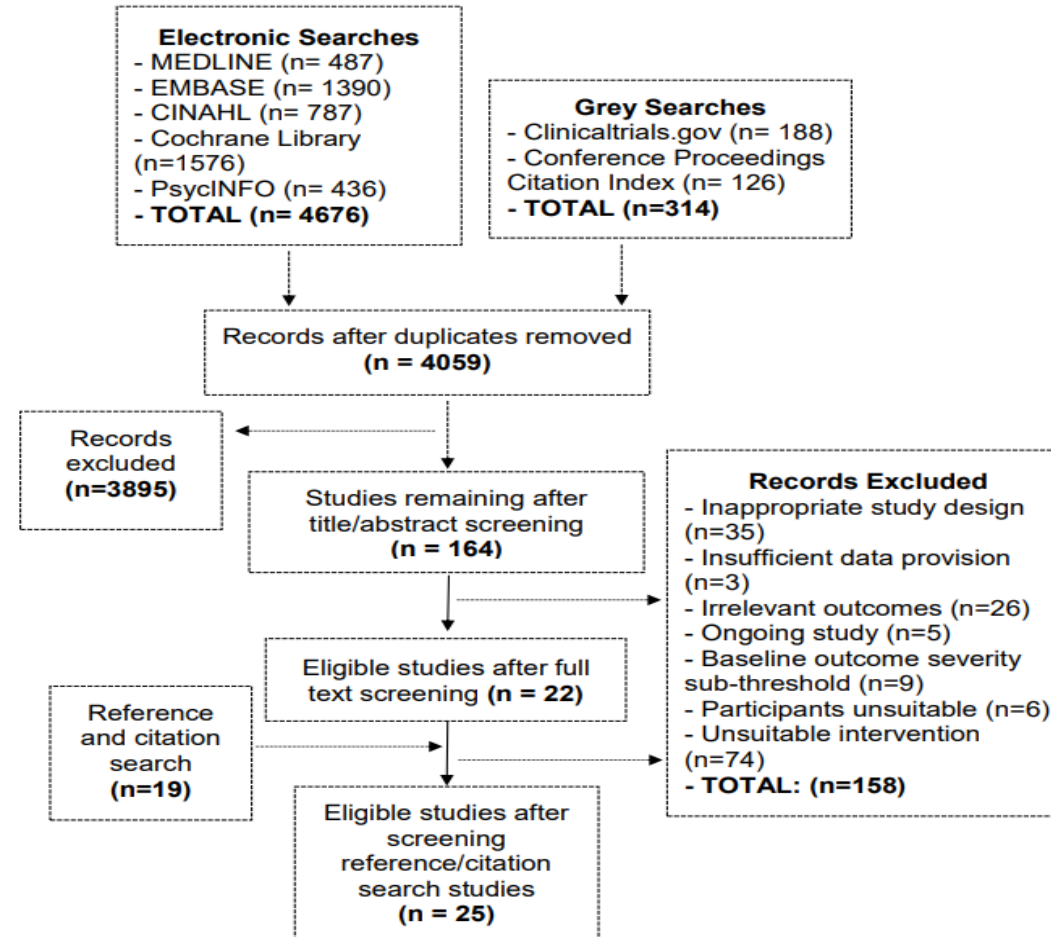
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.

**Checklist:** <https://www.prisma-statement.org/prisma-2020-checklist>

This means: document all search strings used in database searches in the appendix (for example as they appear in the search history in PubMed, Web of Science etc.)

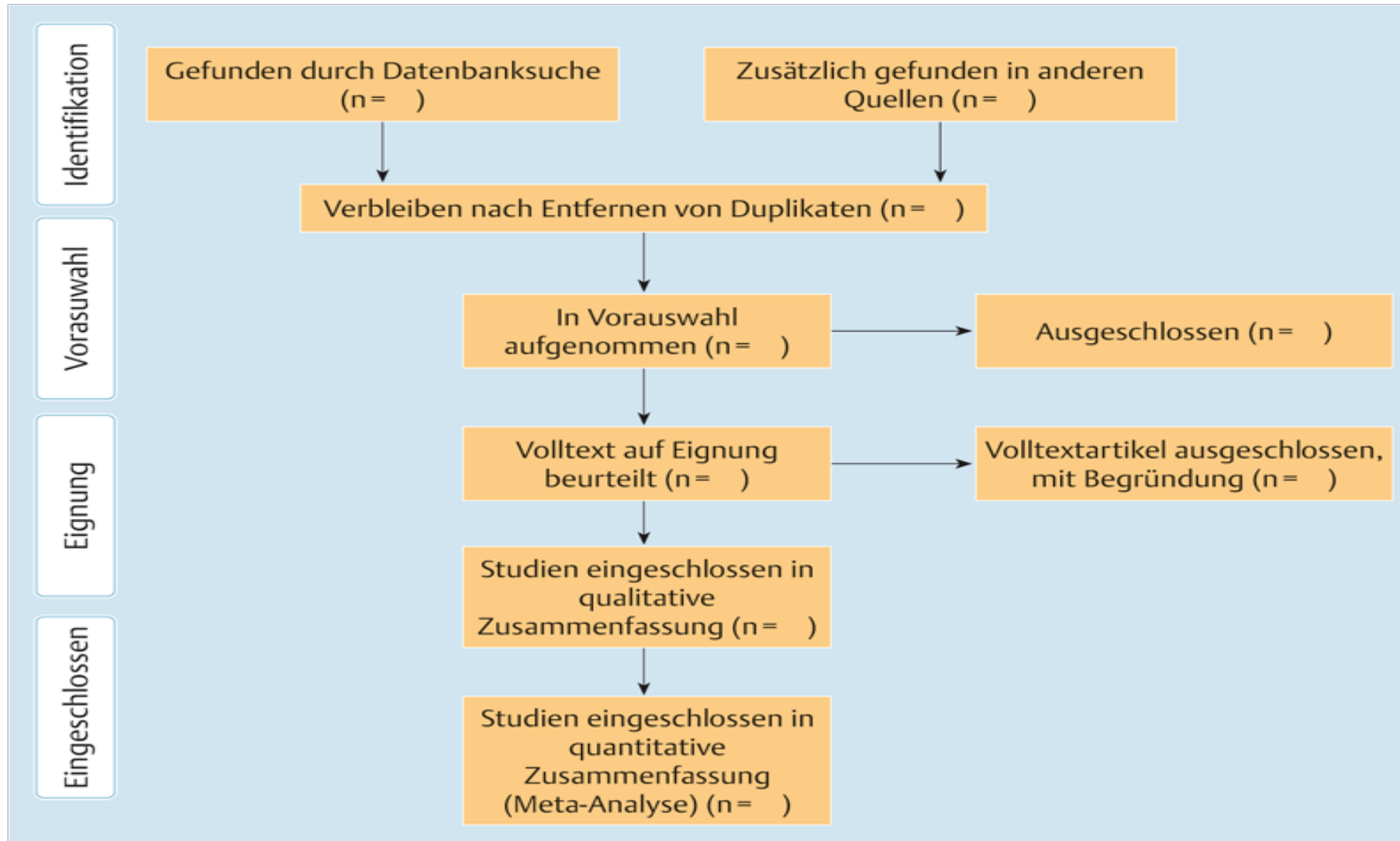
# Sample PRISMA flow diagram

Figure 1: PRISMA flow diagram demonstrating the identification, screening and eligibility assessments of studies preceding review inclusion



Hopkinson, M, Reavell, J, Lane, D & Mallikarjun, P 2019, 'Cognitive behavioural therapy for depression, anxiety and stress in caregivers of dementia patients: a systematic review and meta-analysis', *The Gerontologist*, vol. 59, no. 4, pp. e343–e362. <https://doi.org/10.1093/geront/gnx217>

# Sample flow diagram research documentation



# $u^b$ Bibliometric indications

## H-Index

### Hirsch Index (after J.E. Hirsch)

Cf. Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences*, 102(46), 16569–16572. <https://doi.org/10.1073/pnas.0507655102>

- Attempt to measure the output of a researcher by taking into account both the number of publications and the number of citations per publication (favours researchers with a longer career)
- H-index of 10 means 10 publications cited at least 10 times each
- Variant H-indices can be found in Web of Science, Scopus and GoogleScholar

Publikation 1	12 Zitationen
Publikation 2	8 Zitationen
Publikation 3	6 Zitationen
Publikation 4	4 Zitationen
Publikation 5	4 Zitationen
Publikation 6	1 Zitationen
Publikation 7	0 Zitationen

→ h = 4

Table 1. H-index according to WoS, Scopus and Google Scholar for highly cited Israeli researchers for 1996–2006

Researcher	Category	WoS	Scopus	Google Scholar
Alexander, Gideon	Physics	32	30	20
Alon, Noga	Mathematics, Computer Science	14	17	27
Aumann, Robert J.	Mathematics	8	6	11
Aurbach, Doron	Materials Science	29	29	19
Beeri, Catriel	Computer Science	3	3	8
Chet, Ilan	Plant & Animal Science	21	21	20
Ciechanover, Aaron	Biology & Biochemistry	33	34	30
Cohen, Irun R.	Immunology	29	32	26
Dagan, Gedeon	Engineering, Ecology/Environment	13	14	12
Dekel, Avishai	Space Sciences	25	25	24
Dolev, Daniel	Computer Science	5	7	18
Duchovni, Ehud	Physics	32	29	15
Geiger, Benjamin	Molecular Biology & Genetics	34	33	31
Gohberg, Israel	Mathematics	8	8	11
Goldreich, Oded	Computer Science	12	14	32
Harel, David	Computer Science	9	10	22
Hershko, Avram	Biology & Biochemistry	21	21	21
Hochberg, Yosef	Mathematics	4	4	7
Jortner, Joshua	Chemistry	26	26	21
Kanner, Joseph	Agricultural Sciences	9	9	6
Kerem, Batsheva	Molecular Biology & Genetics	20	19	18
Kotler, Burt P.	Ecology/Environment	10	10	9
Leviatan, Yehuda	Computer Science	6	5	5
Lubotzky, Alex	Mathematics	5	5	10
Mechoulam, Raphael	Pharmacology	28	29	26

# Bibliometric indications

## Journal Impact Factor (Web of Science/Clarivate)

- Indicates the number of citations per article in a journal over a two-year period
- Variant without self-citations

## Journal Citation Report (Web of Science/Clarivate)

- Yearly report that publishes all the impact factors of a journal

## CiteScore (Scopus)

- Indicates the number of citations per article in a journal over a four-year period

CiteScore 2023 

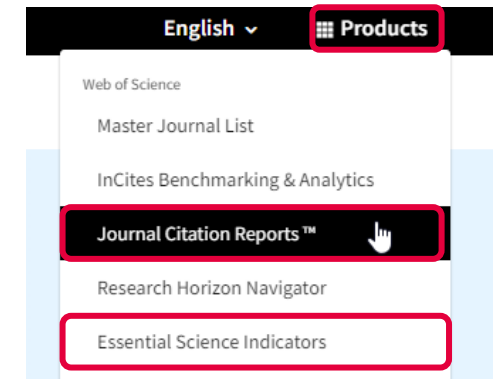
$$6.1 = \frac{1'605 \text{ Citations } 2020 - 2023}{265 \text{ Documents } 2020 - 2023}$$

Calculated on 05 May, 2024

## Calculation

Journal Impact Factor™ is calculated using the following metrics:

$$\frac{\text{Citations in 2023 to items published in 2021 (201) + 2022 (165)}}{\text{Number of citable items in 2021 (75) + 2022 (101)}} = \frac{366}{176} = 2.1$$



Scopus

Search Lists Sources

## Sources

Title  Enter title

Find sources

CiteScore 2023 has been released. [View CiteScore methodology >](#)



$u^b$

# Altmetric (alternative metrics)



Alternative method to measure and track academic output. Cf. <https://www.altmetric.com/>

Aim to: "Track meaningful engagement with research as it is shared, mentioned, reviewed, and read online."

Visualisation of impact through the altmetric donut:

Colours indicate sources and amount of impact.

Cf. <https://www.altmetric.com/about-our-data/the-donut-and-score/>

- |                                 |                               |
|---------------------------------|-------------------------------|
| ● Policy documents              | ● Google+                     |
| ● News                          | ● LinkedIn                    |
| ● Blogs                         | ● Reddit                      |
| ● Twitter                       | ● Research highlight platform |
| ● Post-publication peer-reviews | ● Q&A (Stack Overflow)        |
| ● Facebook                      | ● Youtube                     |
| ● Sina Weibo                    | ● Pinterest                   |
| ● Syllabi                       | ● Patents                     |
| ● Wikipedia                     |                               |



*u*<sup>b</sup>

# Altmetric

## Advantages for researchers

- ✓ Can be applied to publications, researchers, institutions.
- ✓ Impact shows more immediately than via citations.
- ✓ Broader view of research impact and distribution.
- ✓ Provides more visibility than citations only.
- ✓ Demonstrates research impact beyond academia.
- ✓ Helps identifying potential research partners.

# *u*<sup>b</sup> Bibliometric indications

## Criticism

- Journal/Author metrics cannot indicate the quality of a specific publication.
- Journal/Author metrics do not compare across disciplines.
- Self-citations influence metrics.
- Metrics vary from one source to another (depend on the corpus that is analysed).
- Metrics give information about past, not potential future performance.
- The data on which metrics are based is not transparent and accessible to all (metrics are calculated by big companies/publishers).

---

Those who provide the data should not develop and own the metrics

At Digital Science, we see ourselves as a citizen of the research ecosystem. And that means we stand firmly behind the principles which matter to that community; for example, we are signatories of the DORA declaration, which calls for improvements to scientific research evaluation.

However, we strongly believe it is not our place as a data provider to develop or own the community's metrics.

[Read more](#)

---

The research community should develop and own the indicators

Dimensions and the data it contains is available at no cost to the scientometric research community. Members are encouraged to draw on the data to develop the next generation of indicators. For many years, there has been frustration with the metrics on offer – now, with such a broad range of connected data freely available, it is time to remedy that. Together we can do better!

---

Moving beyond citations to deliver a broader picture of impact

Only a few decades ago, metadata powered a revolution in citation network analysis.

Today, technological advances allow us to create increasingly complex analysis and connections. For example, Dimensions is the only database that links publications and citations with grants, patents, clinical trials, datasets, and policy papers to deliver a more holistic view of the research landscape.

[Why did we build Dimensions | Dimensions](#)

*u*<sup>b</sup>

# Bibliometric indications

## Exercise 7

Finde the following article in Scopus, Web of Science, Dimensions (if you have registered for Dimensions) and on Springer Link (via the DOI):

Figueroa, C. A., Gomez-Pathak, L., Khan, I., Williams, J. J., Lyles, C. R., & Aguilera, A. (2024). Ratings and experiences in using a mobile application to increase physical activity among university students: Implications for future design. *Universal Access in the Information Society*, 23(2), 821–830. Scopus. <https://doi.org/10.1007/s10209-022-00962-z>

Look at the bibliometric indications for the article, the journal and the authors. What indications do you find helpful and why (not)?



# Questions? — Contact



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[Portal Human-  
und Sozial-  
wissenschaften](#)

