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Missione 4  
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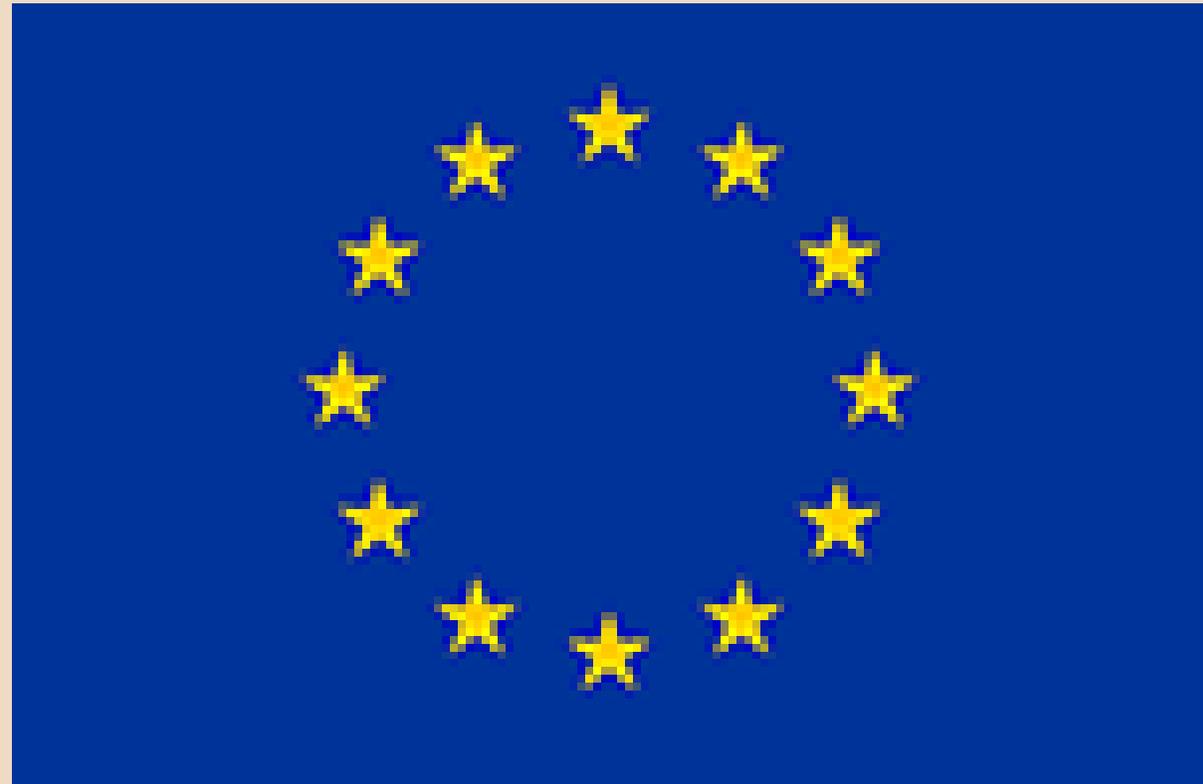
# What is a systematic review?

## The UNVEIL Project

Prof. Selena Grimaldi- University of Macerata

13 December 2023

PhD Programme Global Studies, Institutions, Rights, Democracy





## Systematic Literature Review (SLR)

- is a research methodology to collect, identify, and critically analyze the available research studies (e.g. articles, conference proceedings, books, dissertations) through a systematic procedure.
- A SLR “attempts to collate all relevant evidences that fits pre-specified eligibility criteria to answer a specific research question. It uses explicit, systematic methods to minimize bias in the identification, selection, synthesis, and summary of studies” (Mohler et al., 2015)
- The goal is to review critical points of current knowledge on a topic about research questions to suggest areas for further examination (Carrera-Rivera et al., 2022).



## Systematic Review and Meta-analysis

- Systematic review (SLR) and meta-analysis (M-A) are two terms that sometimes are used interchangeably. Each term refers to research about research, but there are important differences!
- A SLR is a piece of work that asks a research question and then answers it by summarising the evidence that meets a set of pre-specified criteria.
- Some systematic reviews present their results using meta-analysis (M-A), a statistical method that combines the results of several studies to generate an average result. Meta-analysis adds value because it can produce a more precise estimate of the effects of certain independent variables than those derived from considering each study individually.



## What does systematic actually mean?

- systematic means that the methods used to search for and analyse the data are
- **transparent**,
- **reproducible** and
- **defined before** searching begins.
- This is what differentiates a systematic review from a *descriptive review* that might be based on, for example, a subset of the literature that the author is familiar with. Systematic reviews is more rigorous to minimise the bias that would result from cherry-picking studies in a non-systematic way.

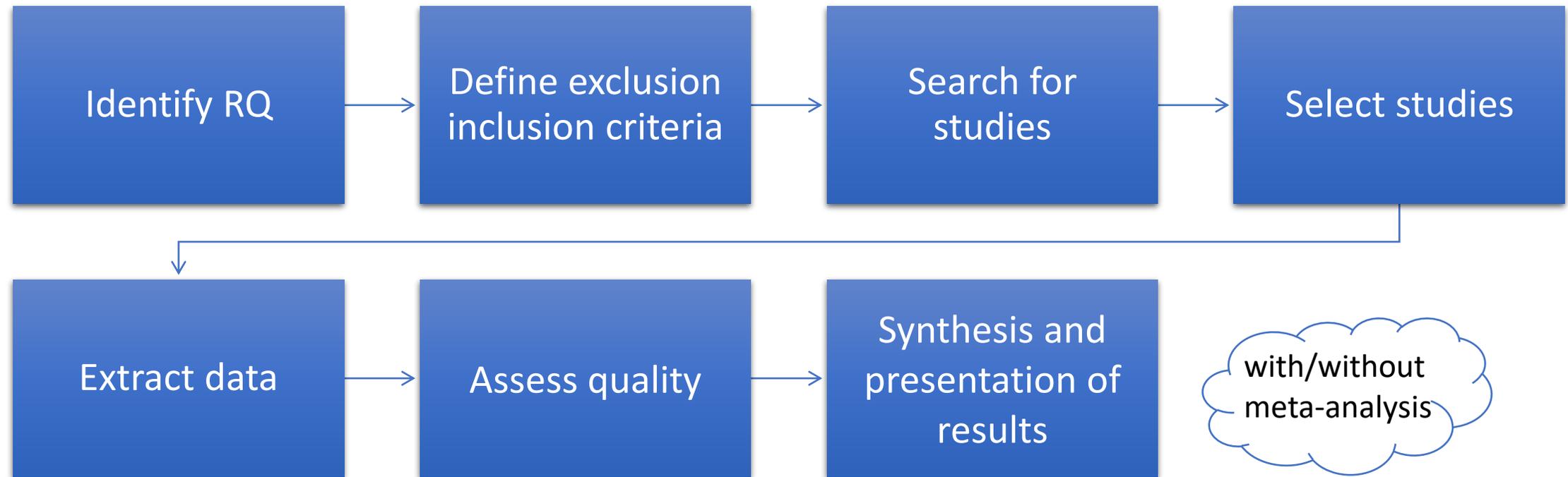


## The process

- A SLR starts with a research question and a protocol or a research plan.
- A review team searches for studies to answer the question using a highly sensitive search strategy.
- The retrieved studies are then screened for eligibility using the inclusion and exclusion criteria.
- Next, the reviewers extract the relevant data and assess the quality of the included studies.
- Finally, the review team synthesises the extracted study data (perhaps using meta-analysis) and presents the results.



## The workflow of each single phase



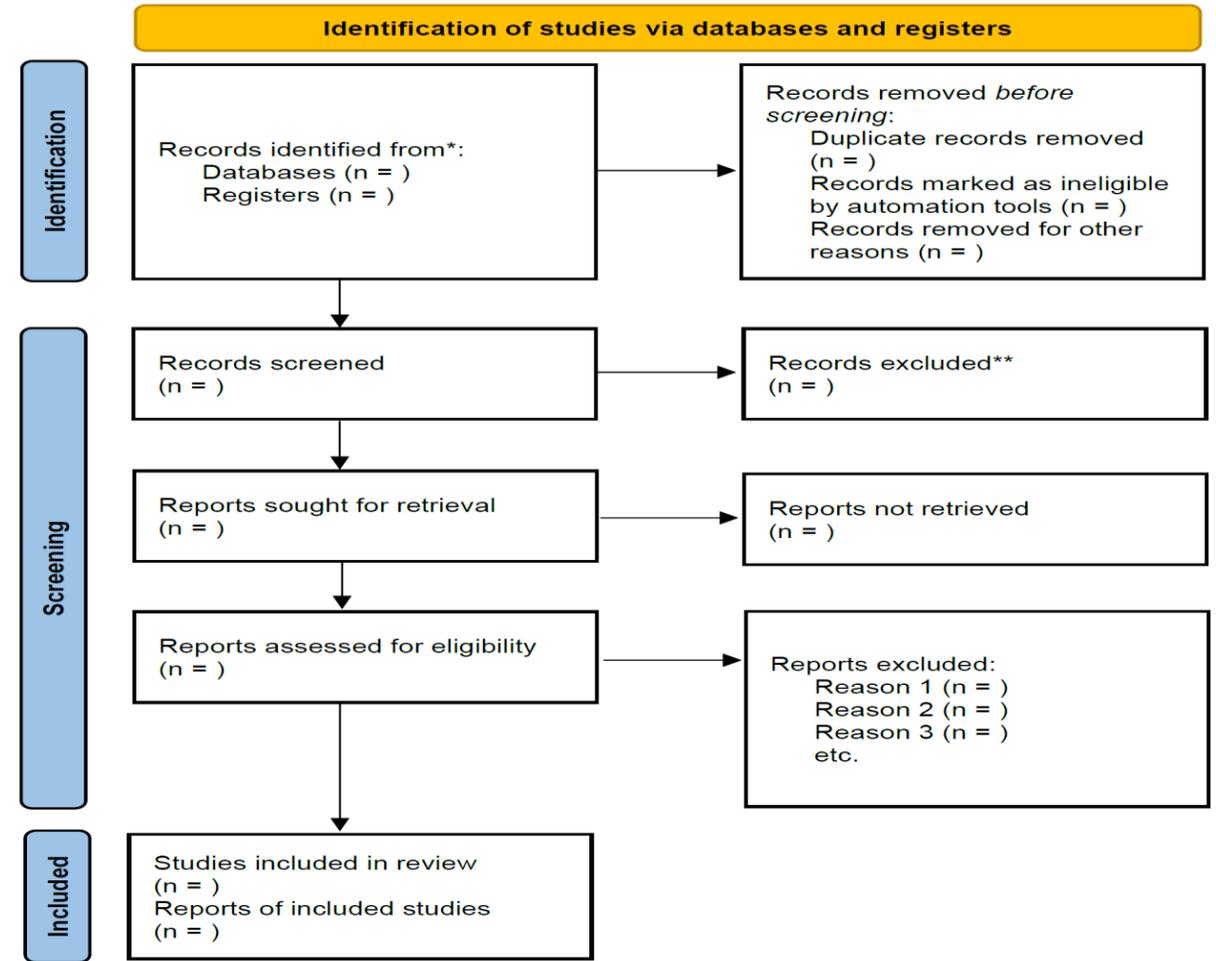


# The PRISMA protocol

The Prisma Protocol was developed for systematic reviews in the BIO MED sector.

But recently such approach has been adopted by scholars of other scientific sectors (i.e. Terlizzi, 2021)

- <http://www.prisma-statement.org/>





## The Prisma checklist

- The Prisma approach suggests **27-item checklist** intended to facilitate the preparation and reporting of a robust protocol for the systematic review.
- Such check list includes
- items related to **methods** e.g., eligibility criteria, information sources (database)
- items related to **results** e.g., risk of bias in studies; syntetize the results of single studies
- items related to **discussion** e.g. Implications of the results for practice, policy, and future research.



## Meta-Analysis

- is a “statistical techniques to combine and summarize the results of multiple studies; they may or may not be contained within a systematic review” (Mohler et al., 2015)
- meta-analysis are “reviews that include a statistical summary of the included studies” (Petticrew & Roberts, 2006)



## What does meta-analysis do?

- Meta-analysis produces a more precise estimate of the effect of the variables investigated.
- There are several types of effect size and the most suitable type is chosen according to the type of outcomes and interventions under investigation.
- Typical effect sizes in systematic reviews are the **odds ratio, the risk ratio, the weighted mean difference and the standardized mean difference etc.**

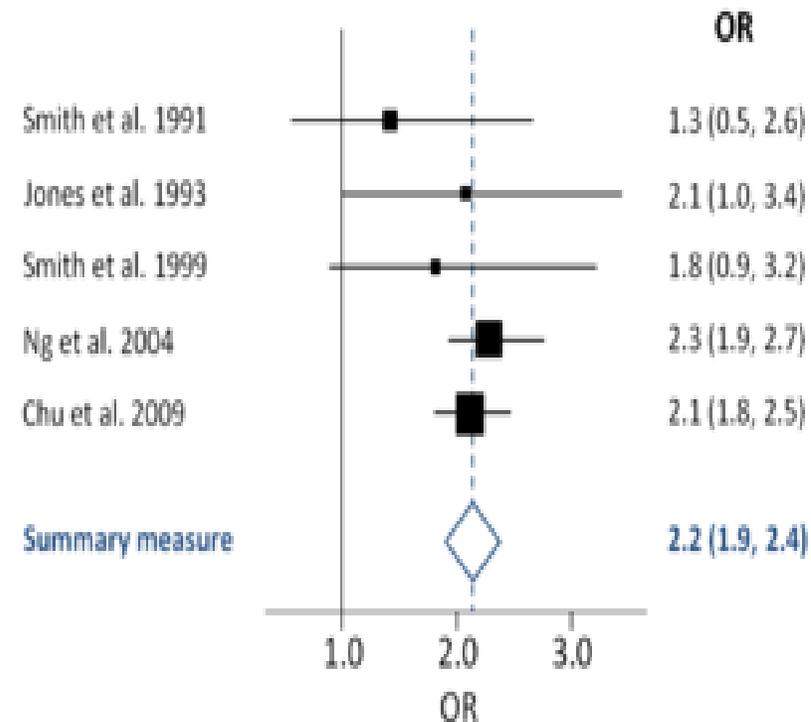


## The results of M-A

are displayed using a **forest plot** like that on the left side.

These techniques are used to explore a factor (e.g., the age of the study participant) that might influence the relationship between the treatment and the intervention or between dependent and independent variables

Such techniques should be described and justified before looking at the data, ideally at the research plan or protocol stage, to avoid introducing bias.





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## Systematic Reviews does not always use Meta-analysis

- Meta-analysis can improve the precision of an effect estimate.
- But it can also be misleading if it is performed with data that are not sufficiently similar, or with data whose methodological quality is poor (for example, because the study participants were not properly randomized).
- So it's not always appropriate to use meta-analysis and many systematic reviews do not include them.



## Other ways to synthesise results of SLR

- Systematic reviews combine study data in a number of ways to reach an overall understanding of the evidence. Meta-analysis is a type of statistical synthesis. **Narrative synthesis** combines the findings of multiple studies using words.
- Narrative synthesis doesn't just describe the included studies: it also seeks to explain the gathered evidence, for example by looking at similarities and differences between the study findings and by exploring possible reasons for those similarities and differences in a systematic way.
- **Narrative synthesis** should not be confused with *narrative review*, which is a term sometimes used for a non-systematic review of the literature where there is no systematic attempt to address issues of bias.



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## What do we take home?

- There are many types of systematic review. What they all have in common is the use of **transparent and reproducible methods that are defined before the search begins.**
- The most appropriate way to conduct a SLR is developing a protocol such as that of PRISMA approach which shows how identifying, screening and including studies and how reporting methodological choices and the results.
- There is no 'best' way to synthesize systematic review evidence, and the most suitable approach will depend on factors such as the nature of the review question and the type of outcomes of interest.



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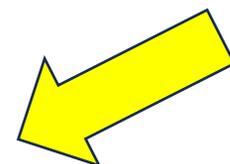
## The UNVEIL project: Understanding Vulnerability to Expand Insight on Local units

- The purpose of the project is to conceptualize **vulnerability** and measure it to provide policy makers with the necessary knowledge to implement appropriate strategies with an “understand-to-act” approach.
- The most recent (financial, migratory, pandemic) crises have exposed rooted patterns of inequalities across territories, which have unveiled their different levels of **vulnerability** and, consequently, their different capacity to resist and react (degree of **resilience**).
- However, the territories that are called upon to face crises are not just the nation-states or supranational regions like the EU. Rather all territorial levels, including **local units**, are required to be equipped with adequate tools and strategies to cope with crises.
- To address vulnerability, policymakers must be aware of its multidimensionality, which accounts for 3 main dimensions: **the Environmental; the Socio-economic and the Political-Institutional** ones.



## UNVEIL project

WE ARE HERE



### WP1: Theory and concepts development

#### Dimensions of vulnerability

Environmental

Socio-economic

Political-Institutional

#### WP2: Index development and mapping

- Development of ESPIV Index
- Large-N study on Italy's municipalities from 2010 onwards
- Mapping of Italy's municipality on the ESPIV Index
- Hypotheses testing (relationships between dimensions of vulnerability; variation over time of the ESPIV Index)

#### WP3: Case-study analysis

- Selection of 12 municipalities based on scoring on the ESPIV Index and macro-areas (North, Centre, South/islands)
- Case-study analyses
- Analysis of relevant examples of policy interventions

Project's outcome (Understand-to-Act):  
Advice to policy makers for effective policy interventions

Four actors (EU, States, regions, Local Units)  
Three strategies: Empower, Reform, Fund



## Our Protocol

- We decided to focus on such 3 dimensions in the realm of Social Science and Humanities to conduct our SLR.
- Our protocol is based on PRISMA protocol and it is divided in 4 phases:
  1. PLANNING (Identification in Prisma)
  2. CONDUCTING and REFINING (Screening, Included in Prisma)
  3. EXTRACTION OF DATA and Qualitative assessment by full reading all papers
  4. DISPLAYING RESULTS



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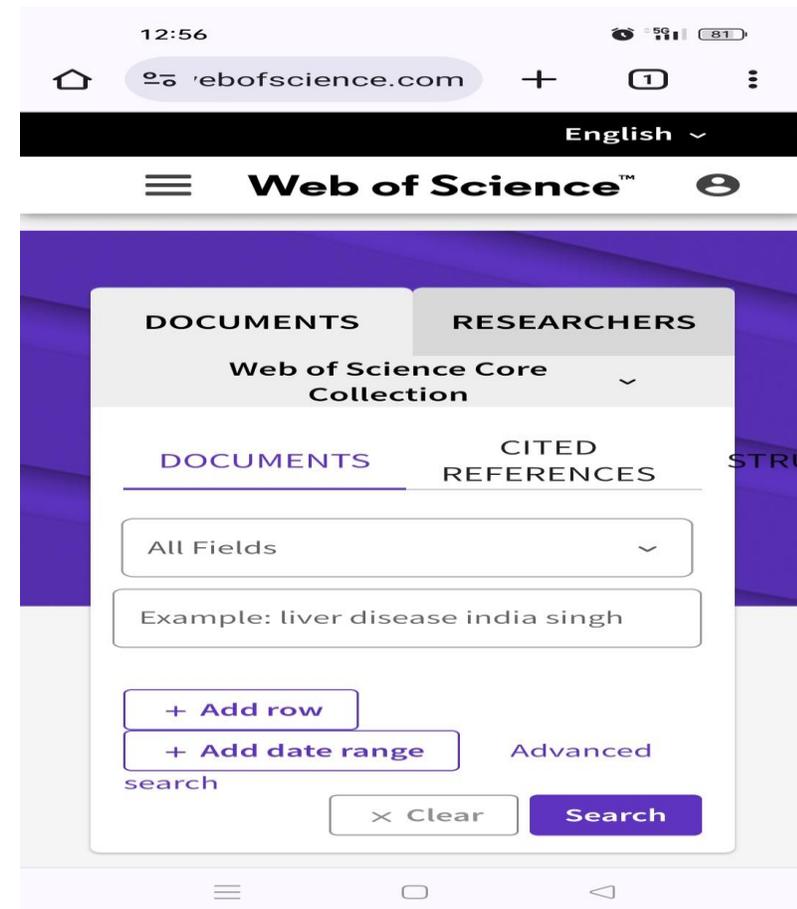
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## Planning: Step 1 Defining RQs

- What does **territorial vulnerability or resilience** mean in three core dimensions (Environmental, Socio Economic and Institutional ones)? Namely how, when and to what extent does environmental/socio-economic/political-institutional vulnerability and/or resilience imply a clear link between territory and human beings?
- In particular: Is vulnerability or resilience associated with a specific **territorial level**?

## Planning: Step 2 Select Digital Library Sources

- Both **Scopus** and **WOS** are suitable for conducting SLR as they comply with essential requirements in terms of precision, recall, and reproducibility (Gusenbauer & Haddaway, 2019).
- Finally, we rely on WOS because both datasets are similar and WOS is larger and in this way we avoid the problems of duplicates.





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## How to access Wos

- Through the Unimc login dashboard > Ianus Electronic Resources, using your university credentials
- <https://login.ianus.unimc.it/menu>,
- or through the “Cerca la banca dati” (=Search the Database service) @
- <https://biblioteche.unimc.it/it/cataloghi-e-risorse/cerca-la-banca-dati/banche-dati-elenco-alfabetico>
- Or directly on the Web of Science site through the Institutional > Italian Higher Education > Idem Garr login by using one's institutional credentials.



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## Planning: Step 3 Define inclusion and exclusion criteria:

Criteria	Inclusion	Exclusion
Period	2008-2024	Prior 2008
Language	English	All other Languages
Type of Literature	Academic only	Grey Lit. (Reports, policy literature, workingpapers, newsletters, government documents, speeches)
Type of Source	Articles from Journals	Conference papers and Book chapters
Impact of Source	Articles with Social Science Citation Index (SSCI)	Articles without SSCI
Accessibility	Accessible	Not accessible



## Conducting; Step 1 Building Library search strings (Search & Select)

- 2 attempts
  - 1) First we developed a preliminary search in WOS (Web of Science) to check the weight of each dimension according to our conceptualization of vulnerability. Thus, we run our query by taking into account all discipline sectors by searching on abstracts and keywords. We avoid titles because words as vulnerability or resilience can be used in a misleading way as “sexy words” but then there is no clearcut evidence that they are actually addressed by the paper.
  - 2) Then we focus only on such sectors clearly connected with our three Dimensions in 4 Social Science and Humanity sectors to conduct a proper SLR. Hence, we focus on the following sectors: SH1; SH2; SH3; SH7.



## Our Final Library search string

- ((AB=(vulnerab\* OR resilien\*)) AND AB=(territor\* OR geograph\* OR municipal\* OR local\* OR country OR countries OR county OR counties OR provinc\* OR region\* OR state OR nation\* OR feder\* OR district\*)) AND ((KP=(vulnerab\* OR resilien\*)) AND KP=(territor\* OR geograph\* OR municipal\* OR local\* OR country OR countries OR county OR counties OR provinc\* OR region\* OR state OR nation\* OR feder\* OR district\*)) AND ((LA=English)) AND PY=(2008-2024)
- "Search all papers that have vulnerability/resilience associated with territoriality terms BOTH in the abstract AND in Keyword Plus" (only English texts in the last 15 years).
- We exclude titles because they might be misleading
- → **1, 476 papers** → only articles and early access: **1,365**



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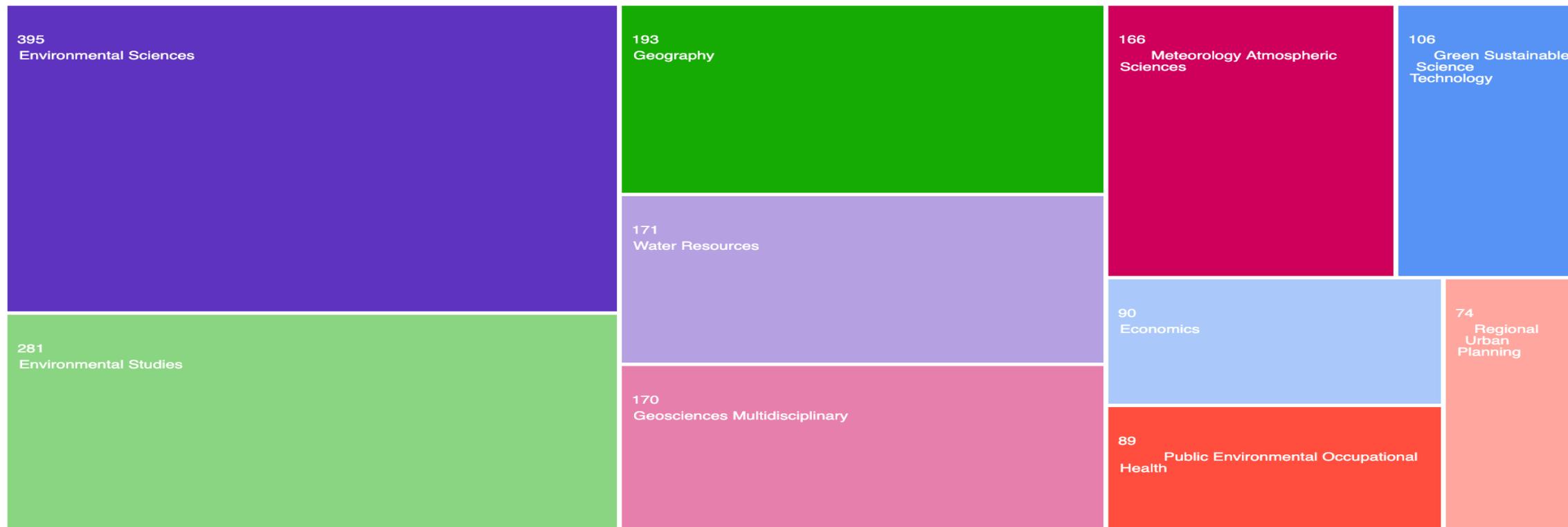


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## Share of papers per (all) disciplines





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## Example of paper resulted by the string

### Local economic resilience and economic specialization in Greece during the crisis

**By** [Artelaris, P](#) (Artelaris, Panagiotis) <sup>[1]</sup>, <sup>[4]</sup>; [Kallioras, D](#) (Kallioras, Dimitris) <sup>[2]</sup>; [Katsinis, A](#) (Katsinis, Anastasis) <sup>[3]</sup>

[View Web of Science ResearcherID and ORCID](#) (provided by Clarivate)

**Source**

[REGIONAL SCIENCE POLICY AND PRACTICE](#)

DOI: 10.1111/rsp3.12705

**Early Access**

JUL 2023

**Indexed**

2023-08-18

**Document Type**

Article; Early Access

**Jump to**

[↓ Enriched Cited References](#)

**Abstract**

This paper scrutinizes the issue of economic **resilience**, aiming to detect the existence of a systematic link with economic specialization. To this end, the paper conducts an empirical analysis at the **local** (i.e., **municipal**) level of Greece during the economic crisis period (2009-2015), **providing** cartographic visualizations and spatial econometrics estimations. Greece is the **country** that was hit the hardest by the economic crisis. Thus, the need to stabilize the **national** economy in Greece has seemingly outweighed policy issues of spatial interest, which are also of extreme importance. The findings of the paper reveal that, inter alia, both the level and the nature of economic specialization exert an impact on **local** economic **resilience**, **providing** insight into both theory and policy making.

**Keywords**

**Author Keywords:** [economic crisis](#); [economic resilience](#); [economic specialization](#); [Greece](#); [local economies](#)

**Keywords Plus:** [REGIONAL RESILIENCE](#); [LONG-RUN](#); [SPATIAL HETEROGENEITY](#); [FINANCIAL CRISIS](#); [EUROPE](#); [CONVERGENCE](#); [GEOGRAPHIES](#); [PATTERNS](#); [GROWTH](#); [SENSITIVITY](#)



## Conducting: Step 2 Other screening criteria

- **The Social Science Citation Index (SSCI)**

is a commercial citation index product of Clarivate Analytics. It was originally developed by the Institute for Scientific Information from the Science Citation Index. The Social Sciences Citation Index was developed in 1972 and it is a multidisciplinary index which indexes over 3,400 journals across 58 social science disciplines – 1985 to present, and it has 122 million cited references – 1900 to present.

The database records which articles are cited by other articles and aids in many bibliographic analytics.

Citation count in academic work is commonly associated with quality of research

But there is also some bias: e.g. favoring English-language journals and especially American journals

→ We refine our search by included all papers indexed by the Social Science Citation Index (SSCI) (N=807)



## Conducting: Step 3 Screening: Filter per sectors

By relying on a dataset which translates WOS categories in ERC sectors,

[https://figshare.com/articles/dataset/OST\\_-\\_Classification\\_of\\_WoS\\_subject\\_categories\\_into\\_27\\_2\\_ERC\\_panels\\_/21707543](https://figshare.com/articles/dataset/OST_-_Classification_of_WoS_subject_categories_into_27_2_ERC_panels_/21707543)

We identify the following 4 sectors which are connected with our dimensions in the realm of Social Sciences, namely: SH1, SH2, SH3 and SH7. This means 42 scientific disciplines.

→ N= 555



## Conducting: Step 4: Filter per specific categories

- Then, within SH1; SH2; SH3; SH7 sectors, we decided to focus on **23 WOS categories** only chosen according to the following criteria →
- Disciplinary areas where resilience and vulnerability are not associated with aspects related to the individual (e.g. no psychology),
- which are related to the 3 theoretical dimensions of the project (environmental, socio-economic and institutional-political) e.g. no communication, yes industrial relations and labour)
- when the sectors are related to policy and services (e.g. no nursing but yes healthpolicy services)
- → 524 papers

BUSINESS, FINANCE  
BUSINESS  
AGRICULTURAL ECONOMICS & POLICY  
ECONOMICS  
PUBLIC ADMINISTRATION  
DEVELOPMENT STUDIES  
INDUSTRIAL RELATIONS & LABOR  
INTERNATIONAL RELATIONS  
PUBLIC ADMINISTRATION  
POLITICAL SCIENCE  
LAW  
SOCIAL SCIENCES, INTERDISCIPLINARY  
WOMEN'S STUDIES  
SOCIOLOGY  
SOCIAL WORK  
SOCIAL ISSUES  
URBAN STUDIES  
REGIONAL & URBAN PLANNING  
AREA STUDIES  
DEMOGRAPHY  
PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH  
TRANSPORTATION  
GEOGRAPHY  
ENVIRONMENTAL STUDIES  
HEALTH POLICY & SERVICES



## Conducting: Step 5 Screening: ONLY 23 WOS Categories

We select those records that are classified ONLY within the 23 WOS categories previously identified

- IN practice
- We download the excel file with our 524 records and we apply a filter excluding all papers which are also classified in other disciplines that are not included in our 23 ones.

Example: ID 12 excluded:

Economics	Energy & Fuels	Environmental Sciences	Environmental Studies
-----------	----------------	------------------------	-----------------------

→ N= 308



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## Conducting; Step 6 Exclusion of duplicates

- Then, we check for eventual duplicates and we find only one
- Thus, we excluded one of the two.
- N= 307



## Conducting: Step 7: Qualitative Assessment on Abstracts

- A typical quality assessment is a **checklist** (here with binary indicators) that contains multiple factors to evaluate.
- In our case:
- Empirical articles (yes/no) and not literature reviews or only theoretical papers (yes/no)
- The link between vulnerability/resilience and territory must be strong (yes/no).
- Vulnerability or Resilience as cause (yes/no) or effect (yes/no)
- Territorial level mentioned: municipal; provincial; regional, county; state, federal, national, (Y/N), other (specify)



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**Extraction of final data**  
**Qualitative assessment by reading all papers**  
**Displaying results**





## Our work : How to perform the quality assessment

- Read the abstract of the first 10 papers and evaluate whether....
  - 1.a The paper is an empirical research (find reference to method, methodology, measure etc.) → include record.
  - 1.b The paper is related to literature review **only** → exclude record
  2. The reference to vulnerability or resilience is linked to territory (See sentinel words like: fragility, crisis, instability, disaster, exposure to disaster, poverty, criminality). → include record  

E.g. if vulnerability of a social group is used to measure the vulnerability of a territory, the paper must be included (e.g. low presence of primary schools or low level of education of youth affects the social vulnerability of a district). If the paper is focused only on vulnerability related to a specific social group (e.g. fragility of migrants, single mums, homeless etc. ), the paper must be excluded.
  3. The territorial vulnerability or resilience is studied as a cause or as an effect.
  4. Territorial level mentioned.



## Some examples for exclusion/inclusion after reading the articles

- Record ID 130 and 339 → excluded because they present only LIT REVIEW
- Record ID 61 → excluded because the socio-economic vulnerability (health problem HIV) is associated to individual relations (gender power relations) and not to any territorial community or territorial level.
- Record ID 437 → included because it is empirical paper and (socio-economic) resilience to Great Recession is connected to a specific territorial level (metropolitan-regions in the US).



## Scheme for Quality assessment (binary indicators)

ID record	empirical	Lit rev ONLY	Vul/Res_ Territory	Inclusion	Notes for doubts
130	no	yes	yes	no	
61	yes	no	no	no	
371	yes		?	?	Not sure about....
437	yes	no	yes	yes	



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# Thanks for your attention

**Assignment due by January 12,  
2024.**

**Individual quality assessment  
of the first 50 records**

**Send file to**

**[selena.grimaldi@unimc.it](mailto:selena.grimaldi@unimc.it)**

