

# **BIBLIOMETRIC METHODS TO SUPPORT STRATEGIC ANALYSIS OF THE SECURITY ENVIRONMENT: MAPPING AND PROFILING THE URBANIZATION RESEARCH FIELD**

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# AIM & RESEARCH QUESTIONS

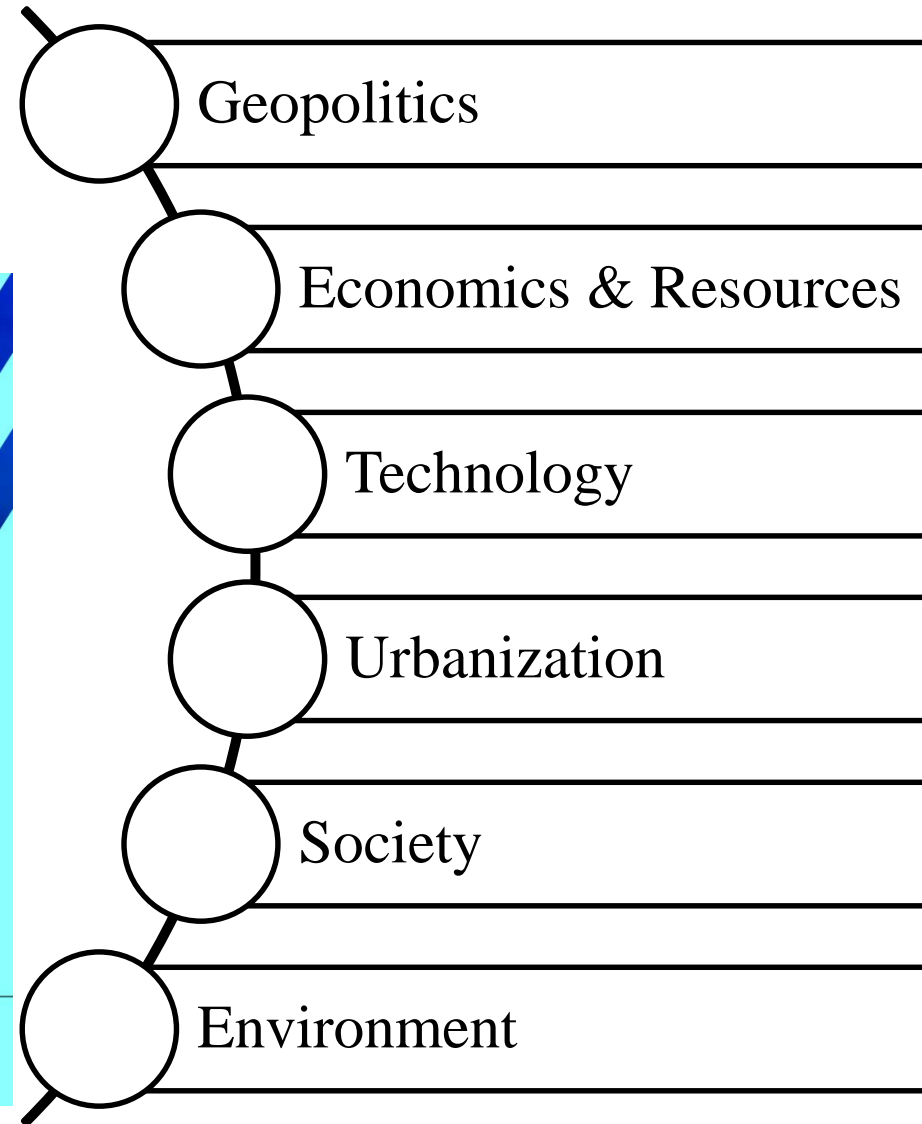
## Aim

- to explore the potential of bibliometric methods to support strategic analysis of the security environment

## Research Questions

- (1) Who are the main contributors (countries, research institutions, journals, authors) to the research field?
- (2) What are the leading and emerging themes within the research field?
- (3) What aspects of urbanization are studied in regard to the military context?

# CONTEXT OF THE STUDY: NUP 2X35 PROJECT



# **METHODOLOGY & RESEARCH LIMITATIONS**

## **Methodology**

- research profiling
- keywords co-occurrence analysis (VOSviewer)
- systematic literature review

## **Research Limitations**

- research methods triangulated but bibliometric analysis is a dominant method
- only one database i.e. Scopus, bias to English-language papers

# RESEARCH SAMPLING

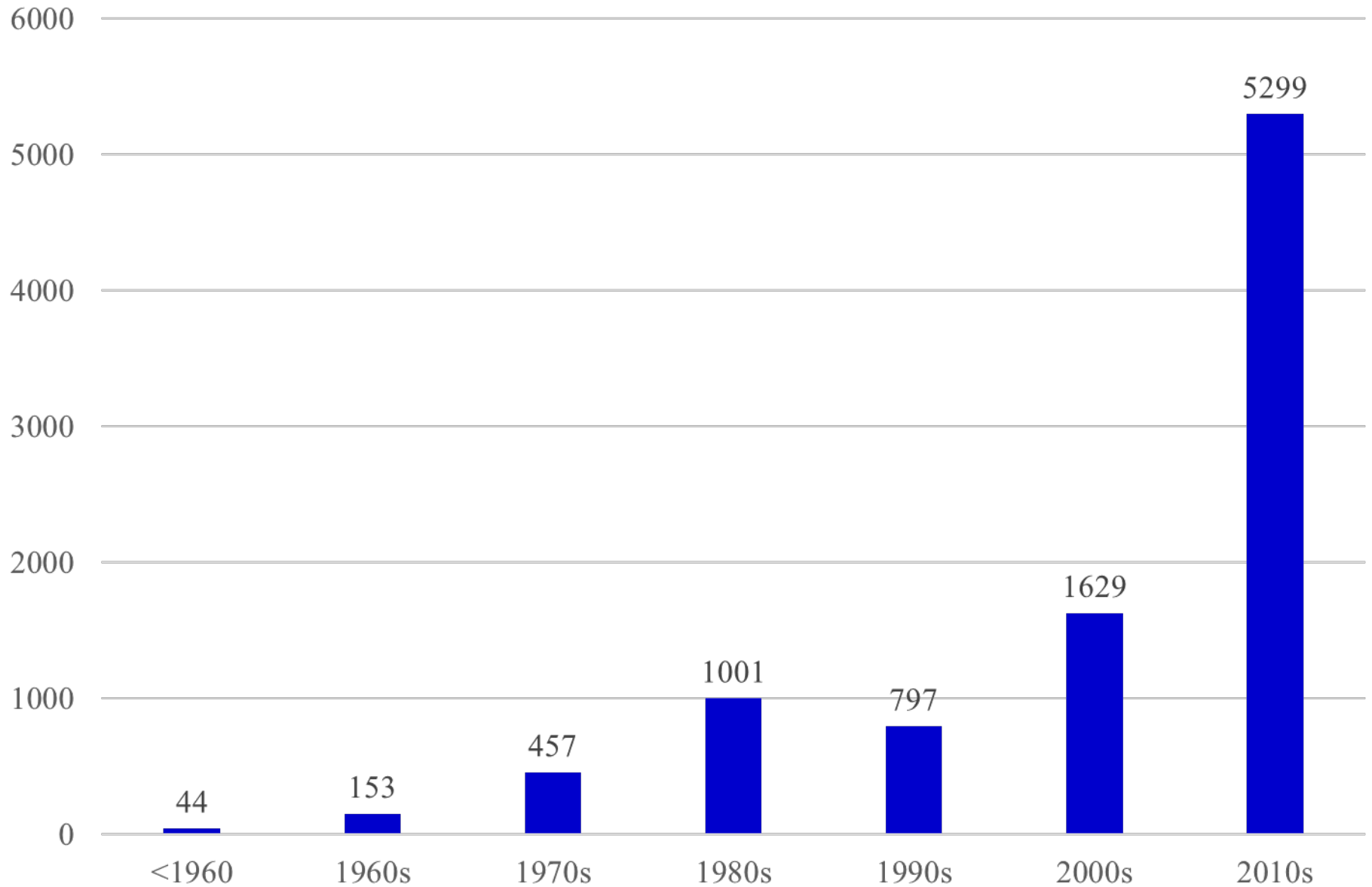
## **Reserach profiling and keywords co-occurrence analysis**

- search for ‘urbani?ation’ (15 July 2019)
- N=9,675

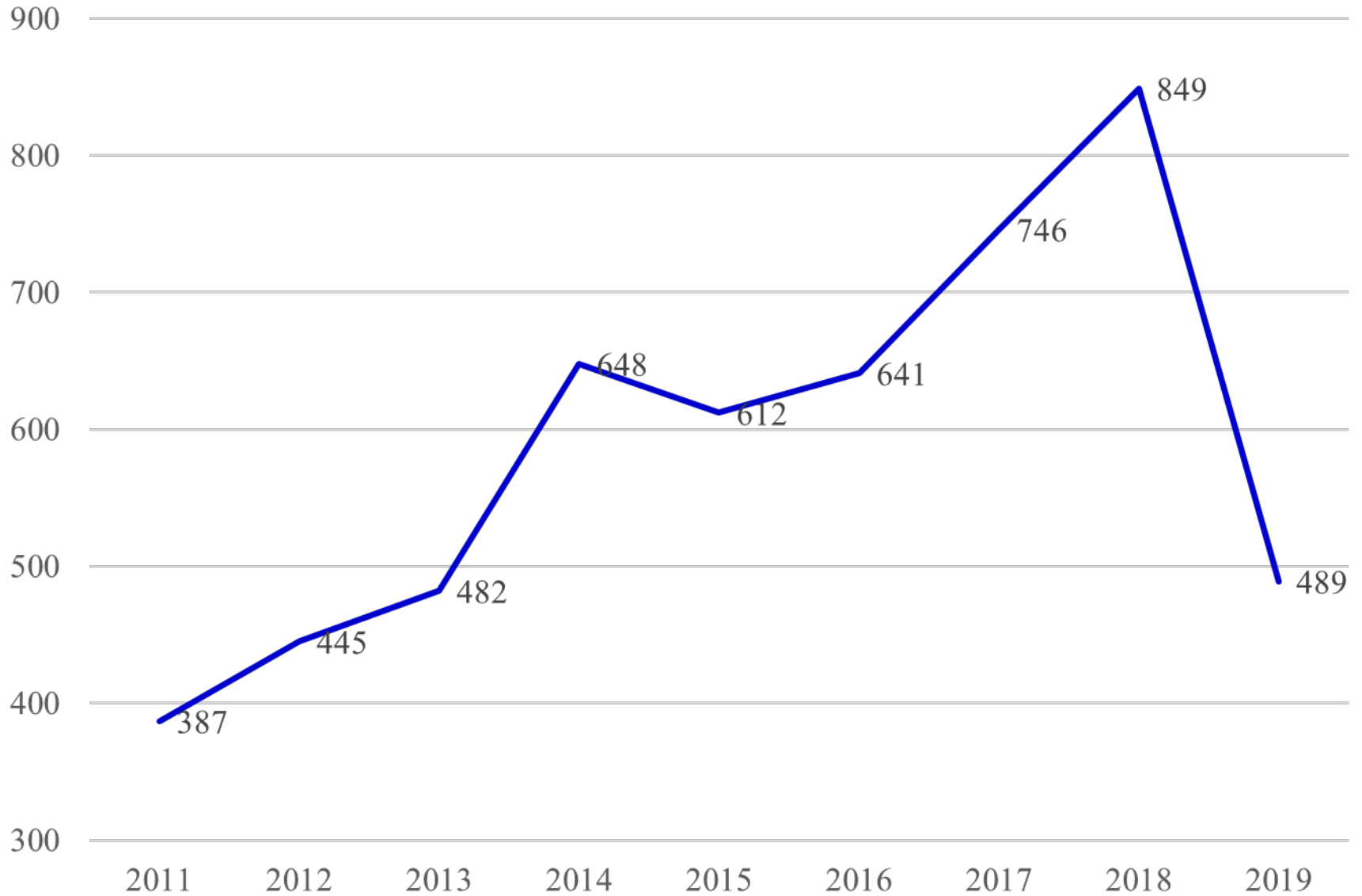
## **Systematic literature review**

- search for: Title (‘urbani?ation) AND Topic (Title, Keywords, Abstracts): (‘military’ OR ‘army’ OR ‘armed’ OR ‘defen?e’ OR ‘security’) (18 August 2019)
- N=301

# RESEARCH PRODUCTIVITY



# RESEARCH PRODUCTIVITY



# RESEARCH PROFILING PROCESS

## General publication profiling

Country Profiling

Institution Profiling

Journal Profiling

Authors Profiling

## Subject area profiling

Journal – Subject Area Profiling

Author – Subject Area Profiling

Core References – Subject Area Profiling

## Topic profiling

Journal – Topic Profiling

Journal – Author Profiling

Subject Area – Topic Profiling

Core References – Topic Profiling



# COUNTRY PROFILING

No.	Country	Publications		Citations		
		N	%	N	%	h
1.	China	2,395	24.75	26,562	19.25	nd
2.	United States	2,042	21.11	52,046	37.72	nd
3.	United Kingdom	641	6.63	13,565	9.83	60
4.	Australia	365	3.77	6,913	5.01	43
5.	India	326	3.37	4,818	3.49	30
6.	Canada	304	3.14	7,152	5.18	37
7.	France	295	3.05	3,353	2.43	28
8.	Germany	246	2.54	5,133	3.72	36
9	Japan	232	2.40	3,814	2.76	31
10.	South Africa	199	2.06	3,407	2.47	29

# RESEARCH INSTITUTION PROFILING

No.	Institution	Country	Papers		Citations		
			N	%	N	%	h
1.	Chinese Academy of Sciences	China	534	5.52	8,587	6,22	45
2.	University of Chinese Academy of Sciences	China	201	2.08	3,077	2,23	28
3.	Institute of Geographical and Natural Resources Research, Chinese Academy of Sciences	China	169	1.75	2,938	2,13	29
4.	Nanjing University	China	135	1.40	1,825	1,32	23
5.	Beijing Normal University	China	125	1.29	2,325	1,68	27
6.	Ministry of Education China	China	124	1.28	2,047	1,48	20
7.	Peking University	China	118	1.22	2,210	1,60	23
8.	Sun Yat-Sen University	China	101	1.04	1,560	1,13	22
9.	Arizona State University	US	84	0.87	2,752	1,99	27
10.	Zhejiang University	China	77	0.80	1,672	1,21	20
11.	Centre National de la Recherche Scientifique	France	71	0.73	1,115	0.81	18
19.	University of Toronto	Canada	50	0.52	542	0.39	13
23.	Australian National University	Australia	46	0.48	616	0.45	15
28.	University of Cape Town	SA	44	0.45	860	0.62	11
30.	University of Oxford	UK	41	0.42	1,684	1.22	18
42.	University of Tokyo	Japan	35	0.36	555	0.40	12
	Deutsches Zentrum fur Luft- und Raumfahrt	Germany	16	0.17	417	0.30	6
	Jawaharlal Nehru University	India	12	0.12	104	0.08	6

# SOURCE TITLE PROFILING

No.	Source title	Publications		Citations		
		N	%	N	%	h
1.	Sustainability Switzerland	101	1.04	630	0.46	14
2.	Science of the Total Environment	83	0.86	1,369	0.99	20
3.	Landscape and Urban Planning	79	0.82	3,729	2.70	29
4.	Journal of Cleaner Production	76	0.79	1,407	1.02	21
5.	Urban Ecosystems	76	0.79	1,868	1.35	18
6.	Habitat International	75	0.78	2,055	1.49	25
7.	Advanced Materials Research	67	0.69	25	0.02	2
8-9.	Dili Xuebao Acta Geographica Sinica	61	0.63	765	0.55	16
8-9	Urban Studies	61	0.63	2,009	1.46	24
10.	Applied Mechanics and Materials	59	0.61	21	0.02	2

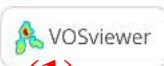
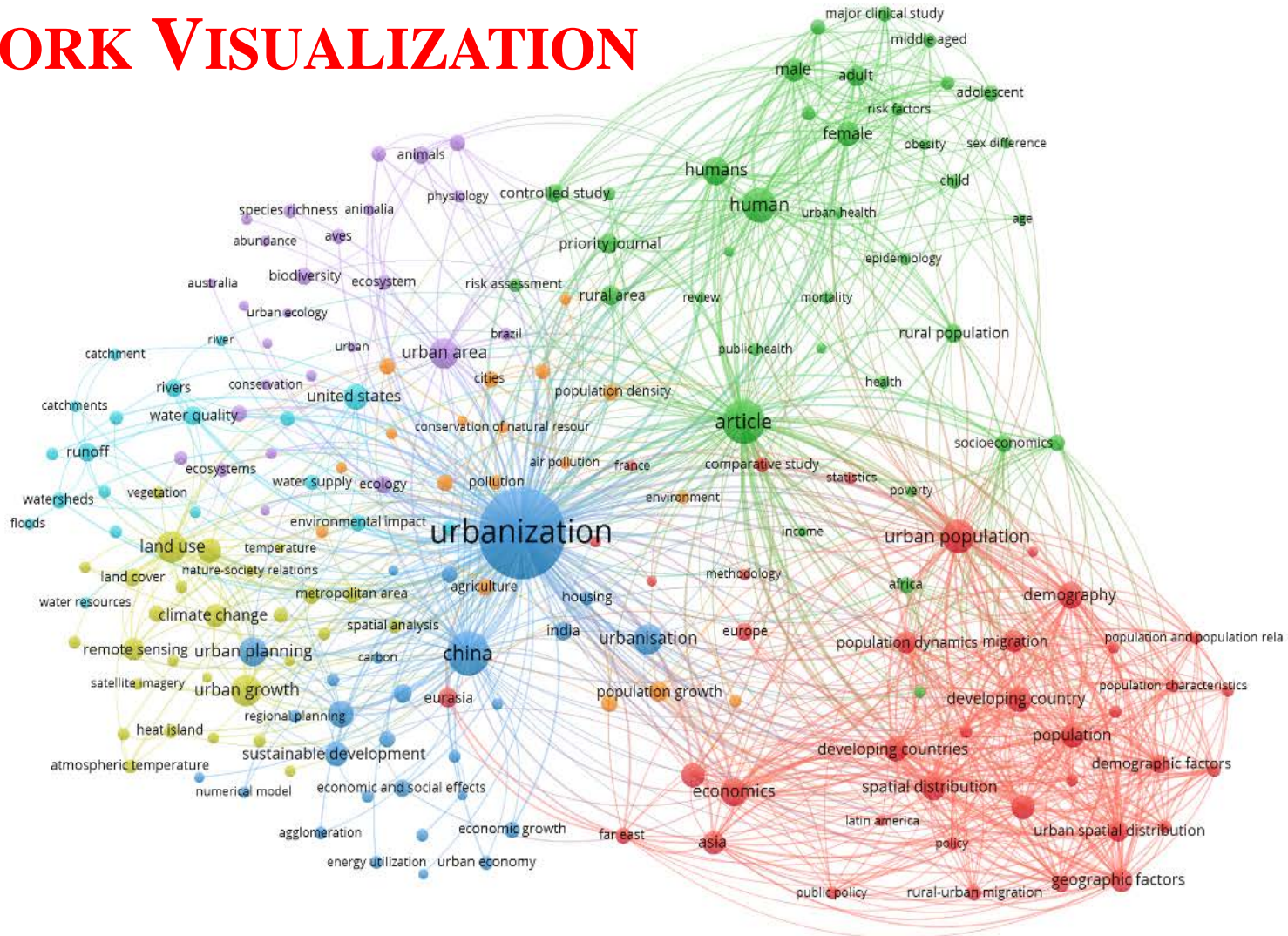
# AUTHOR PROFILING

No.	Author	Institution	Country	Publications		Citations		
				N	%	N	%	h
1.	Xu, Y.	Nanjing University	China	28	0.29	366	0.27	7
2.	Fang, C.	Institute of Geographical and Natural Resources Research, Chinese Academy of Sciences	China	26	0.27	478	0.35	12
3.	Tóthmérész, B.	MTA-DE Biodiversity and Ecosystem Services Research Group, Debrecen	Hungary	20	0.21	643	0.47	14
4.	Seto, K.C.	Yale University	US	19	0.20	1,336	0.97	14
5.	Shen, L.	Chongqing University	China	19	0.20	397	0.29	11
6.	Chen, M.	University of Chinese Academy of Sciences	China	17	0.18	292	0.21	9
7.	Wu, J.	Beijing Normal University	China	17	0.18	919	0.67	14
8.	Lövei, G.L.	Aarhus University	Denmark	16	0.17	306	0.22	7
9.	Magura, T.	Debreceni Egyetem	Hungary	15	0.16	470	0.34	11
10.	Zhang, X.	City University of Hong Kong	China	15	0.16	333	0.24	9



# LEADING RESEARCH TOPICS/STREAMS:

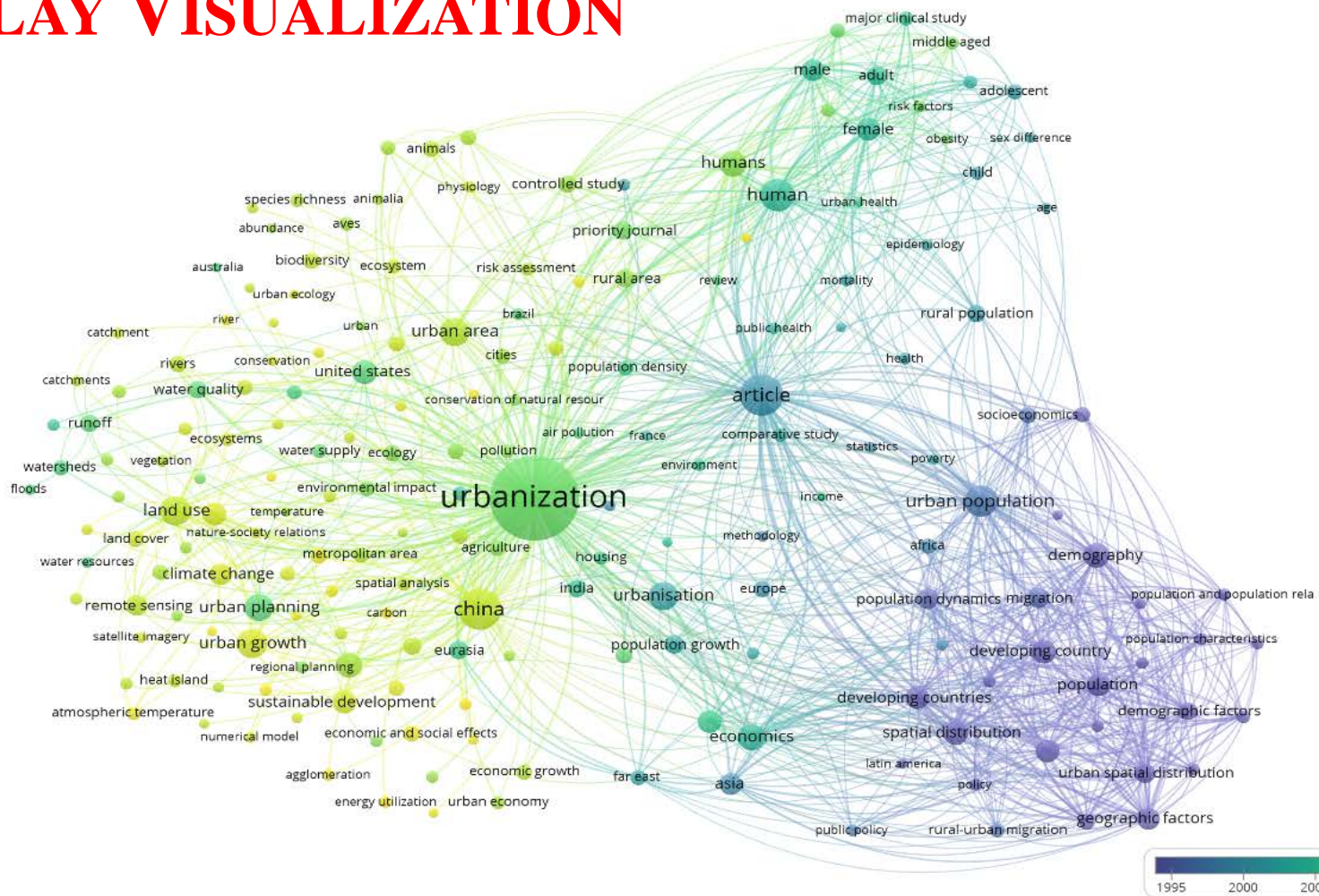
## NETWORK VISUALIZATION



- (1) population, demographics and migrations,
- (2) human aspects of urbanization,
- (3) urbanization and urban development,
- (4) urban growth, land use and climate changes,
- (5) biology and ecology in the urban context,
- (6) water and hydrology, and
- (7) environmental impact of urbanization



# EMERGING RESEARCH TOPICS/STREAMS: OVERLAY VISUALIZATION



VOSviewer

‘rapid urbanizations’ (2015.65), ‘energy utilization’ (2015.57), ‘ecosystem service’ (2015.38), or ‘Beijing’ (2015.18), ‘carbon dioxide’ (2014.93), ‘economic and social effects’ (2014.28)

‘land use change (2013.46), ‘urban growth’ (2013.39), ‘climate change’ (2013.29), ‘land cover’ (2013.27), ‘sustainable development’ (2013.23)



# SYSTEMATIC LITERATURE REVIEW OF DATA: SECURITY OF URBAN AREAS (IDENTIFIED TOPICS)



Food security

Water security

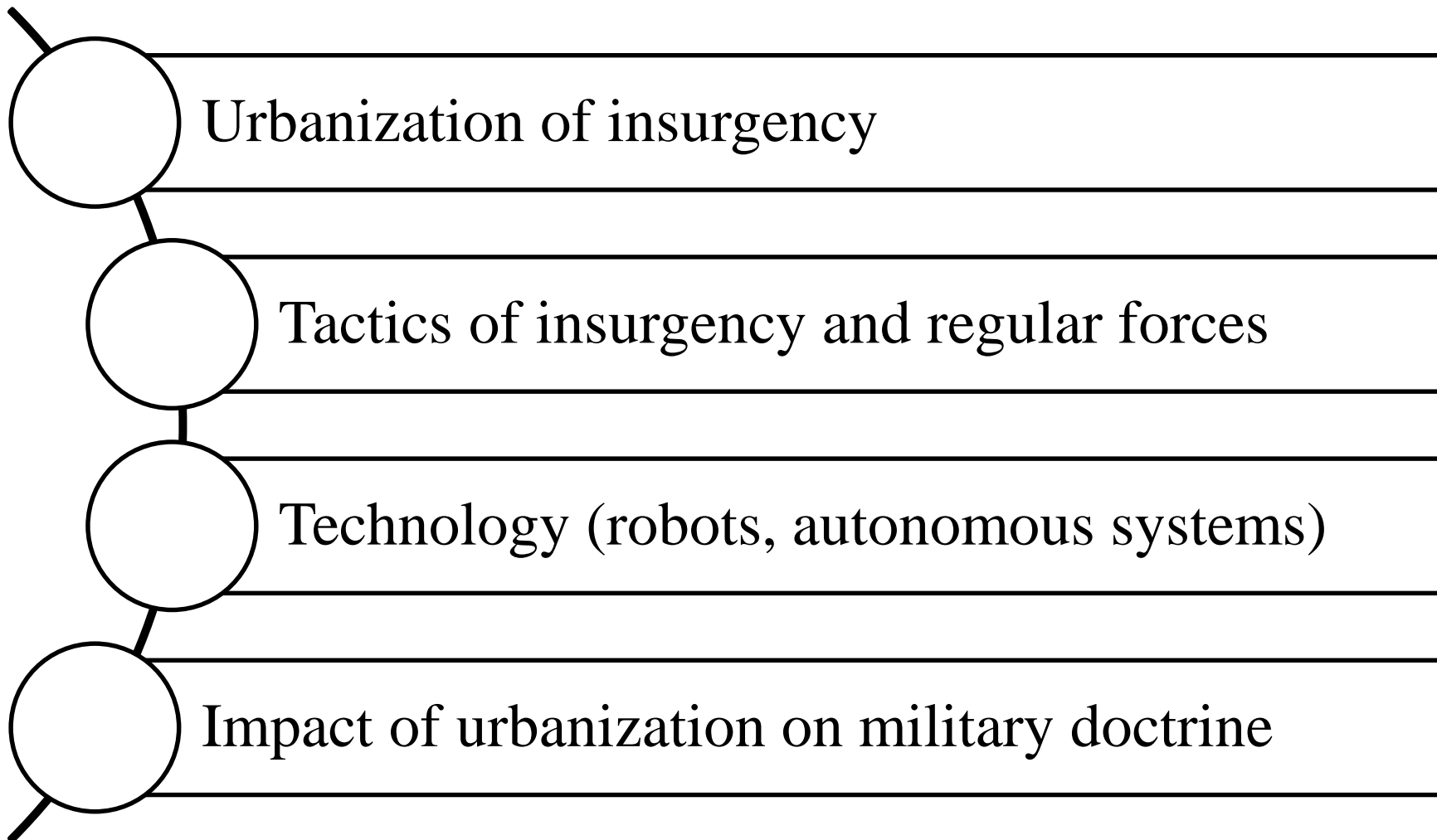
Ecological security

Human security in climate change and natural disasters

Energy security

Security of critical infrastructure

# SYSTEMATIC LITERATURE REVIEW OF DATA: URBAN AREAS AS A BATTLEFIELD (IDENTIFIED TOPICS)



# RECOMMENDATIONS FOR FURTHER RESEARCH

- replication of the study (other databases, languages other than English) in order to mitigate subjectivity
- thorough systematic literature reviews of identified leading thematic clusters and emerging topics
- replication of the study in 4-5 years in order to show dynamics of the research field

Q&A