Snowball Search and global quantification of the references

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# 1. Setup

library(bibtex)  
library(openalexR)  
  
#library(dplyr)  
#library(ggplot2)  
#library(knitr)  
  
kp <- bibtex::read.bib("./key-paper.bib")  
dois <- sapply(  
 kp,   
 function(x){  
 x$doi  
 }  
 )

# 2. Searches

## 2.1 OpenAlex

### 2.1.1 Setup OpelAnex usage and do snowball serarch

library(ggraph)

Loading required package: ggplot2

library(tidygraph)

Attaching package: 'tidygraph'

The following object is masked from 'package:stats':  
  
 filter

key\_works <- oa\_fetch(  
 entity = "works",  
 doi = dois,  
 verbose = FALSE  
)  
  
ids <- openalexR:::shorten\_oaid(key\_works$id)  
  
citing\_kp <- lapply(  
 ids,  
 function(id) {  
 oa\_fetch(  
 entity = "works",  
 output = "tibble",  
 cites = id,  
 verbose = FALSE  
 )  
 }  
)

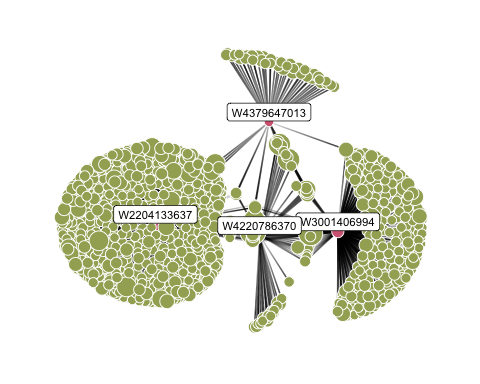
Warning in oa\_fetch(entity = "works", output = "tibble", cites = id, verbose =  
FALSE): No collection found!

names(citing\_kp) <- ids  
  
cited\_by\_kp <- lapply(  
 ids,  
 function(id) {  
 oa\_fetch(  
 entity = "works",  
 output = "tibble",  
 cited\_by = id,  
 verbose = FALSE  
 )  
 }  
)  
names(cited\_by\_kp) <- ids  
  
## get the snowball data  
snowball <- oa\_snowball(  
 identifier = ids,  
 verbose = FALSE  
)  
  
flat\_snow <- snowball2df(snowball)

### 2.1.2 Graph of links between references

ggraph(graph = as\_tbl\_graph(snowball), layout = "stress") +  
 geom\_edge\_link(aes(alpha = after\_stat(index)), show.legend = FALSE) +  
 geom\_node\_point(aes(fill = oa\_input, size = cited\_by\_count), shape = 21, color = "white") +  
 geom\_node\_label(aes(filter = oa\_input, label = id), nudge\_y = 0.2, size = 3) +  
 scale\_edge\_width(range = c(0.1, 1.5), guide = "none") +  
 scale\_size(range = c(3, 10), guide = "none") +  
 scale\_fill\_manual(values = c("#a3ad62", "#d46780"), na.value = "grey", name = "") +  
 theme\_graph() +  
 theme(  
 plot.background = element\_rect(fill = "transparent", colour = NA),  
 panel.background = element\_rect(fill = "transparent", colour = NA),  
 legend.position = "bottom"  
 ) +  
 guides(fill = "none")

Warning: Using the `size` aesthetic in this geom was deprecated in ggplot2 3.4.0.  
ℹ Please use `linewidth` in the `default\_aes` field and elsewhere instead.



### 2.1.3 Identification of references with more than one edge

This is the number of connections (connection\_count)of the paper (id)

mult\_edge <- flat\_snow |>  
 select(id, connection\_count) |>  
 filter(connection\_count > 1) |>  
 arrange(desc(connection\_count))  
  
links <- flat\_snow |>  
 filter(id %in% mult\_edge$id)  
  
links |>  
 select(id, display\_name, publication\_year, doi, connection\_count) |>  
 arrange(desc(connection\_count)) |>  
 knitr::kable()

| id | display\_name | publication\_year | doi | connection\_count |
| --- | --- | --- | --- | --- |
| W2204133637 | Sustainability Transitions Research: Transforming Science and Practice for Societal Change | 2017 | https://doi.org/10.1146/annurev-environ-102014-021340 | 722 |
| W3001406994 | Transformations to sustainability: combining structural, systemic and enabling approaches | 2020 | https://doi.org/10.1016/j.cosust.2019.12.004 | 281 |
| W4220786370 | Critical social science perspectives on transformations to sustainability | 2022 | https://doi.org/10.1016/j.cosust.2022.101160 | 66 |
| W4379647013 | Untangling theories of transformation: Reflections for ocean governance | 2023 | https://doi.org/10.1016/j.marpol.2023.105710 | 55 |
| W2520670351 | Exploring the governance and politics of transformations towards sustainability | 2017 | https://doi.org/10.1016/j.eist.2016.09.001 | 4 |
| W2011303397 | Resilience and Stability of Ecological Systems | 1973 | https://doi.org/10.1146/annurev.es.04.110173.000245 | 3 |
| W2020319093 | Societal transformation in response to global environmental change: A review of emerging concepts | 2014 | https://doi.org/10.1007/s13280-014-0582-z | 3 |
| W2096885696 | A safe operating space for humanity | 2009 | https://doi.org/10.1038/461472a | 3 |
| W2127569725 | Resilience Thinking: Integrating Resilience, Adaptability and Transformability | 2010 | https://doi.org/10.5751/es-03610-150420 | 3 |
| W2127643778 | Global environmental change II | 2011 | https://doi.org/10.1177/0309132511425767 | 3 |
| W2315897902 | Sustainability transformations: a resilience perspective | 2014 | https://doi.org/10.5751/es-06799-190401 | 3 |
| W2790286726 | A perspective on radical transformations to sustainability: resistances, movements and alternatives | 2018 | https://doi.org/10.1007/s11625-018-0543-8 | 3 |
| W2804856255 | Transition versus transformation: What’s the difference? | 2018 | https://doi.org/10.1016/j.eist.2017.10.007 | 3 |
| W2883507226 | The Dark Side of Transformation: Latent Risks in Contemporary Sustainability Discourse | 2018 | https://doi.org/10.1111/anti.12405 | 3 |
| W2960049244 | Just Transformations to Sustainability | 2019 | https://doi.org/10.3390/su11143881 | 3 |
| W4281563038 | The Urgency of Transforming Biodiversity Governance | 2022 | https://doi.org/10.1017/9781108856348.002 | 3 |
| W4362573725 | (Re)framing technology: The evolution from biogas to biomethane in Austria | 2023 | https://doi.org/10.1016/j.eist.2023.100724 | 3 |
| W1964510407 | Adaptation and transformation | 2014 | https://doi.org/10.1007/s10584-014-1303-0 | 2 |
| W1976759885 | ADAPTIVE GOVERNANCE OF SOCIAL-ECOLOGICAL SYSTEMS | 2005 | https://doi.org/10.1146/annurev.energy.30.050504.144511 | 2 |
| W1999167944 | Planetary boundaries: Guiding human development on a changing planet | 2015 | https://doi.org/10.1126/science.1259855 | 2 |
| W2009175240 | Caution! Transitions Ahead: Politics, Practice, and Sustainable Transition Management | 2007 | https://doi.org/10.1068/a39310 | 2 |
| W2030655414 | The economics of degrowth | 2012 | https://doi.org/10.1016/j.ecolecon.2012.08.017 | 2 |
| W2048226523 | Action, research and participation: roles of researchers in sustainability transitions | 2014 | https://doi.org/10.1007/s11625-014-0258-4 | 2 |
| W2067441067 | Engaging with the politics of sustainability transitions | 2011 | https://doi.org/10.1016/j.eist.2011.02.003 | 2 |
| W2078778096 | Transformational adaptation when incremental adaptations to climate change are insufficient | 2012 | https://doi.org/10.1073/pnas.1115521109 | 2 |
| W2099330597 | Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study | 2002 | https://doi.org/10.1016/s0048-7333(02)00062-8 | 2 |
| W2156304718 | Typology of sociotechnical transition pathways | 2007 | https://doi.org/10.1016/j.respol.2007.01.003 | 2 |
| W2274815048 | Resilience, Adaptability and Transformability in Social-ecological Systems | 2004 | https://doi.org/10.5751/es-00650-090205 | 2 |
| W2516650870 | The politics of sustainability transitions | 2016 | https://doi.org/10.1080/1523908x.2016.1216782 | 2 |
| W2800906030 | Is the 1.5°C target possible? Exploring the three spheres of transformation | 2018 | https://doi.org/10.1016/j.cosust.2018.04.010 | 2 |
| W2809741249 | Promoting agency for social-ecological transformation: a transformation-lab in the Xochimilco social-ecological system | 2018 | https://doi.org/10.5751/es-10214-230246 | 2 |
| W2901630300 | Designing transformative spaces for sustainability in social-ecological systems | 2018 | https://doi.org/10.5751/es-10607-230432 | 2 |
| W2910922638 | An agenda for sustainability transitions research: State of the art and future directions | 2019 | https://doi.org/10.1016/j.eist.2019.01.004 | 2 |
| W2918193929 | Capitalism in sustainability transitions research: Time for a critical turn? | 2020 | https://doi.org/10.1016/j.eist.2019.02.005 | 2 |
| W2966770423 | Socio-technical transitions to sustainability: a review of criticisms and elaborations of the Multi-Level Perspective | 2019 | https://doi.org/10.1016/j.cosust.2019.06.009 | 2 |
| W3030603415 | Scaling the impact of sustainability initiatives: a typology of amplification processes | 2020 | https://doi.org/10.1186/s42854-020-00007-9 | 2 |
| W3036820224 | Sustainability transformations: socio-political shocks as opportunities for governance transitions | 2020 | https://doi.org/10.1016/j.gloenvcha.2020.102097 | 2 |
| W3047523542 | Sustainability Science: Toward a Synthesis | 2020 | https://doi.org/10.1146/annurev-environ-012420-043621 | 2 |
| W3092538383 | Capacity to Promote Transformations | 2020 | https://doi.org/10.21428/f8d85a02.6bc9d7aa | 2 |
| W3092706105 | Post-pandemic transformations: How and why COVID-19 requires us to rethink development | 2021 | https://doi.org/10.1016/j.worlddev.2020.105233 | 2 |
| W3108934821 | A leverage points perspective on social networks to understand sustainability transformations: evidence from Southern Transylvania | 2020 | https://doi.org/10.1007/s11625-020-00881-z | 2 |
| W3129998045 | Radical changes are needed for transformations to a good Anthropocene | 2021 | https://doi.org/10.1038/s42949-021-00017-x | 2 |
| W3136925335 | Fostering bottom-up actor coalitions for transforming complex rural territorial pathways | 2021 | https://doi.org/10.1016/j.cosust.2021.02.001 | 2 |
| W3140580853 | Citizen Science for Transformative Air Quality Policy in Germany and Niger | 2021 | https://doi.org/10.3390/su13073973 | 2 |
| W3154787182 | Transformation beyond conservation: how critical social science can contribute to a radical new agenda in biodiversity conservation | 2021 | https://doi.org/10.1016/j.cosust.2021.03.005 | 2 |
| W3157054384 | The migration-sustainability paradox: transformations in mobile worlds | 2021 | https://doi.org/10.1016/j.cosust.2021.03.013 | 2 |
| W3159399995 | An Overview of the Problems and Prospects for Circular Agriculture in Sustainable Food Systems in the Anthropocene | 2021 | https://doi.org/10.48130/cas-2021-0003 | 2 |
| W3163183782 | Assessing nature-based solutions for transformative change | 2021 | https://doi.org/10.1016/j.oneear.2021.04.013 | 2 |
| W3163293840 | Making place-based sustainability initiatives visible in the Brazilian Amazon | 2021 | https://doi.org/10.1016/j.cosust.2021.03.007 | 2 |
| W3169157822 | The governance of sociotechnical transformations to sustainability | 2021 | https://doi.org/10.1016/j.cosust.2021.04.010 | 2 |
| W3185847870 | The role of data in transformations to sustainability: a critical research agenda | 2021 | https://doi.org/10.1016/j.cosust.2021.06.009 | 2 |
| W3186104796 | Transforming matters: sustaining gold lifeways in artisanal and small-scale mining | 2021 | https://doi.org/10.1016/j.cosust.2021.06.010 | 2 |
| W3189680882 | How to Save a Million Species? Transformative Governance through Prioritization | 2022 | https://doi.org/10.1017/9781108856348.005 | 2 |
| W3204417470 | Crisis, transformation, and agency: Why are people going back-to-the-land in Greece? | 2021 | https://doi.org/10.1007/s11625-021-01043-5 | 2 |
| W4200263675 | Exploring the social, ethical, legal, and responsibility dimensions of artificial intelligence for health – a new column in Intelligent Medicine | 2022 | https://doi.org/10.1016/j.imed.2021.12.002 | 2 |
| W4200343243 | Exploring the transformative potential of urban food | 2021 | https://doi.org/10.1038/s42949-021-00041-x | 2 |
| W4200483750 | Abordagem sistêmica, coalizões e territórios | 2021 | https://doi.org/10.37370/raizes.2021.v41.737 | 2 |
| W4205298166 | Democratising sustainability transformations: Assessing the transformative potential of democratic practices in environmental governance | 2022 | https://doi.org/10.1016/j.esg.2021.100131 | 2 |
| W4221021933 | How to swarm? Organizing for sustainable and equitable food systems transformation in a time of crisis | 2022 | https://doi.org/10.1016/j.gfs.2022.100629 | 2 |
| W4281628495 | Systems thinking as a paradigm shift for sustainability transformation | 2022 | https://doi.org/10.1016/j.gloenvcha.2022.102544 | 2 |
| W4294365732 | Transformative adaptation and implications for transdisciplinary climate change research | 2022 | https://doi.org/10.1088/2752-5295/ac8b9d | 2 |
| W4304822863 | Food systems transformations in South America: Insights from a transdisciplinary process rooted in Uruguay | 2022 | https://doi.org/10.3389/fsufs.2022.887034 | 2 |
| W4311654161 | Transdisciplinary transformative change: An analysis of some best practices and barriers and the role of critical social science in getting us there | 2022 | https://doi.org/10.21203/rs.3.rs-2330434/v1 | 2 |
| W4313241558 | Gender in sustainability transition studies: Concepts, blind spots and future orientations | 2023 | https://doi.org/10.1016/j.eist.2022.100686 | 2 |
| W4328120212 | Transdisciplinary transformative change: an analysis of some best practices and barriers, and the potential of critical social science in getting us there | 2023 | https://doi.org/10.1007/s10531-023-02576-0 | 2 |
| W4367316381 | Toward a systemic approach to energy transformation in Algeria | 2023 | https://doi.org/10.1007/s41207-023-00367-1 | 2 |
| W4379231521 | Unlocking and accelerating transformations to the SDGs: a review of existing knowledge | 2023 | https://doi.org/10.1007/s11625-023-01342-z | 2 |
| W4381432119 | Place-based solutions for global social-ecological dilemmas: An analysis of locally grounded, diversified, and cross-scalar initiatives in the Amazon | 2023 | https://doi.org/10.1016/j.gloenvcha.2023.102718 | 2 |
| W4382133137 | How to achieve the net-zero target? Lessons learned from past transformations | 2023 | https://doi.org/10.1371/journal.pstr.0000068 | 2 |
| W4382623225 | Politics beyond agency? Pluralizing structure(s) in sustainability transitions | 2023 | https://doi.org/10.1016/j.erss.2023.103120 | 2 |

### 2.1.4 Identification of Concepts

OpenAlex assigns all works concepts. The concepts are in hirarchical order, ranging from 0 to 3. The higher the number, the more specific the concept. The concepts are assigned to the paper (id)

#### 2.1.4.1 Level 0

lapply(  
 flat\_snow[["concepts"]],  
 FUN = function(x) {  
 x[["display\_name"]][x[["level"]] == 0]  
 }  
) |>  
 unlist() |>  
 table() |>  
 sort(decreasing = TRUE) |>  
 knitr::kable()

| Var1 | Freq |
| --- | --- |
| Political science | 682 |
| Biology | 667 |
| Sociology | 566 |
| Economics | 556 |
| Business | 524 |
| Computer science | 469 |
| Geography | 361 |
| Philosophy | 302 |
| Engineering | 294 |
| Physics | 181 |
| Chemistry | 143 |
| Psychology | 138 |
| Environmental science | 136 |
| Mathematics | 88 |
| Medicine | 85 |
| Art | 27 |
| Geology | 16 |
| History | 15 |
| Materials science | 8 |

#### 2.1.4.2 Level 1

lapply(  
 flat\_snow[["concepts"]],  
 function(x) {  
 x[["display\_name"]][x[["level"]] == 1]  
 }  
) |>  
 unlist() |>  
 table() |>  
 sort(decreasing = TRUE) |>  
 knitr::kable()

| Var1 | Freq |
| --- | --- |
| Ecology | 622 |
| Law | 508 |
| Environmental resource management | 258 |
| Finance | 223 |
| Social science | 220 |
| Pedagogy | 202 |
| Archaeology | 196 |
| Environmental planning | 194 |
| Public relations | 167 |
| Biochemistry | 161 |
| Economic system | 159 |
| Artificial intelligence | 157 |
| Environmental ethics | 140 |
| Epistemology | 127 |
| Knowledge management | 123 |
| Quantum mechanics | 119 |
| Management | 118 |
| Management science | 106 |
| Process management | 95 |
| Operating system | 92 |
| Environmental economics | 85 |
| Linguistics | 85 |
| Economic growth | 83 |
| Engineering ethics | 80 |
| Economic geography | 70 |
| Pathology | 67 |
| Marketing | 66 |
| Political economy | 66 |
| Social psychology | 65 |
| Natural resource economics | 61 |
| Public administration | 58 |
| Industrial organization | 56 |
| Programming language | 56 |
| Anthropology | 50 |
| Machine learning | 50 |
| Paleontology | 41 |
| Civil engineering | 39 |
| Electrical engineering | 39 |
| Mechanical engineering | 39 |
| Neuroscience | 39 |
| Thermodynamics | 39 |
| Risk analysis (engineering) | 38 |
| Regional science | 37 |
| Computer security | 35 |
| Market economy | 29 |
| Microeconomics | 28 |
| Psychiatry | 28 |
| World Wide Web | 27 |
| Cartography | 26 |
| Macroeconomics | 26 |
| Mathematical analysis | 25 |
| Economy | 24 |
| Statistics | 24 |
| Algorithm | 23 |
| Waste management | 23 |
| Pure mathematics | 22 |
| Computer network | 20 |
| Demography | 20 |
| Psychotherapist | 20 |
| Embedded system | 19 |
| Evolutionary biology | 16 |
| Structural engineering | 16 |
| Positive economics | 15 |
| Public economics | 15 |
| Development economics | 14 |
| Aesthetics | 13 |
| Geometry | 13 |
| Neoclassical economics | 13 |
| Optics | 13 |
| Visual arts | 13 |
| Law and economics | 12 |
| Oceanography | 12 |
| Botany | 11 |
| Data science | 11 |
| Environmental engineering | 11 |
| Financial economics | 10 |
| Communication | 9 |
| Database | 9 |
| Nursing | 9 |
| Agroforestry | 8 |
| Forestry | 8 |
| Geodesy | 8 |
| Humanities | 8 |
| Literature | 8 |
| Meteorology | 8 |
| Systems engineering | 8 |
| Telecommunications | 8 |
| Genetics | 7 |
| Software engineering | 7 |
| Water resource management | 7 |
| Architectural engineering | 6 |
| Data mining | 6 |
| Internal medicine | 6 |
| Acoustics | 5 |
| Agricultural economics | 5 |
| Astrobiology | 5 |
| International trade | 5 |
| Accounting | 4 |
| Composite material | 4 |
| Developmental psychology | 4 |
| Fishery | 4 |
| Gender studies | 4 |
| Operations management | 4 |
| Organic chemistry | 4 |
| Physical geography | 4 |
| Advertising | 3 |
| Agronomy | 3 |
| Astronomy | 3 |
| Cognitive psychology | 3 |
| Combinatorics | 3 |
| Econometrics | 3 |
| Library science | 3 |
| Mathematical economics | 3 |
| Petroleum engineering | 3 |
| Transport engineering | 3 |
| Virology | 3 |
| Agricultural science | 2 |
| Applied psychology | 2 |
| Art history | 2 |
| Astrophysics | 2 |
| Classical mechanics | 2 |
| Cognitive science | 2 |
| Engineering management | 2 |
| Engineering physics | 2 |
| Environmental health | 2 |
| Financial system | 2 |
| Immunology | 2 |
| Information retrieval | 2 |
| Internet privacy | 2 |
| Mathematical physics | 2 |
| Media studies | 2 |
| Physical chemistry | 2 |
| Polymer chemistry | 2 |
| Reliability engineering | 2 |
| Theology | 2 |
| Welfare economics | 2 |
| Aerospace engineering | 1 |
| Biotechnology | 1 |
| Chemical engineering | 1 |
| Chromatography | 1 |
| Climatology | 1 |
| Commerce | 1 |
| Computer vision | 1 |
| Condensed matter physics | 1 |
| Demographic economics | 1 |
| Earth science | 1 |
| Economic history | 1 |
| Endocrinology | 1 |
| Environmental protection | 1 |
| Food science | 1 |
| Geomorphology | 1 |
| Geotechnical engineering | 1 |
| Gynecology | 1 |
| Human–computer interaction | 1 |
| Keynesian economics | 1 |
| Mathematics education | 1 |
| Medical education | 1 |
| Nanotechnology | 1 |
| Natural language processing | 1 |
| Nuclear engineering | 1 |
| Nuclear physics | 1 |
| Operations research | 1 |
| Parallel computing | 1 |
| Socioeconomics | 1 |
| Soil science | 1 |
| Theoretical computer science | 1 |

#### 2.1.4.3 Level 2

lapply(  
 flat\_snow[["concepts"]],  
 function(x) {  
 x[["display\_name"]][x[["level"]] == 2]  
 }  
) |>  
 unlist() |>  
 table() |>  
 sort(decreasing = TRUE) |>  
 knitr::kable()

| Var1 | Freq |
| --- | --- |
| Sustainability | 447 |
| Politics | 233 |
| Corporate governance | 231 |
| Transformative learning | 183 |
| Gene | 155 |
| Context (archaeology) | 134 |
| Sustainable development | 134 |
| Agriculture | 97 |
| Climate change | 94 |
| Agency (philosophy) | 72 |
| Perspective (graphical) | 67 |
| Process (computing) | 67 |
| Action (physics) | 60 |
| Alternative medicine | 50 |
| Government (linguistics) | 45 |
| Adaptation (eye) | 38 |
| Futures contract | 38 |
| Resilience (materials science) | 38 |
| Stakeholder | 37 |
| Framing (construction) | 35 |
| Scale (ratio) | 34 |
| Transformational leadership | 33 |
| Power (physics) | 32 |
| Renewable energy | 31 |
| Scholarship | 31 |
| Normative | 30 |
| Psychological resilience | 30 |
| Sociotechnical system | 30 |
| Citizen journalism | 29 |
| Energy (signal processing) | 26 |
| Urban planning | 26 |
| Circular economy | 25 |
| Order (exchange) | 25 |
| Value (mathematics) | 25 |
| Work (physics) | 25 |
| Anthropocene | 24 |
| Conceptual framework | 24 |
| Leverage (statistics) | 24 |
| Variety (cybernetics) | 23 |
| Earth system science | 22 |
| Mainstream | 22 |
| Production (economics) | 22 |
| Psychological intervention | 22 |
| Reflexivity | 22 |
| State (computer science) | 22 |
| Vision | 22 |
| Niche | 21 |
| Population | 20 |
| Set (abstract data type) | 19 |
| Economic Justice | 18 |
| Diversity (politics) | 17 |
| Field (mathematics) | 17 |
| Vulnerability (computing) | 17 |
| Ecosystem | 16 |
| Social change | 16 |
| Accountability | 15 |
| Biodiversity | 15 |
| Business model | 15 |
| Disease | 15 |
| Incentive | 15 |
| Interdependence | 15 |
| Qualitative research | 15 |
| Typology | 15 |
| Empirical research | 14 |
| Equity (law) | 14 |
| Habitat | 14 |
| Intermediary | 14 |
| Narrative | 14 |
| Negotiation | 14 |
| Transformation processes | 14 |
| China | 13 |
| Dynamics (music) | 13 |
| Function (biology) | 13 |
| Greenhouse gas | 13 |
| Resource (disambiguation) | 13 |
| Urbanization | 13 |
| Cognitive reframing | 12 |
| Electricity | 12 |
| Nexus (standard) | 12 |
| Scope (computer science) | 12 |
| Space (punctuation) | 12 |
| Status quo | 12 |
| Consumption (sociology) | 11 |
| Discipline | 11 |
| Ecological systems theory | 11 |
| Empowerment | 11 |
| Key (lock) | 11 |
| Metropolitan area | 11 |
| Natural resource | 11 |
| Operationalization | 11 |
| Transdisciplinarity | 11 |
| Conceptualization | 10 |
| Identity (music) | 10 |
| Relevance (law) | 10 |
| Stakeholder engagement | 10 |
| Technological change | 10 |
| Fossil fuel | 9 |
| Indigenous | 9 |
| Innovation system | 9 |
| Restructuring | 9 |
| Situated | 9 |
| Systems thinking | 9 |
| Argument (complex analysis) | 8 |
| Bridging (networking) | 8 |
| Content (measure theory) | 8 |
| Entrepreneurship | 8 |
| Paradigm shift | 8 |
| Social learning | 8 |
| System dynamics | 8 |
| Tourism | 8 |
| Viewpoints | 8 |
| German | 7 |
| Land use | 7 |
| Living lab | 7 |
| Quality (philosophy) | 7 |
| Software deployment | 7 |
| Transparency (behavior) | 7 |
| Adaptability | 6 |
| Adaptive management | 6 |
| Commons | 6 |
| Control reconfiguration | 6 |
| Credibility | 6 |
| Dimension (graph theory) | 6 |
| Futures studies | 6 |
| General partnership | 6 |
| Health care | 6 |
| Livestock | 6 |
| Pace | 6 |
| Perception | 6 |
| Position (finance) | 6 |
| Scarcity | 6 |
| Social capital | 6 |
| Structure and agency | 6 |
| Supply chain | 6 |
| Term (time) | 6 |
| Unpacking | 6 |
| Action research | 5 |
| Ambiguity | 5 |
| Architecture | 5 |
| Biosphere | 5 |
| Citizen science | 5 |
| Destabilisation | 5 |
| Embeddedness | 5 |
| Higher education | 5 |
| Human settlement | 5 |
| Humanity | 5 |
| Identification (biology) | 5 |
| Institutionalisation | 5 |
| Intermediation | 5 |
| Legislature | 5 |
| Multidisciplinary approach | 5 |
| Natural (archaeology) | 5 |
| Public health | 5 |
| Relation (database) | 5 |
| Resistance (ecology) | 5 |
| Sanitation | 5 |
| Structuring | 5 |
| Unintended consequences | 5 |
| Amazon rainforest | 4 |
| Big data | 4 |
| CLARITY | 4 |
| Competition (biology) | 4 |
| Complex adaptive system | 4 |
| Desk | 4 |
| Efficient energy use | 4 |
| Emerging technologies | 4 |
| Environmental justice | 4 |
| Experiential learning | 4 |
| Financial crisis | 4 |
| Flexibility (engineering) | 4 |
| Focus group | 4 |
| Food waste | 4 |
| Human systems engineering | 4 |
| Index (typography) | 4 |
| Institutional change | 4 |
| Interpretation (philosophy) | 4 |
| Intervention (counseling) | 4 |
| Latin Americans | 4 |
| Legislation | 4 |
| Lens (geology) | 4 |
| Local government | 4 |
| Meaning (existential) | 4 |
| Modernization theory | 4 |
| Nature versus nurture | 4 |
| Novelty | 4 |
| Openness to experience | 4 |
| Participatory action research | 4 |
| Plural | 4 |
| Pluralism (philosophy) | 4 |
| Poverty | 4 |
| Praxis | 4 |
| Scrutiny | 4 |
| Special education | 4 |
| Strengths and weaknesses | 4 |
| Theme (computing) | 4 |
| Underpinning | 4 |
| Water supply | 4 |
| Affect (linguistics) | 3 |
| Anthropocentrism | 3 |
| Anticipation (artificial intelligence) | 3 |
| Autonomy | 3 |
| Biofuel | 3 |
| Blueprint | 3 |
| Boundary (topology) | 3 |
| Capacity building | 3 |
| Coherence (philosophical gambling strategy) | 3 |
| Conflict transformation | 3 |
| Conversation | 3 |
| Coproduction | 3 |
| Creativity | 3 |
| Deforestation (computer science) | 3 |
| Dependency (UML) | 3 |
| Development (topology) | 3 |
| Dialectic | 3 |
| Distribution (mathematics) | 3 |
| Diversification (marketing strategy) | 3 |
| Element (criminal law) | 3 |
| Empirical evidence | 3 |
| Energy consumption | 3 |
| Environmental law | 3 |
| Exploit | 3 |
| Extant taxon | 3 |
| Face (sociological concept) | 3 |
| Financial intermediary | 3 |
| Focus (optics) | 3 |
| Formative assessment | 3 |
| Frame (networking) | 3 |
| Green infrastructure | 3 |
| Heuristics | 3 |
| Inclusion (mineral) | 3 |
| Injustice | 3 |
| Institutional theory | 3 |
| Internet of Things | 3 |
| Knowledge production | 3 |
| Lagging | 3 |
| Logit | 3 |
| Maladaptation | 3 |
| Mindset | 3 |
| Neutrality | 3 |
| Outbreak | 3 |
| Path dependence | 3 |
| Phase (matter) | 3 |
| Phenomenon | 3 |
| Policy analysis | 3 |
| Premise | 3 |
| Procurement | 3 |
| Product (mathematics) | 3 |
| Profit (economics) | 3 |
| Public engagement | 3 |
| Public policy | 3 |
| Realm | 3 |
| Reciprocity (cultural anthropology) | 3 |
| Scaling | 3 |
| Scenario planning | 3 |
| Service (business) | 3 |
| Social dynamics | 3 |
| Social system | 3 |
| Sociocultural evolution | 3 |
| Sociology of scientific knowledge | 3 |
| Spatial planning | 3 |
| Tanzania | 3 |
| Theory of change | 3 |
| Thriving | 3 |
| Tipping point (physics) | 3 |
| Water resources | 3 |
| Acknowledgement | 2 |
| Action plan | 2 |
| Air quality index | 2 |
| Archetype | 2 |
| Best practice | 2 |
| Bibliometrics | 2 |
| Business ethics | 2 |
| Capital (architecture) | 2 |
| Catalysis | 2 |
| Character (mathematics) | 2 |
| Clean energy | 2 |
| Coevolution | 2 |
| Commodification | 2 |
| Community engagement | 2 |
| Comparative advantage | 2 |
| Comparative case | 2 |
| Competence (human resources) | 2 |
| Competitive advantage | 2 |
| Component (thermodynamics) | 2 |
| Composite number | 2 |
| Conceptual model | 2 |
| Conservation biology | 2 |
| Consistency (knowledge bases) | 2 |
| Consolidation (business) | 2 |
| Construct (python library) | 2 |
| CONTEST | 2 |
| Control (management) | 2 |
| Corporate social responsibility | 2 |
| Critical theory | 2 |
| Cybernetics | 2 |
| Dance | 2 |
| Demand side | 2 |
| Demographics | 2 |
| Dependability | 2 |
| Directive | 2 |
| Disaster risk reduction | 2 |
| Disconnection | 2 |
| Downstream (manufacturing) | 2 |
| Earth (classical element) | 2 |
| Ecological psychology | 2 |
| Emerging markets | 2 |
| Engineering design process | 2 |
| Environmental education | 2 |
| Environmental impact assessment | 2 |
| Environmental policy | 2 |
| Environmental stewardship | 2 |
| Excellence | 2 |
| Explanatory power | 2 |
| Exploratory research | 2 |
| Facilitation | 2 |
| Fishing | 2 |
| Food packaging | 2 |
| Food processing | 2 |
| Fragmentation (computing) | 2 |
| Globalization | 2 |
| Globe | 2 |
| GRASP | 2 |
| Grazing | 2 |
| Greening | 2 |
| Grid | 2 |
| Heuristic | 2 |
| Ideal (ethics) | 2 |
| Idealism | 2 |
| Impact assessment | 2 |
| Industrial policy | 2 |
| Industrial society | 2 |
| Industrialisation | 2 |
| Inequality | 2 |
| Information and Communications Technology | 2 |
| Ingenuity | 2 |
| Interpersonal ties | 2 |
| Intersectionality | 2 |
| Irrigation | 2 |
| Knowledge base | 2 |
| Language change | 2 |
| Leapfrogging | 2 |
| Local community | 2 |
| Macro | 2 |
| Malaria | 2 |
| Management system | 2 |
| Marketing management | 2 |
| Mediation | 2 |
| MEDLINE | 2 |
| Metaphor | 2 |
| Modal | 2 |
| Neighbourhood (mathematics) | 2 |
| Newspaper | 2 |
| Niche construction | 2 |
| Outcome (game theory) | 2 |
| Parallels | 2 |
| Participatory planning | 2 |
| Payment | 2 |
| Plan (archaeology) | 2 |
| Planet | 2 |
| Plea | 2 |
| Popularity | 2 |
| Pragmatism | 2 |
| Prioritization | 2 |
| Productivity | 2 |
| Prosperity | 2 |
| Public interest | 2 |
| Public transport | 2 |
| Rationality | 2 |
| Refugee | 2 |
| Reputation | 2 |
| Resource efficiency | 2 |
| Revenue | 2 |
| Rigour | 2 |
| Risk management | 2 |
| Safeguarding | 2 |
| Salience (neuroscience) | 2 |
| Salient | 2 |
| Science education | 2 |
| Science policy | 2 |
| Shock (circulatory) | 2 |
| Social group | 2 |
| Social media | 2 |
| Stock (firearms) | 2 |
| Strategic planning | 2 |
| Subsidy | 2 |
| Surface runoff | 2 |
| Surprise | 2 |
| Systems theory | 2 |
| Temporality | 2 |
| The arts | 2 |
| The Renaissance | 2 |
| Tragedy (event) | 2 |
| Trap (plumbing) | 2 |
| Treaty | 2 |
| TRIPS architecture | 2 |
| Urban landscape | 2 |
| Utopia | 2 |
| Value creation | 2 |
| Welfare | 2 |
| Work in process | 2 |
| Abstraction | 1 |
| Acceleration | 1 |
| Agent-based model | 1 |
| Alliance | 1 |
| Analogy | 1 |
| Analytic hierarchy process | 1 |
| Aotearoa | 1 |
| Appeal | 1 |
| Appropriation | 1 |
| Archipelago | 1 |
| Argumentation theory | 1 |
| Artificial neural network | 1 |
| Attractor | 1 |
| Autoethnography | 1 |
| Balanced scorecard | 1 |
| Baltic sea | 1 |
| Basic income | 1 |
| Bespoke | 1 |
| Biobank | 1 |
| Biodegradable plastic | 1 |
| Biogas | 1 |
| Biologist | 1 |
| Blame | 1 |
| Blank | 1 |
| Block (permutation group theory) | 1 |
| Blockchain | 1 |
| Bounded function | 1 |
| Bounded rationality | 1 |
| Bricolage | 1 |
| Bridge (graph theory) | 1 |
| Business case | 1 |
| Business ecosystem | 1 |
| Butterfly | 1 |
| Capability approach | 1 |
| Cape | 1 |
| Car sharing | 1 |
| Causal model | 1 |
| Causality (physics) | 1 |
| Ceiling (cloud) | 1 |
| Centrality | 1 |
| Chaotic | 1 |
| Chart | 1 |
| Chemical industry | 1 |
| Christian ministry | 1 |
| Citation | 1 |
| Classifier (UML) | 1 |
| Clean technology | 1 |
| Closing (real estate) | 1 |
| Clothing | 1 |
| Cloud computing | 1 |
| Co-creation | 1 |
| Coal | 1 |
| Coding (social sciences) | 1 |
| Cognition | 1 |
| Collaborative learning | 1 |
| Commercialism | 1 |
| Commodity | 1 |
| Comparability | 1 |
| Complex system | 1 |
| Complexity management | 1 |
| Compromise | 1 |
| Computable general equilibrium | 1 |
| Conflation | 1 |
| Conflict resolution | 1 |
| Consciousness | 1 |
| Consciousness raising | 1 |
| Constellation | 1 |
| Constitution | 1 |
| Content analysis | 1 |
| Contradiction | 1 |
| Core (optical fiber) | 1 |
| Craft | 1 |
| Creative destruction | 1 |
| Crisis management | 1 |
| Crisis response | 1 |
| Critical infrastructure | 1 |
| Critical reflection | 1 |
| Criticism | 1 |
| Crop protection | 1 |
| Cultural psychology | 1 |
| Cultural values | 1 |
| Curiosity | 1 |
| Curriculum | 1 |
| Data-driven | 1 |
| Decentralization | 1 |
| Decision tree | 1 |
| Declaration | 1 |
| Developing country | 1 |
| Dialog box | 1 |
| Dialogical self | 1 |
| Dichotomy | 1 |
| Diffusion | 1 |
| Dilemma | 1 |
| Disadvantaged | 1 |
| Discrete choice | 1 |
| Disruptive innovation | 1 |
| Distance decay | 1 |
| Divergence (linguistics) | 1 |
| Division of labour | 1 |
| Documentation | 1 |
| Domestic market | 1 |
| DPSIR | 1 |
| Drone | 1 |
| Duration (music) | 1 |
| Dynamic capabilities | 1 |
| Dynamism | 1 |
| E-commerce | 1 |
| Ecological crisis | 1 |
| Ecological engineering | 1 |
| Economic recovery | 1 |
| Economic rent | 1 |
| Electronic waste | 1 |
| Embodied cognition | 1 |
| Enabling | 1 |
| Energy conservation | 1 |
| Energy demand | 1 |
| Energy sector | 1 |
| Enforcement | 1 |
| Environmental crisis | 1 |
| Environmental restoration | 1 |
| Estonian | 1 |
| European union | 1 |
| Event (particle physics) | 1 |
| Everyday life | 1 |
| Evolutionary economics | 1 |
| Evolutionary psychology | 1 |
| Evolutionary theory | 1 |
| Experiential knowledge | 1 |
| Explanatory model | 1 |
| Exposition (narrative) | 1 |
| Expression (computer science) | 1 |
| Extended producer responsibility | 1 |
| Externality | 1 |
| Extinction (optical mineralogy) | 1 |
| Facilitator | 1 |
| Factory (object-oriented programming) | 1 |
| Fidelity | 1 |
| Financialization | 1 |
| Fish | 1 |
| Flemish | 1 |
| Flood myth | 1 |
| Flourishing | 1 |
| Foregrounding | 1 |
| Forest management | 1 |
| Fragility | 1 |
| Frontier | 1 |
| Fuel cells | 1 |
| Genetic testing | 1 |
| Germination | 1 |
| Glass ceiling | 1 |
| Glyphosate | 1 |
| Gold mining | 1 |
| Goods and services | 1 |
| Graph | 1 |
| Great Rift | 1 |
| Gross domestic product | 1 |
| Groundwater | 1 |
| Honor | 1 |
| Horizontal and vertical | 1 |
| Human capital | 1 |
| Human geography | 1 |
| Human resources | 1 |
| Human values | 1 |
| Hydropower | 1 |
| Hygiene | 1 |
| Hyperparameter | 1 |
| Ideal type | 1 |
| Ignorance | 1 |
| Image (mathematics) | 1 |
| Immediacy | 1 |
| Impossibility | 1 |
| Individual mobility | 1 |
| Individualism | 1 |
| Industrial and production engineering | 1 |
| Inertia | 1 |
| Informal sector | 1 |
| Information flow | 1 |
| Information technology | 1 |
| Innovation diffusion | 1 |
| Innovation management | 1 |
| Institution | 1 |
| Institutional economics | 1 |
| Institutional logic | 1 |
| Integrated pest management | 1 |
| Intellectual property | 1 |
| Interconnectivity | 1 |
| Intercropping | 1 |
| Interdisciplinarity | 1 |
| International Action | 1 |
| Interpersonal communication | 1 |
| Intersection (aeronautics) | 1 |
| Jargon | 1 |
| Knowledge engineering | 1 |
| Knowledge-based systems | 1 |
| Landscape design | 1 |
| Lead (geology) | 1 |
| Legal research | 1 |
| Liberalization | 1 |
| Life course approach | 1 |
| Lift (data mining) | 1 |
| Linearity | 1 |
| Listing (finance) | 1 |
| Lithium (medication) | 1 |
| Living systems | 1 |
| Local Development | 1 |
| Lock (firearm) | 1 |
| Looming | 1 |
| Marine conservation | 1 |
| Marine research | 1 |
| Marine spatial planning | 1 |
| Matching (statistics) | 1 |
| Material flow | 1 |
| Material flow analysis | 1 |
| Materialism | 1 |
| Materiality (auditing) | 1 |
| Maturity (psychological) | 1 |
| Maya | 1 |
| Measure (data warehouse) | 1 |
| Medical equipment | 1 |
| Membrane | 1 |
| Merge (version control) | 1 |
| Mesoamerica | 1 |
| Mesopotamia | 1 |
| Methodological individualism | 1 |
| Miami | 1 |
| Microfoundations | 1 |
| Miller | 1 |
| Mindfulness | 1 |
| Modalities | 1 |
| Mode (computer interface) | 1 |
| Modernity | 1 |
| Moral imperative | 1 |
| Moral responsibility | 1 |
| Movement (music) | 1 |
| Multinomial logistic regression | 1 |
| Multitude | 1 |
| Musical | 1 |
| National innovation system | 1 |
| Natural disaster | 1 |
| Natural gas | 1 |
| Natural hazard | 1 |
| Neglect | 1 |
| Neoliberalism (international relations) | 1 |
| Network effect | 1 |
| Niche market | 1 |
| Norm (philosophy) | 1 |
| Normal science | 1 |
| North west | 1 |
| Nothing | 1 |
| Nuclear power | 1 |
| Nuclear power plant | 1 |
| Objectivity (philosophy) | 1 |
| Open innovation | 1 |
| Opportunism | 1 |
| Optimism | 1 |
| Orthodoxy | 1 |
| Outreach | 1 |
| Passenger transport | 1 |
| Path (computing) | 1 |
| Peasant | 1 |
| Peninsula | 1 |
| Period (music) | 1 |
| Personality | 1 |
| Photovoltaic system | 1 |
| Pluvial | 1 |
| Point (geometry) | 1 |
| Policy Sciences | 1 |
| Pollution | 1 |
| Pooling | 1 |
| Port (circuit theory) | 1 |
| Portfolio | 1 |
| Posthumanism | 1 |
| Postmodernism | 1 |
| Practice theory | 1 |
| Precipitation | 1 |
| Predictive maintenance | 1 |
| Preference | 1 |
| Presumption | 1 |
| Private sector | 1 |
| Professionalization | 1 |
| Profitability index | 1 |
| Pronoun | 1 |
| Property (philosophy) | 1 |
| Provisioning | 1 |
| Prudence | 1 |
| Psychosocial | 1 |
| Public participation | 1 |
| Public service | 1 |
| Public space | 1 |
| Publishing | 1 |
| Punctuated equilibrium | 1 |
| Qualitative property | 1 |
| Rainwater harvesting | 1 |
| Ranking (information retrieval) | 1 |
| Raw material | 1 |
| Reading (process) | 1 |
| Realism | 1 |
| Redress | 1 |
| Reductionism | 1 |
| Redundancy (engineering) | 1 |
| Reference model | 1 |
| Relocation | 1 |
| Reproduction | 1 |
| Resource allocation | 1 |
| Responsible Research and Innovation | 1 |
| Restoration ecology | 1 |
| Reuse | 1 |
| Rhetoric | 1 |
| Rhythm | 1 |
| Rope | 1 |
| Rural area | 1 |
| Sample (material) | 1 |
| Sanctions | 1 |
| Scalability | 1 |
| Scheme (mathematics) | 1 |
| Secondary sector of the economy | 1 |
| Sect | 1 |
| Selection (genetic algorithm) | 1 |
| Sequence (biology) | 1 |
| Skills management | 1 |
| Smart grid | 1 |
| Social business | 1 |
| Social connectedness | 1 |
| Social equality | 1 |
| Social impact assessment | 1 |
| Social innovation | 1 |
| Social institution | 1 |
| Social justice | 1 |
| Social marketing | 1 |
| Social mobility | 1 |
| Social relation | 1 |
| Social responsibility | 1 |
| Social security | 1 |
| Social theory | 1 |
| Social work | 1 |
| Socioeconomic development | 1 |
| Software | 1 |
| Solar energy | 1 |
| sort | 1 |
| SPARK (programming language) | 1 |
| Spatial ecology | 1 |
| Spatial heterogeneity | 1 |
| Spatial organization | 1 |
| Spatial variability | 1 |
| Special section | 1 |
| SPHERES | 1 |
| Stability (learning theory) | 1 |
| Structural equation modeling | 1 |
| Structuration theory | 1 |
| Subject (documents) | 1 |
| Subjectification | 1 |
| Substitution (logic) | 1 |
| Summit | 1 |
| Superordinate goals | 1 |
| Support vector machine | 1 |
| Swarm behaviour | 1 |
| Tariff | 1 |
| Task (project management) | 1 |
| Teaching method | 1 |
| Technology policy | 1 |
| Temporalities | 1 |
| Textile | 1 |
| The Internet | 1 |
| Thematic map | 1 |
| Theory of the firm | 1 |
| Thermal | 1 |
| Timeline | 1 |
| Toolbox | 1 |
| Top-down and bottom-up design | 1 |
| Traceability | 1 |
| Tracing | 1 |
| Tracking (education) | 1 |
| Trajectory | 1 |
| Transaction cost | 1 |
| Transitive relation | 1 |
| Transport system | 1 |
| Travel behavior | 1 |
| Trilogy | 1 |
| Trojan horse | 1 |
| Turbine | 1 |
| Unit (ring theory) | 1 |
| Urban agglomeration | 1 |
| Usability | 1 |
| Valuation (finance) | 1 |
| Value proposition | 1 |
| Variable (mathematics) | 1 |
| Variables | 1 |
| Vegetation (pathology) | 1 |
| Virtue | 1 |
| Warning system | 1 |
| Warrant | 1 |
| Wastewater | 1 |
| Water diversion | 1 |
| Water energy | 1 |
| Water quality | 1 |
| Watershed | 1 |
| Watson | 1 |
| West germany | 1 |
| West virginia | 1 |
| Wetland | 1 |
| Wildlife | 1 |
| Wildness | 1 |
| Wind power | 1 |
| Window (computing) | 1 |
| Wine | 1 |
| Wonder | 1 |
| Workforce | 1 |
| Zoning | 1 |

#### 2.1.4.4 Level 3

lapply(  
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 x[["display\_name"]][x[["level"]] == 3]  
 }  
) |>  
 unlist() |>  
 table() |>  
 sort(decreasing = TRUE) |>  
 knitr::kable()

| Var1 | Freq |
| --- | --- |
| Transition (genetics) | 111 |
| Transition management (governance) | 54 |
| Food security | 50 |
| Panacea (medicine) | 49 |
| Social sustainability | 47 |
| Transformation (genetics) | 40 |
| Sustainability organizations | 30 |
| Environmental governance | 22 |
| Sustainable agriculture | 22 |
| Grassroots | 20 |
| Democracy | 19 |
| Legitimacy | 19 |
| Civil society | 15 |
| Collective action | 15 |
| Infectious disease (medical specialty) | 15 |
| Livelihood | 15 |
| Climate governance | 13 |
| Urban sustainability | 13 |
| Adaptive capacity | 12 |
| Agroecology | 11 |
| Ecosystem services | 10 |
| Social transformation | 10 |
| Urban resilience | 10 |
| Stewardship (theology) | 9 |
| Climate change adaptation | 8 |
| Energy system | 8 |
| Political ecology | 8 |
| Technocracy | 8 |
| Climate change mitigation | 7 |
| Energy policy | 7 |
| Environmental change | 7 |
| Multi-level governance | 7 |
| Promotion (chess) | 7 |
| Sustainable consumption | 7 |
| Thematic analysis | 7 |
| Agrarian society | 6 |
| Landscape ecology | 6 |
| Backcasting | 5 |
| Deliberation | 5 |
| Ecological niche | 5 |
| Originality | 5 |
| Solidarity | 5 |
| Sustainable business | 5 |
| Capitalism | 4 |
| Collaborative governance | 4 |
| Constructive | 4 |
| Degrowth | 4 |
| Dominance (genetics) | 4 |
| Geopolitics | 4 |
| Global governance | 4 |
| Hegemony | 4 |
| Investment (military) | 4 |
| Mainstreaming | 4 |
| Planetary boundaries | 4 |
| Social movement | 4 |
| Socioeconomic status | 4 |
| Through-the-lens metering | 4 |
| Urban density | 4 |
| 2019-20 coronavirus outbreak | 3 |
| Boundary object | 3 |
| Emancipation | 3 |
| Environmental politics | 3 |
| Global warming | 3 |
| Health policy | 3 |
| Ideology | 3 |
| Network governance | 3 |
| Opposition (politics) | 3 |
| Pastoralism | 3 |
| Political economy of climate change | 3 |
| Product-service system | 3 |
| Smart city | 3 |
| Social network analysis | 3 |
| Sustainable energy | 3 |
| Technological innovation system | 3 |
| Transferability | 3 |
| Value chain | 3 |
| Articulation (sociology) | 2 |
| Beijing | 2 |
| Biodiversity conservation | 2 |
| Business process | 2 |
| Carbon fibers | 2 |
| Causal loop diagram | 2 |
| Citizenship | 2 |
| Climate justice | 2 |
| Climate policy | 2 |
| Collective identity | 2 |
| Conservation psychology | 2 |
| Convention on Biological Diversity | 2 |
| Corporate sustainability | 2 |
| Destinations | 2 |
| Downscaling | 2 |
| Ecological economics | 2 |
| Ecological footprint | 2 |
| Ecological modernization | 2 |
| Ecological resilience | 2 |
| Ecosystem-based management | 2 |
| Electronic business | 2 |
| Elite | 2 |
| Energy law | 2 |
| Energy security | 2 |
| Global change | 2 |
| Global value chain | 2 |
| Health promotion | 2 |
| Knowledge creation | 2 |
| Las vegas | 2 |
| Legitimation | 2 |
| Natural resource management | 2 |
| Phenotype | 2 |
| Phoenix | 2 |
| Polity | 2 |
| Project governance | 2 |
| Qualitative analysis | 2 |
| Rebound effect (conservation) | 2 |
| Regime shift | 2 |
| Regulatory state | 2 |
| Representation (politics) | 2 |
| Scopus | 2 |
| Settlement (finance) | 2 |
| Social identity theory | 2 |
| Social network (sociolinguistics) | 2 |
| Socio-ecological system | 2 |
| Stakeholder analysis | 2 |
| Stakeholder theory | 2 |
| Stormwater | 2 |
| Sustainable Agriculture Innovation Network | 2 |
| Sustainable production | 2 |
| Sustainable transport | 2 |
| Sustainable Value | 2 |
| Systemic risk | 2 |
| Threatened species | 2 |
| Transnational governance | 2 |
| Urban ecosystem | 2 |
| Urbanism | 2 |
| Value network | 2 |
| Water scarcity | 2 |
| Welfare state | 2 |
| Agribusiness | 1 |
| Agricultural biodiversity | 1 |
| Agricultural diversification | 1 |
| Agricultural productivity | 1 |
| Aquaculture | 1 |
| Aquifer | 1 |
| Austerity | 1 |
| Behaviour change | 1 |
| Betweenness centrality | 1 |
| Big Five personality traits | 1 |
| Biodiesel | 1 |
| Bioenergy | 1 |
| Biome | 1 |
| Bioproducts | 1 |
| Biorefinery | 1 |
| Bureaucracy | 1 |
| Business analysis | 1 |
| Business value | 1 |
| Carbon footprint | 1 |
| Chimera (genetics) | 1 |
| Choreography | 1 |
| Citation analysis | 1 |
| Climate Finance | 1 |
| Climate model | 1 |
| Climate risk | 1 |
| Climate science | 1 |
| Community forestry | 1 |
| Community resilience | 1 |
| Conditionality | 1 |
| Conservation science | 1 |
| Contextualization | 1 |
| Cooperative learning | 1 |
| Critical realism (philosophy of perception) | 1 |
| Cultural geography | 1 |
| Desalination | 1 |
| Distributive justice | 1 |
| Dormancy | 1 |
| Duopoly | 1 |
| Eco-innovation | 1 |
| Economic governance | 1 |
| Economic interventionism | 1 |
| Economic shortage | 1 |
| Ecosystem management | 1 |
| Education for sustainable development | 1 |
| Egalitarianism | 1 |
| Electricity generation | 1 |
| Electrification | 1 |
| Energy engineering | 1 |
| Energy intensity | 1 |
| Energy management | 1 |
| Energy planning | 1 |
| Energy storage | 1 |
| Energy supply | 1 |
| Environmental management system | 1 |
| Environmental Sustainability Index | 1 |
| Environmentalism | 1 |
| Epistemic virtue | 1 |
| Erasmus+ | 1 |
| Exploitation of natural resources | 1 |
| Extreme weather | 1 |
| Fashion industry | 1 |
| Fast fashion | 1 |
| Fishing industry | 1 |
| Food sector | 1 |
| Fukushima Nuclear Accident | 1 |
| Global health | 1 |
| Governmentality | 1 |
| Green economy | 1 |
| Health equity | 1 |
| Health security | 1 |
| Healthcare system | 1 |
| Historical geography | 1 |
| Human genetics | 1 |
| Hydrogen fuel | 1 |
| Industrial ecology | 1 |
| Integrated water resources management | 1 |
| Intergenerational equity | 1 |
| Intrapersonal communication | 1 |
| Ionic liquid | 1 |
| Knowledge integration | 1 |
| Kyoto Protocol | 1 |
| Land cover | 1 |
| Land grabbing | 1 |
| Land management | 1 |
| Land use, land-use change and forestry | 1 |
| Learning sciences | 1 |
| Legal realism | 1 |
| Life-cycle assessment | 1 |
| Linkage (software) | 1 |
| Mains electricity | 1 |
| Marine protected area | 1 |
| Marketization | 1 |
| Medical genetics | 1 |
| Millennium Development Goals | 1 |
| Modal shift | 1 |
| New england | 1 |
| Non-renewable resource | 1 |
| Normative social influence | 1 |
| Nuclear disaster | 1 |
| Orchestration | 1 |
| Organic farming | 1 |
| Overfishing | 1 |
| Overgrazing | 1 |
| Photovoltaics | 1 |
| Plasmodium falciparum | 1 |
| Population growth | 1 |
| Project commissioning | 1 |
| Prosumer | 1 |
| Quality assurance | 1 |
| Random graph | 1 |
| Redistribution (election) | 1 |
| Relationship marketing | 1 |
| Renewable fuels | 1 |
| Requirements engineering | 1 |
| Resource curse | 1 |
| Resource recovery | 1 |
| Return on marketing investment | 1 |
| Right to the city | 1 |
| Risk governance | 1 |
| Risk perception | 1 |
| Rurality | 1 |
| Seagrass | 1 |
| Service provider | 1 |
| Social activism | 1 |
| Social conflict | 1 |
| Social determinants of health | 1 |
| Social injustice | 1 |
| Social reproduction | 1 |
| Social vulnerability | 1 |
| Sovereignty | 1 |
| Strategic environmental assessment | 1 |
| Strategic financial management | 1 |
| Supply chain management | 1 |
| Sustainability reporting | 1 |
| Sustainable design | 1 |
| Sustainable management | 1 |
| Sustainable society | 1 |
| Sustainable tourism | 1 |
| Traditional knowledge | 1 |
| Transcription factor | 1 |
| Urban agriculture | 1 |
| Urban climate | 1 |
| Urban design | 1 |
| Urban greening | 1 |
| Urban politics | 1 |
| Virtue ethics | 1 |
| Vitalism | 1 |
| Water infrastructure | 1 |
| Water sector | 1 |
| Welfare reform | 1 |