

การใช้งานเว็บแอปพลิเคชันจับคู่คำค้น (Keyphrases) โดยใช้ข้อความ (Text) เพื่อประเมินเนื้อหางานวิชาการ และสนับสนุนการเผยแพร่ผลงานวิชาการที่สอดคล้องกับ SDGs

1. การใช้งานแอปพลิเคชัน

ผู้ใช้สามารถเริ่มใช้งานแอปพลิเคชันเว็บเบราว์เซอร์ได้โดย Login ผ่าน CMU Account ผ่านเว็บไซต์ <https://sdgskeywords.ora.oou.cmu.ac.th> ทั้งนี้ผู้จัดทำแนะนำให้ใช้งานบนเว็บเบราว์เซอร์ Google Chrome, Microsoft Edge หรือ Apple Safari เพื่อลดปัญหาความเข้ากันได้ของเว็บเบราว์เซอร์

2. การป้อนข้อมูล

เมื่อเริ่มต้นใช้งานแอปพลิเคชัน จะอยู่ในโหมดการป้อนข้อมูล ให้ผู้ใช้ป้อนข้อมูลของผลงานที่ต้องการจับคู่คำค้นลงในฟอร์มทางฝั่งซ้ายมือของหน้าจอ จากนั้นให้กดปุ่ม Submit โดยตัวอย่างการป้อนข้อมูลได้แสดงไว้ตามรูปที่ 1

The screenshot shows a web form with the following sections:

- Title:** A text input field containing "Basic income, wealth inequality and welfare: A proposed case in New Zealand".
- Abstract:** A larger text area containing a paragraph of text about Universal Basic Income (UBI) in New Zealand.
- Keywords:** A text input field containing "Universal basic income, Gini coefficients, Heterogeneous-agent macroeconomic models, Incomplete market models, sobriety test".
- Submit:** A prominent blue button at the bottom of the form.

รูปที่ 1 ตัวอย่างการป้อนข้อมูลผลงาน

3. การอ่านผล

เมื่อกด Submit แอปพลิเคชันจะใช้เวลาประมาณ 5-10 วินาทีในการประมวลผลการจับคู่คำค้น จากนั้นแอปพลิเคชันจะเข้าสู่โหมดการแสดงผลลัพธ์ตามตัวอย่างในรูปที่ 2 จากในรูปบริเวณขวาบนของหน้าจอ จะอ่านผลได้ว่าผลงานนี้ผ่านเกณฑ์ SDG1, SDG3 และ SDG11 จะแสดงผลเครื่องหมายเช็คถูกที่ทำยพร้อมทั้งแสดงผลค่าความคล้ายที่ด้านหน้าชื่อของ SDG นั้น ๆ ผู้ใช้สามารถเลือกดูผลการเปรียบเทียบคำค้นที่ใกล้เคียง โดยการกดที่ชื่อ SDG ที่ต้องการได้ นอกจากนี้ผู้ใช้สามารถกดปุ่ม Back เพื่อย้อนกลับไปแก้ไขผลงาน กดปุ่ม ลูกศรขึ้นเพื่อเลื่อนกลับมายังด้านบทสุดของโปรแกรม และกดปุ่มลูกศรซ้ายหรือลูกศรขวาเพื่อเลื่อนผลการเปรียบเทียบ

Title

Basic **income**, **wealth inequality** and **welfare**: A proposed case in New Zealand

Abstract

Universal basic **income** (UBI) may be defined as a government **programme** that regularly distributes a set amount of **income** to every citizen. While many countries currently adopt need-based **programmes**, the idea of introducing a UBI **programme** has been discussed politically in several countries. For instance, The Opportunity Party in New Zealand proposed paying NZ\$13,000 per year to every adult citizen as basic **income**. Unless the amount of transfer per person decreases under the new **programme**, the government will have to increase tax rates. If a difference exists in labour supply and saving responses to the increases in tax rates among households, **wealth distribution** will change. This study examines the details of the proposed UBI **programme** and demonstrates that it will increase **wealth inequality** across households and decrease the **welfare** of different types of households classified by **wage** level, gini coefficient, pedestrian safety, internet-based **learning** environment and mobile device.

Keywords

Universal basic **income**, **Gini coefficient**s, Heterogeneous-agent macro **economic** models, Incomplete market models, sobriety test

Back

[19] SDG01 ✓ [19] SDG02 [2] SDG03 ✓ [11] SDG04 [15] SDG05 [22] SDG07

[6] SDG09 [7] SDG11 ✓ [3] SDG13

```
(
  (
    (
      TITLE-ABS("unesco") AND TITLE-ABS("poverty") AND TITLE-ABS(" program")
    )
    OR
    (
      AUTHKEY("unesco") AND AUTHKEY("poverty") AND AUTHKEY(" program")
    )
    OR
    (
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    )
    OR
    (
      AUTHKEY("poverty*-reducing* polic**") OR AUTHKEY("povertyreducing* polic**")
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    OR
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      TITLE-ABS("foreign aid") AND TITLE-ABS("poverty")
    )
    OR
    (
      AUTHKEY("foreign aid") AND AUTHKEY("poverty")
    )
    OR
    (
      TITLE-ABS("united nations") AND TITLE-ABS("poverty") AND TITLE-ABS(" program")
    )
  )
  OR
  (
```

↑ ← →

รูปที่ 2 ตัวอย่างผลการจับคู่คำค้น

4. การใช้เพื่อการวางแผนเผยแพร่ผลงานให้เข้าตามเกณฑ์ SDG

จากตัวอย่างผลการจับคู่คำค้นในรูปที่ 2 ผู้ใช้งานจะทราบแล้วว่าผลงานดังกล่าวผ่านเกณฑ์ SDG1, SDG3 และ SDG11 หากผู้ใช้ต้องการคำแนะนำในการปรับปรุงผลงานเพื่อให้เข้าเกณฑ์ SDG4 ด้วย สามารถทำได้โดยกดเลือกแถบ SDG4 เพื่อดูคำค้นที่มีความใกล้เคียง จากตัวอย่างคำค้นใกล้เคียงของ SDG4 ตามรูปที่ 3 ในกลุ่มของ Query แรกสุดอ่านผลว่า ผลงานดังกล่าวขยายคำว่า “School” ในหัวข้อหรือในบทคัดย่อ หรือขยายคำว่า “student” ในหัวข้อหรือในบทคัดย่อ ดังนั้นหากผู้ใช้ปรับปรุงผลงานของตนเองตามคำแนะนำแล้ว จะได้ผลลัพธ์การจับคู่คำค้นที่ผ่านเกณฑ์ SDG4 ตามตัวอย่างในรูปที่ 4 ซึ่งมีเครื่องหมายเช็คถูกท้าย SDG4

Title
Basic income, wealth **inequality** and welfare: A proposed case in New Zealand

Abstract
Universal basic income (UBI) may be defined as a government **program** me that regularly distributes a set amount of income to every citizen. While many countries currently adopt need-based **program** mes, the idea of introducing a UBI **program** me has been discussed politically in several countries. For instance, The Opportunity Party in New Zealand proposed paying NZ\$13,000 per year to every adult citizen as basic income. Unless the amount of transfer per person decreases under the new **program** me, the government will have to **increase** tax rates. If a difference exists in labour supply and saving responses to the **increase** s in tax rates among households, wealth distribution will change. This study examines the details of the proposed UBI **program** me and demonstrates that it will **increase** wealth **inequality** across households and decrease the welfare of different types of households classified by wage level, gini coefficient, pedestrian safety, **internet-based learning environment** and mobile device.

Keywords
Universal basic income, Gini coefficients, Heterogeneous-agent macroeconomic models, Incomplete market models, sobriety test

Back

[19] SDG01 ✓ [19] SDG02 [2] SDG03 ✓ [11] SDG04 [15] SDG05 [22] SDG07
[6] SDG09 [7] SDG11 ✓ [3] SDG13

```
(
  (
    (
      ((TITLE-ABS("school") OR TITLE-ABS("student*)) AND TITLE-ABS("internet-based learning environment")) OR ((TITLE-ABS("school") OR TITLE-ABS("student*)) AND TITLE-ABS("internetbased learning environment"))
    )
    OR
    (
      ((AUTHKEY("school") OR AUTHKEY("student*)) AND AUTHKEY("internet-based learning environment")) OR ((AUTHKEY("school") OR AUTHKEY("student*)) AND AUTHKEY("internetbased learning environment"))
    )
  )
  OR
  (
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  )
  OR
  (
    AUTHKEY("web*-based* learning* system*") OR AUTHKEY("webbased* learning* system*")
  )
  OR
  (
    TITLE-ABS("child-friendly schools") OR TITLE-ABS("childfriendly schools")
  )
  OR
  (
    AUTHKEY("child-friendly schools") OR AUTHKEY("childfriendly schools")
  )
)
```

รูปที่ 3 ตัวอย่างผลงานก่อนปรับปรุงเพื่อให้เข้าเกณฑ์ SDG4

Title
Basic income, wealth **inequality** and welfare: A proposed case in New Zealand

Abstract
Universal basic income (UBI) may be defined as a government **program** me that regularly distributes a set amount of income to every citizen. While many countries currently adopt need-based **program** mes, the idea of introducing a UBI **program** me has been discussed politically in several countries. For instance, The Opportunity Party in New Zealand proposed paying NZ\$13,000 per year to every adult citizen as basic income. Unless the amount of transfer per person decreases under the new **program** me, the government will have to **increase** tax rates. If a difference exists in labour supply and saving responses to the **increase** s in tax rates among households, wealth distribution will change. This study examines the details of the proposed UBI **program** me and demonstrates that it will **increase** wealth **inequality** across households and decrease the welfare of different types of households classified by wage level, gini coefficient, pedestrian safety, **internet-based learning environment** and mobile device in **school** areas.

Keywords
Universal basic income, Gini coefficients, Heterogeneous-agent macroeconomic models, Incomplete market models, sobriety test

Back

[19] SDG01 ✓ [19] SDG02 [2] SDG03 ✓ [12] SDG04 ✓ [16] SDG05
[22] SDG07 [7] SDG09 [7] SDG11 ✓ [3] SDG13

```
(
  (
    (
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    )
    OR
    (
      ((AUTHKEY(" school") OR AUTHKEY("student*)) AND AUTHKEY("internet-based learning environment")) OR ((AUTHKEY(" school") OR AUTHKEY("student*)) AND AUTHKEY("internetbased learning environment"))
    )
  )
  OR
  (
    TITLE-ABS("web*-based* learning* system*") OR TITLE-ABS("webbased* learning* system*")
  )
  OR
  (
    AUTHKEY("web*-based* learning* system*") OR AUTHKEY("webbased* learning* system*")
  )
  OR
  (
    TITLE-ABS("child-friendly school*s") OR TITLE-ABS("childfriendly school*s")
  )
  OR
  (
    AUTHKEY("child-friendly school*s") OR AUTHKEY("childfriendly school*s")
  )
)
```

รูปที่ 4 ตัวอย่างผลงานหลังปรับปรุงเพื่อให้เข้าเกณฑ์ SDG4

คำสำคัญ 100 อันดับแรก (Top 100 Keywords)

เป็นคำสำคัญจากงานผลงานทางวิชาการที่ได้รับการเผยแพร่ในฐานข้อมูล Scopus ซึ่งแบ่งตาม The United Nations Sustainable Development Goals (SDGs) ทั้ง 16 SDGs ดังนี้

- SDG 1: No Poverty
- SDG 2: Zero Hunger
- SDG 3: Good Health and Well Being
- SDG 4: Quality Education
- SDG 5: Gender Equality
- SDG 6: Clean Water and Sanitation
- SDG 7: Affordable and Clean Energy
- SDG 8: Decent Work and Economic Growth
- SDG 9: Industry, Innovation and Infrastructure
- SDG 10: Reduced Inequality
- SDG 11: Sustainable Cities and Communities
- SDG 12: Responsible Consumption and Production
- SDG 13: Climate Action
- SDG 14: Life Below Water
- SDG 15: Life on Land
- SDG 16: Peace Justice and Strong Institution

โดยแสดงข้อมูล 2 ส่วน ดังนี้

1. ตารางแสดงความถี่คำสำคัญ (Keywords) 100 อันดับแรก โดยความถี่เรียงตามคำสำคัญมากที่สุดในแต่ละ SDGs

2. ข้อมูลด้วยรูปภาพ (Word cloud) ซึ่งเป็นการแสดงข้อมูลด้วยรูปภาพ สำหรับการประมวลผลข้อความ ซึ่งจะแสดงคำที่การปรากฏมีความถี่มากด้วยตัวอักษรที่ใหญ่กว่าและชัดเจนกว่า

ทั้งนี้ คำสำคัญที่จะแสดงในตารางที่ 1-16 นั้น จะช่วยให้การตีพิมพ์บทความในฐานข้อมูล Scopus ปรากฏในแต่ละ SDGs มากยิ่งขึ้น แต่ไม่ได้หมายความว่า การเลือกใช้คำสำคัญนั้นๆ จะปรากฏในฐาน Scopus แต่ละ SDGs เสมอไป เนื่องจากยังมีเงื่อนไขอีกหลายรูปแบบ ดังนั้น มหาวิทยาลัยจึงได้พัฒนาเว็บแอปพลิเคชัน เพื่อเป็นตัวช่วยตีพิมพ์ในฐาน Scopus และปรากฏใน SDGs อีกทั้ง ยังสามารถช่วยแนะนำให้ผู้ใช้งานปรับแก้ไข บทความเพื่อให้เข้าเกณฑ์ SDG ที่ต้องการ ดังเว็บไซต์ <https://sdgskeywords.ora.oou.cmu.ac.th> (การใช้งานแสดงรายละเอียดในเอกสารแนบท้ายคู่มือ 2)

1. SDG 1: No Poverty

ตารางที่ 1 คำสำคัญ 100 อันดับแรกของ SDG 1: No Poverty

Rank	Term	Number of papers with this term in all of Scopus
1	poverty	60721
2	health insurance	60,721

Rank	Term	Number of papers with this term in all of Scopus
3	unemployment	35,317
4	wage	28,520
5	alleviation	23,269
6	inequality.	17,559
7	labour market	16,828
8	insecurity	16,507
9	labor market	15,836
10	incomes	15,185
11	and welfare	15,158
12	social welfare	14,915
13	livelihoods	13,598
14	household income	12,738
15	unemployed	12,288
16	livelihood	12,115
17	social security	11,896
18	low income	11,893
19	pension	10,415
20	poverty.	9,888
21	social policy	9,325
22	development goals	8,954
23	world bank	8,362
24	insurance coverage	7,758
25	household survey	7,363
26	inequities	7,206
27	homelessness	7,021
28	the labour market	6,824
29	welfare state	6,715
30	social exclusion	6,689
31	income inequality	6,507
32	uninsured	6,465
33	the labor market	6,419
34	inequity	5,939
35	access to health care	5,634
36	food insecurity	5,545
37	the world bank	5,537

Rank	Term	Number of papers with this term in all of Scopus
38	health inequalities	5,466
39	care act	5,442
40	income distribution	5,075
41	gini	4,981
42	and unemployment	4,949
43	the poverty	4,618
44	affordable care	4,597
45	private health	4,589
46	affordable care act	4,463
47	poverty reduction	4,462
48	millennium development	4,457
49	out-of-pocket	4,417
50	unemployment.	4,373
51	insurance status	4,111
52	social inequalities	4,107
53	pensions	4,022
54	social inequality	4,007
55	income tax	3,918
56	living standards	3,842
57	employment opportunities	3,821
58	unemployment rate	3,815
59	private insurance	3,810
60	labor markets	3,705
61	poverty alleviation	3,552
62	millennium development goals	3,523
63	per capita income	3,458
64	safety net	3,390
65	gender inequality	3,356
66	borrowers	3,322
67	income levels	3,316
68	labour markets	3,306
69	economic resources	3,222
70	rural households	3,219
71	insecurity.	3,206
72	care access	3,135

Rank	Term	Number of papers with this term in all of Scopus
73	social policies	3,124
74	insurance system	3,100
75	universal health	3,057
76	social protection	3,039
77	the unemployment	2,976
78	labor supply	2,957
79	the affordable care act	2,922
80	the welfare state	2,920
81	social welfare.	2,914
82	household surveys	2,879
83	health insurance coverage	2,846
84	remittances	2,815
85	social insurance	2,722
86	redistributive	2,682
87	force participation	2,665
88	low-income families	2,664
89	welfare system	2,618
90	microfinance	2,607
91	health reform	2,590
92	market access	2,573
93	entitlements	2,568
94	access to water	2,419
95	health coverage	2,415
96	informal sector	2,365
97	and social welfare	2,364
98	health expenditure	2,349
99	the gini	2,334
100	health care access	2,323

ที่มา: <https://elsevier.digitalcommonsdata.com/datasets/9sxdykm8s4/4>

2. SDG 2: Zero Hunger

ตารางที่ 2 คำสำคัญ 100 อันดับแรกของ SDG 2: Zero Hunger

Rank	Term	Number of papers with this term in all of Scopus
1	malnutrition	32,385
2	biological control	26,702
3	food security	20,016
4	tillage	18,040
5	agricultural production	15,153
6	biocontrol	15,148
7	crop production	15,000
8	parasitoid	12,929
9	livelihoods	12,738
10	pest management	12,692
11	food production	12,689
12	crop yield	12,651
13	enemies	11,737
14	parasitoids	10,279
15	farmers,	9,785
16	domestication	9,535
17	the farmers	9,484
18	cropping systems	8,913
19	genetic resources	8,649
20	fallow	8,399
21	natural enemies	7,779
22	agricultural practices	7,771
23	rural development	7,564
24	on-farm	7,514
25	pest control	7,263
26	entomopathogenic	7,145
27	integrated pest	7,064
28	malnourished	6,965
29	rainfed	6,948
30	crop yields	6,931
31	integrated pest management	6,864
32	agri	6,862
33	insect pests	6,824

Rank	Term	Number of papers with this term in all of Scopus
34	farming systems	6,786
35	smallholder	6,689
36	cropping system	6,504
37	malnutrition.	6,416
38	agricultural research	6,030
39	undernutrition	6,028
40	agroforestry	5,942
41	crop rotation	5,895
42	control agent	5,880
43	sustainable agriculture	5,645
44	agricultural sector	5,614
45	control agents	5,553
46	food insecurity	5,537
47	stunting	5,521
48	agricultural systems	5,303
49	organic farming	5,183
50	intercropping	5,008
51	precision agriculture	4,964
52	crop productivity	4,951
53	weed management	4,872
54	livestock production	4,847
55	landraces	4,765
56	agroecosystems	4,713
57	crop management	4,610
58	conventional tillage	4,597
59	rice production	4,575
60	no-tillage	4,552
61	soil management	4,552
62	crop species	4,528
63	no-till	4,502
64	nutritional assessment	4,342
65	the farmer	4,296
66	crop residues	4,258
67	agricultural development	4,218
68	grain yields	4,212

Rank	Term	Number of papers with this term in all of Scopus
69	agricultural policy	3,913
70	the agricultural sector	3,889
71	agricultural productivity	3,788
72	biocontrol agent	3,741
73	biocontrol agents	3,721
74	agricultural landscapes	3,622
75	cover crops	3,593
76	biological control agent	3,590
77	braconidae	3,537
78	biological control agents	3,511
79	farming system	3,471
80	cover crop	3,373
81	farming practices	3,348
82	food crops	3,332
83	crop improvement	3,186
84	global food	3,179
85	on farm	3,161
86	insecurity.	3,135
87	crop residue	3,131
88	agro-ecological	3,000
89	agroecosystem	2,960
90	crop protection	2,951
91	harzianum	2,949
92	agricultural management	2,938
93	land tenure	2,848
94	food system	2,843
95	tillage systems	2,817
96	farm level	2,817
97	c sequestration	2,798
98	pesticide use	2,784
99	farm management	2,714
100	smallholder farmers	2,701

ที่มา: <https://elsevier.digitalcommonsdata.com/datasets/9sxdykm8s4/4>

3. SDG 3: Good Health and Well Being

ตารางที่ 3 คำสำคัญ 100 อันดับแรกของ SDG 3: Good Health and Well Being

Rank	Term	Number of papers with this term in all of Scopus
1	triple-negative breast cancer	4,597
2	severe acute respiratory syndrome	4,561
3	cancer radiotherapy	4,553
4	cancer invasion	4,541
5	gastric cancers	4,538
6	head and neck squamous cell carcinoma (hnscc)	4,529
7	childhood asthma	4,512
8	human immunodeficiency virus infection	4,510
9	allergy, asthma	4,501
10	ovarian cancer patients	4,490
11	testicular cancer	4,488
12	antituberculosis	4,481
13	affordable care act	4,462
14	anti-tuberculosis	4,459
15	primary cancer	4,458
16	thyroid cancer.	4,451
17	tuberculosis patients	4,451
18	diagnosis of cancer	4,445
19	invasive cancer	4,443
20	human gastric cancer	4,442
21	diabetes duration	4,438
22	diabetes insipidus	4,438
23	neuroblastoma cell	4,433
24	creutzfeldt-jakob disease	4,407
25	obesity and diabetes	4,394
26	maternal morbidity	4,392
27	malaria control	4,377
28	anti-cancer drugs	4,371
29	metastatic renal cell carcinoma	4,358
30	laryngeal cancer	4,352
31	people living with hiv	4,349
32	malaria parasites	4,347
33	type 1 diabetes (t1d)	4,346

Rank	Term	Number of papers with this term in all of Scopus
34	advanced prostate cancer	4,340
35	and lymphoma	4,332
36	cancer breast	4,322
37	asthma symptoms	4,320
38	head and neck cancer.	4,311
39	castration-resistant prostate	4,308
40	oral squamous cell carcinoma (oscc)	4,306
41	squamous cell carcinoma (escc)	4,301
42	heavy drinking	4,278
43	fetal death	4,270
44	mycobacterium tuberculosis.	4,264
45	congenital heart disease.	4,263
46	cancer registries	4,262
47	seasonal influenza	4,256
48	hiv rna	4,235
49	cancer associated	4,226
50	attempted suicide	4,222
51	skin cancer.	4,213
52	castration-resistant prostate cancer	4,210
53	hepatitis e	4,207
54	bladder carcinoma	4,206
55	kidney cancer	4,200
56	osteosarcoma.	4,195
57	overweight/obesity	4,194
58	cancer staging	4,193
59	hepatitis b surface antigen (hbsag)	4,190
60	valvular heart disease	4,187
61	hemorrhagic stroke	4,179
62	breast cancer survivors	4,163
63	ischemic stroke patients	4,158
64	mycobacterium tuberculosis (mtb)	4,154
65	obesity prevention	4,143
66	pulmonary tb	4,143
67	anti-cancer drug	4,115
68	stroke rehabilitation	4,109

Rank	Term	Number of papers with this term in all of Scopus
69	esophageal squamous cell carcinoma (escc)	4,106
70	hypertension and diabetes	4,096
71	mcf-7 breast cancer	4,093
72	anticancer activities	4,081
73	cancer therapeutics	4,080
74	cystic fibrosis.	4,079
75	obstructive lung disease	4,079
76	deep vein thrombosis (dvt)	4,073
77	neonatal morbidity	4,064
78	risk of hiv	4,052
79	hiv-1 replication	4,051
80	avian influenza virus	4,030
81	midwife	4,030
82	pulmonary hypertension (ph)	4,028
83	early gastric cancer	4,025
84	tnbc	4,021
85	neck cancers	4,015
86	hepatitis b and c	4,011
87	development of obesity	4,009
88	suicide prevention	4,004
89	osteosarcoma cells	4,003
90	pancreatic cancer cell	4,000
91	ebola virus	3,996
92	t2dm patients	3,991
93	breast cancer cases	3,985
94	breast cancer diagnosis	3,985
95	treatment of hiv	3,982
96	transmembrane conductance regulator (cftr)	3,979
97	national institutes of health stroke scale	3,977
98	acute myelogenous leukemia	3,974
99	sudden infant	3,974
100	cancer association	3,956

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4. SDG 4: Quality Education

ตารางที่ 4 คำสำคัญ 100 อันดับแรกของ SDG 4: Quality Education

Rank	Term	Number of papers with this term in all of Scopus
1	e-learning	26,770
2	learning environment	22,843
3	vocational	21,717
4	trainees	21,545
5	student learning	17,406
6	learning outcomes	15,592
7	learning environments	14,432
8	achievement.	13,560
9	academic performance	12,676
10	academic achievement	12,299
11	education system	11,474
12	education institutions	10,884
13	trainee	9,823
14	distance learning	9,714
15	students' learning	9,640
16	learning activities	9,437
17	special education	9,396
18	higher education institutions	9,207
19	learning experiences	8,926
20	learning disabilities	8,661
21	distance education	8,290
22	teacher training	7,714
23	special needs	7,704
24	comprehension.	7,568
25	student performance	7,405
26	teachers and students	7,086
27	educational system	6,941
28	education policy	6,703
29	dyslexia	6,586
30	career development	6,539
31	reading comprehension	6,363
32	tutors	6,307
33	lifelong learning	6,245

Rank	Term	Number of papers with this term in all of Scopus
34	learning and teaching	6,074
35	educational technology	5,722
36	learning environment.	5,694
37	learning styles	5,691
38	learning opportunities	5,675
39	student engagement	5,664
40	educational needs	5,594
41	primary education	5,568
42	mobile learning	5,399
43	learning management	5,355
44	childhood education	5,293
45	students and teachers	5,206
46	education students	5,191
47	internship	5,184
48	blended learning	5,178
49	the higher education	5,168
50	professional education	5,155
51	student achievement	5,045
52	educational process	4,890
53	online courses	4,882
54	educational policy	4,825
55	teaching strategies	4,798
56	interactive learning	4,780
57	professional training	4,699
58	learning disability	4,697
59	early childhood education	4,665
60	employability	4,633
61	teaching practices	4,600
62	environmental education	4,596
63	instructional design	4,575
64	teaching and learning.	4,547
65	vocational education	4,542
66	learning outcomes.	4,492
67	school district	4,337
68	literacy skills	4,325

Rank	Term	Number of papers with this term in all of Scopus
69	course content	4,289
70	general education	4,279
71	and literacy	4,226
72	classrooms,	4,212
73	virtual learning	4,190
74	reading and writing	4,093
75	academic success	4,084
76	continuing professional	4,074
77	effective learning	4,068
78	student learning.	4,064
79	educational outcomes	4,023
80	school environment	3,837
81	learning difficulties	3,822
82	school districts	3,816
83	school system	3,798
84	skill development	3,797
85	postsecondary	3,795
86	academic performance.	3,778
87	vocational training	3,764
88	learning needs	3,673
89	learning style	3,611
90	online course	3,609
91	learning environments.	3,597
92	students' performance	3,574
93	competency-based	3,567
94	education through	3,565
95	education systems	3,557
96	children with disabilities	3,524
97	learning materials	3,512
98	elearning	3,479
99	students with disabilities	3,459
100	education sector	3,450

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5. SDG 5: Gender Equality

ตารางที่ 5 คำสำคัญ 100 อันดับแรกของ SDG 5: Gender Equality

Rank	Term	Number of papers with this term in all of Scopus
1	sexually transmitted	26,158
2	feminist	22,816
3	gendered	18,663
4	sexual abuse	14,959
5	reproductive health	12,939
6	condom	12,921
7	hiv prevention	11,543
8	domestic violence	11,410
9	msm	10,516
10	intimate partner	9,990
11	transmitted infections	9,961
12	sexual health	9,913
13	family planning	9,863
14	men who have sex with	9,775
15	partner violence	9,681
16	men who have sex with men	9,668
17	transmitted diseases	9,602
18	sexually transmitted infections	9,527
19	feminism	9,358
20	condom use	9,158
21	sexually transmitted diseases	9,124
22	hiv in	9,078
23	risk behaviors	9,044
24	hiv transmission	9,015
25	intimate partner violence	8,809
26	hiv testing	8,683
27	living with hiv	8,631
28	sexual intercourse	8,361
29	sexually active	7,995
30	condoms	7,968
31	sexual partners	7,924
32	violence against	7,333
33	hiv-related	7,117

Rank	Term	Number of papers with this term in all of Scopus
34	sexual risk	7,102
35	risk behavior	7,031
36	hiv status	6,874
37	hiv risk	6,261
38	sexual assault	6,197
39	contraceptive use	6,150
40	injection drug	6,094
41	physical abuse	5,893
42	sexual behaviour	5,834
43	against women	5,769
44	who have sex with men (msm)	5,714
45	men who have sex with men (msm)	5,667
46	ipv	5,622
47	gender equality	5,575
48	hiv prevalence	5,544
49	sexual behaviors	5,368
50	sex workers	5,332
51	gender roles	5,311
52	patriarchal	5,181
53	sexual violence	5,139
54	transmission of hiv	5,126
55	perpetrator	5,112
56	transmitted disease	5,065
57	hiv/aids.	5,065
58	transmitted infection	4,950
59	hiv infections	4,808
60	gender-based	4,765
61	hiv care	4,733
62	sexually transmitted disease	4,698
63	mother-to-child	4,679
64	sexually transmitted infection	4,555
65	stis	4,514
66	intimate partner violence (ipv)	4,442
67	circumcision	4,389
68	people living with hiv	4,349

Rank	Term	Number of papers with this term in all of Scopus
69	violence against women	4,193
70	risk of hiv	4,052
71	injecting drug	4,013
72	married women	3,988
73	hiv epidemic	3,932
74	mother-to-child transmission	3,863
75	hiv treatment	3,855
76	child sexual abuse	3,837
77	women's experiences	3,824
78	prevention interventions	3,790
79	living with hiv/aids	3,728
80	victimization.	3,612
81	prevalence of hiv	3,586
82	intersectionality	3,533
83	injection drug use	3,529
84	sexual and reproductive	3,431
85	gender gap	3,365
86	gender inequality	3,322
87	sex partners	3,280
88	contraceptive methods	3,214
89	injection drug users	3,198
90	risky sexual	3,185
91	serostatus	3,171
92	gender relations	3,164
93	perpetration	3,151
94	idus	3,127
95	physical violence	3,084
96	gender role	3,070
97	masculinities	2,983
98	sexual transmission	2,980
99	stds	2,930
100	male partners	2,913

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6. SDG 6: Clean Water and Sanitation

ตารางที่ 6 คำสำคัญ 100 อันดับแรกของ SDG 6: Clean Water and Sanitation

Rank	Term	Number of papers with this term in all of Scopus
1	water management	23,695
2	wastewater.	23,515
3	treatment plant	20,871
4	activated sludge	18,483
5	desalination	18,168
6	treatment plants	16,799
7	waste water	15,287
8	wastewaters	13,608
9	suspended solids	13,071
10	the water quality	12,966
11	water resource	12,349
12	water pollution	12,241
13	chemical oxygen demand (cod)	11,383
14	water quality.	11,218
15	wastewater treatment plant	10,900
16	of water resources	10,623
17	reverse osmosis	10,299
18	wastewater treatment plants	9,493
19	and water quality	9,339
20	stormwater	9,205
21	nitrogen removal	8,604
22	potable	8,509
23	water quality,	8,465
24	municipal wastewater	8,264
25	sewage treatment	8,242
26	biological treatment	8,219
27	effluent.	8,110
28	cod removal	7,842
29	treatment system	7,748
30	water demand	7,664
31	hydraulic retention	7,614
32	bod	7,376
33	wastewater treatment.	7,330

Rank	Term	Number of papers with this term in all of Scopus
34	industrial wastewater	7,252
35	water resources.	7,101
36	water conservation	6,970
37	water supplies	6,676
38	potable water	6,586
39	hydraulic retention time	6,364
40	treatment systems	6,297
41	water resources management	6,146
42	dissolved solids	5,979
43	membrane bioreactor	5,967
44	contaminated water	5,954
45	framework directive	5,874
46	groundwater quality	5,760
47	water scarcity	5,682
48	sequencing batch	5,475
49	water quality parameters	5,360
50	drip irrigation	5,254
51	phosphorus removal	5,211
52	water framework	5,051
53	irrigation system	5,025
54	water framework directive	4,914
55	urban water	4,904
56	total dissolved solids	4,865
57	non-point	4,814
58	groundwater resources	4,803
59	water supply and	4,786
60	constructed wetlands	4,773
61	water treatment.	4,759
62	groundwater samples	4,742
63	total suspended solids	4,700
64	total phosphorus (tp)	4,504
65	raw water	4,486
66	mbr	4,485
67	nutrient removal	4,470
68	organic loading	4,452

Rank	Term	Number of papers with this term in all of Scopus
69	constructed wetland	4,429
70	domestic wastewater	4,377
71	wwtp	4,304
72	treated water	4,247
73	water supply.	4,149
74	waste water treatment	4,143
75	biochemical oxygen demand	4,082
76	best management practices	4,078
77	drinking water treatment	4,003
78	treated wastewater	3,998
79	water shortage	3,937
80	reverse osmosis (ro)	3,937
81	source pollution	3,922
82	water and wastewater	3,910
83	groundwater contamination	3,903
84	water distribution systems	3,881
85	anaerobic sludge	3,878
86	irrigation systems	3,870
87	sequencing batch reactor	3,847
88	water treatment plant	3,819
89	advanced oxidation processes	3,813
90	water contamination	3,785
91	water resource management	3,774
92	municipal wastewater treatment	3,703
93	integrated water	3,696
94	management of water	3,694
95	water quality monitoring	3,650
96	crop water	3,647
97	shallow groundwater	3,646
98	industrial effluents	3,607
99	treatment technologies	3,527
100	watershed management	3,500

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7. SDG 7: Affordable and Clean Energy

ตารางที่ 7 คำสำคัญ 100 อันดับแรกของ SDG 7: Affordable and Clean Energy

Rank	Term	Number of papers with this term in all of Scopus
1	oxide fuel cell	11,707
2	solid oxide fuel cell	11,479
3	bioenergy	11,440
4	solid oxide fuel cells	11,347
5	fuel cells.	10,789
6	wind farms	10,549
7	li-ion batteries	10,329
8	organic solar	9,773
9	biodiesel production	9,600
10	ion battery	9,437
11	power point tracking	9,350
12	offshore wind	9,320
13	maximum power point tracking	8,967
14	membrane fuel cell	8,732
15	organic solar cells	8,621
16	bioethanol	8,573
17	proton exchange membrane fuel	8,481
18	microgrids	8,456
19	organic light-emitting diodes	8,443
20	pv system	8,335
21	photovoltaic cells	8,242
22	demand response	8,181
23	sustainable energy	8,125
24	smart grids	8,090
25	silicon solar cells	8,086
26	lithium ion battery	8,083
27	mppt	7,991
28	photovoltaic devices	7,990
29	solar thermal	7,919
30	pem fuel	7,810
31	hydrogen evolution reaction	7,504
32	pemfc	7,406
33	perovskite solar cells	7,079

Rank	Term	Number of papers with this term in all of Scopus
34	li-ion battery	7,068
35	electrolyte membrane	7,042
36	clean energy	6,989
37	photovoltaic system	6,915
38	wind power generation	6,878
39	photovoltaic performance	6,832
40	the internet of things (iot)	6,740
41	hybrid electric vehicle	6,653
42	microbial fuel	6,648
43	membrane fuel cells	6,633
44	methanol fuel	6,607
45	photovoltaic systems	6,543
46	smart home	6,475
47	bulk heterojunction	6,406
48	power conversion efficiency (pce)	6,399
49	direct methanol	6,364
50	solar photovoltaic	6,340
51	hybrid electric vehicles	6,316
52	light-emitting diodes (leds	6,094
53	light-emitting diodes (leds)	6,071
54	photovoltaic power	6,061
55	polymer electrolyte membrane	6,041
56	distributed generation (dg	5,991
57	solar cell.	5,991
58	distributed generation (dg)	5,970
59	dye-sensitized solar cell	5,941
60	tracking (mppt)	5,921
61	wireless ad hoc	5,899
62	(dsscs)	5,842
63	biofuel production	5,817
64	pem fuel cell	5,767
65	dssc	5,756
66	power point tracking (mppt)	5,730
67	maximum power point tracking (mppt)	5,688
68	pv systems	5,685

Rank	Term	Number of papers with this term in all of Scopus
69	thin film solar	5,642
70	dfig	5,638
71	proton exchange membrane fuel cell	5,635
72	energy technologies	5,601
73	the smart grid	5,586
74	the renewable energy	5,518
75	dsscs	5,513
76	solar collector	5,487
77	fuel cell.	5,379
78	maximum power density	5,318
79	energy-efficiency	5,261
80	polymer solar cells	5,190
81	renewable energies	5,170
82	and renewable energy	5,131
83	the power conversion efficiency	5,079
84	biodiesel.	5,028
85	anode materials for	4,995
86	renewable energy resources	4,962
87	wind turbines.	4,950
88	lithium-ion batteries.	4,948
89	microbial fuel cell	4,948
90	light-emitting diode (led)	4,901
91	electric vehicles.	4,807
92	(pemfc)	4,786
93	dye-sensitized solar cells (dsscs)	4,778
94	organic photovoltaic	4,740
95	electric vehicles (evs)	4,738
96	renewable energy.	4,715
97	solar pv	4,707
98	photovoltaic applications	4,694
99	(dfig)	4,690
100	cell efficiency	4,682

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8. SDG 8: Decent Work and Economic Growth

ตารางที่ 8 คำสำคัญ 100 อันดับแรกของ SDG 8: Decent Work and Economic Growth

Rank	Term	Number of papers with this term in all of Scopus
1	economic growth	44,665
2	economic development	44,106
3	wage	23,269
4	human capital	20,037
5	wages	17,338
6	labour market	16,507
7	labor market	15,185
8	sustainable development.	12,696
9	economic growth.	10,935
10	the sustainable development	10,303
11	economic development.	9,568
12	and tourism	8,906
13	tourism.	8,893
14	regional development	8,638
15	energy policy	7,649
16	safety and health	7,439
17	occupational safety	6,821
18	the labour market	6,715
19	and sustainable development	6,700
20	economic activities	6,519
21	income inequality	6,465
22	technological change	6,368
23	economic policy	5,996
24	labor force	5,988
25	the labor market	5,939
26	tourism industry	5,858
27	policy recommendations	5,802
28	sustainable agriculture	5,645
29	in labor	5,625
30	technological progress	5,439
31	production function	5,417
32	regional economic	5,410
33	economies of scale	5,385

Rank	Term	Number of papers with this term in all of Scopus
34	tourism development	5,154
35	income distribution	4,981
36	crop productivity	4,951
37	climate change mitigation	4,935
38	labour force	4,698
39	occupational safety and health	4,693
40	and unemployment	4,618
41	poverty reduction	4,457
42	productivity growth	4,409
43	general equilibrium model	4,201
44	factor productivity	4,186
45	unemployment.	4,111
46	the economic development	4,098
47	foreign direct investment (fdi	4,096
48	foreign direct investment (fdi)	4,087
49	gross domestic product (gdp)	4,042
50	climate policy	4,031
51	development policy	3,955
52	socio-economic development	3,927
53	personal protective	3,878
54	on economic growth	3,847
55	employment opportunities	3,815
56	total factor	3,814
57	unemployment rate	3,810
58	agricultural productivity	3,788
59	capital accumulation	3,763
60	trade unions	3,678
61	sustainable development goals	3,658
62	total factor productivity	3,563
63	labor markets	3,552
64	poverty alleviation	3,523
65	per capita income	3,390
66	gdp growth	3,361
67	local economic	3,358
68	the economic growth	3,284

Rank	Term	Number of papers with this term in all of Scopus
69	labour markets	3,222
70	industrial structure	3,221
71	personal protective equipment	3,198
72	ecotourism	3,178
73	development policies	3,155
74	sustainability assessment	3,118
75	labour market.	3,108
76	the tourism industry	3,082
77	gdp per capita	3,071
78	endogenous growth	3,040
79	tfp	2,981
80	the unemployment	2,957
81	labor supply	2,922
82	self-employed	2,887
83	industrial relations	2,868
84	sustainable tourism	2,830
85	economic policies	2,811
86	labor market.	2,805
87	economic sectors	2,761
88	force participation	2,664
89	computable general	2,663
90	water productivity	2,644
91	labor productivity	2,641
92	older workers	2,639
93	financial development	2,625
94	computable general equilibrium	2,625
95	self-employment	2,623
96	microfinance	2,590
97	national economic	2,590
98	regional economy	2,553
99	energy policies	2,532
100	market outcomes	2,477

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9. SDG 9: Industry, Innovation and Infrastructure

ตารางที่ 9 คำสำคัญ 100 อันดับแรกของ SDG 9: Industry, Innovation and Infrastructure

Rank	Term	Number of papers with this term in all of Scopus
1	cycle assessment	15,664
2	life cycle assessment	15,403
3	additive manufacturing	15,325
4	micromachining	14,359
5	rapid prototyping	14,253
6	cnc	13,424
7	lca	13,405
8	3d printing	13,164
9	manufacturing systems	13,066
10	(lca)	12,700
11	manufacturing industry	11,141
12	manufacturing system	10,933
13	environmental performance	10,493
14	microfabrication	10,174
15	technological innovation	8,763
16	machine tools	7,990
17	machining process	7,813
18	internet access	7,595
19	industrial waste	7,476
20	life cycle assessment (lca)	7,328
21	industrial wastewater	7,252
22	manufacturing technology	7,101
23	electrical discharge	6,680
24	edm	6,461
25	manufacturing industries	6,321
26	carbon footprint	6,307
27	manufacturing firms	6,078
28	nanofabrication	5,916
29	manufacturing companies	5,873
30	discharge machining	5,715
31	scada	5,713
32	laser melting	5,501
33	3d printed	5,483

Rank	Term	Number of papers with this term in all of Scopus
34	material removal rate	5,353
35	cad/cam	5,327
36	industrial sectors	5,225
37	process planning	4,865
38	warming potential	4,789
39	manufacturing sector	4,734
40	critical infrastructure	4,710
41	flexible manufacturing	4,669
42	manufacturing is	4,630
43	global warming potential	4,541
44	innovation process	4,514
45	development (r&d)	4,499
46	laser cladding	4,463
47	numerical control	4,381
48	industrial sector	4,366
49	research and development (r&d)	4,319
50	internet service	4,282
51	industrial revolution	4,265
52	laser sintering	4,176
53	digital divide	4,163
54	selective laser melting	4,151
55	industrial robot	4,064
56	industry 4	4,053
57	bottom line	4,052
58	cradle	4,051
59	industrial control	4,041
60	industry 4.0	4,038
61	product innovation	3,946
62	broadband wireless	3,930
63	manufacturing techniques	3,923
64	machining parameters	3,919
65	electrical discharge machining	3,901
66	manufacturing technologies	3,889
67	manufacturing environment	3,683
68	open innovation	3,602

Rank	Term	Number of papers with this term in all of Scopus
69	infrastructure development	3,572
70	additive manufacturing (am)	3,494
71	technology innovation	3,491
72	venture capital	3,392
73	remanufacturing	3,361
74	innovation management	3,356
75	infrastructure projects	3,329
76	industrial robots	3,315
77	control and data acquisition	3,311
78	transport infrastructure	3,232
79	industrial structure	3,221
80	circular economy	3,215
81	industrial wastes	3,192
82	resource efficiency	3,151
83	manufacturing systems.	3,142
84	industrial automation	3,116
85	product and process	3,109
86	innovation system	3,101
87	energy-intensive	3,085
88	stereolithography	3,031
89	tool path	3,018
90	fused deposition	2,936
91	ultra-precision	2,869
92	manufacturing methods	2,869
93	life cycle analysis	2,841
94	advanced manufacturing	2,794
95	innovation performance	2,754
96	virtual prototyping	2,735
97	transportation infrastructure	2,724
98	3d printer	2,721
99	critical infrastructures	2,694
100	lean manufacturing	2,657

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10. SDG 10: Reduced Inequality

ตารางที่ 10 คำสำคัญ 100 อันดับแรกของ SDG 10: Reduced Inequality

Rank	Term	Number of papers with this term in all of Scopus
1	wage	23,269
2	migrant	22,694
3	financial crisis	20,054
4	medicaid	18,549
5	inequality.	16,828
6	social justice	13,330
7	international trade	13,275
8	refugees	13,181
9	health disparities	11,585
10	refugee	11,035
11	racial/ethnic	10,101
12	poverty.	9,325
13	access to health	9,039
14	financial institutions	7,529
15	insurance coverage	7,363
16	disparities.	7,287
17	inequities	7,021
18	seekers	6,933
19	social determinants	6,901
20	world trade	6,773
21	determinants of health	6,695
22	asylum	6,526
23	income inequality	6,465
24	uninsured	6,419
25	undocumented	6,382
26	racial and ethnic	6,337
27	immigrants.	6,113
28	global financial crisis	5,869
29	equity.	5,806
30	the financial crisis	5,787
31	inequity	5,634
32	social inclusion	5,607
33	gender equality	5,575

Rank	Term	Number of papers with this term in all of Scopus
34	access to health care	5,545
35	free trade	5,476
36	international development	5,446
37	health inequalities	5,442
38	social determinants of	5,216
39	social integration	5,175
40	care act	5,075
41	migrants.	4,995
42	income distribution	4,981
43	gini	4,949
44	mortgage	4,887
45	financial crisis.	4,767
46	banking sector	4,660
47	the poverty	4,597
48	affordable care	4,589
49	affordable care act	4,462
50	poverty reduction	4,457
51	civil rights	4,212
52	financial system	4,209
53	racial disparities	4,117
54	insurance status	4,107
55	the global financial crisis	4,099
56	social determinants of health	4,089
57	social inequalities	4,022
58	social inequality	3,918
59	private insurance	3,705
60	financial sector	3,621
61	and immigration	3,612
62	poverty alleviation	3,523
63	medicare and medicaid	3,468
64	students with disabilities	3,459
65	gender inequality	3,322
66	trade organization	3,321
67	social mobility	3,190
68	migrant workers	3,184

Rank	Term	Number of papers with this term in all of Scopus
69	trade policy	3,181
70	banking system	3,176
71	inclusive education	3,174
72	world trade organization	3,159
73	care access	3,124
74	international migration	3,106
75	financial crises	3,089
76	and social justice	3,052
77	universal health	3,039
78	immigrants'	3,037
79	the affordable care act	2,920
80	mainstreaming	2,911
81	asylum seekers	2,882
82	trade agreements	2,880
83	financial stability	2,862
84	health insurance coverage	2,815
85	trade liberalization	2,800
86	socioeconomic position	2,799
87	economic and financial	2,754
88	remittances	2,722
89	redistributive	2,665
90	public housing	2,644
91	social justice.	2,582
92	social housing	2,523
93	laundering	2,511
94	medicare and medicaid services	2,465
95	health equity	2,431
96	the immigration	2,422
97	refugees.	2,403
98	access to healthcare	2,385
99	health coverage	2,365
100	the world trade organization	2,361

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11. SDG 11: Sustainable Cities and Communities

ตารางที่ 11 คำสำคัญ 100 อันดับแรกของ SDG 11: Sustainable Cities and Communities

Rank	Term	Number of papers with this term in all of Scopus
1	solid waste	24,062
2	cultural heritage	19,084
3	urban planning	14,131
4	urban development	14,107
5	municipal solid waste	12,654
6	transportation systems	12,361
7	natural disasters	11,849
8	road network	11,590
9	public transport	11,035
10	intelligent transportation	10,176
11	stormwater	9,205
12	traffic congestion	8,763
13	heritage.	8,371
14	municipal wastewater	8,264
15	traffic safety	8,193
16	urbanized	8,002
17	seismic hazard	7,874
18	road safety	7,766
19	msw	7,100
20	public transportation	6,504
21	public space	6,252
22	smart cities	6,214
23	smart city	6,177
24	unesco	6,144
25	natural disaster	6,114
26	urban traffic	6,033
27	flood risk	5,755
28	intelligent transportation systems	5,746
29	urban land	5,720
30	on road	5,715
31	natural hazards	5,640
32	(msw)	5,465
33	urban space	5,027

Rank	Term	Number of papers with this term in all of Scopus
34	public spaces	4,987
35	heat island	4,966
36	solid wastes	4,924
37	urban growth	4,922
38	urban water	4,904
39	the air quality	4,885
40	urban heat	4,825
41	urbanization.	4,781
42	the urban environment	4,762
43	road networks	4,717
44	urban area.	4,710
45	earthquake engineering	4,689
46	urban design	4,509
47	sprawl	4,499
48	urban air	4,494
49	use planning	4,429
50	sustainable urban	4,355
51	municipal solid waste (msw)	4,293
52	urban heat island	4,224
53	land use planning	4,213
54	urban environment.	4,183
55	housing market	4,150
56	incinerator	4,144
57	world heritage	4,068
58	ground acceleration	3,969
59	traffic noise	3,959
60	rapid urbanization	3,942
61	urbanism	3,908
62	disaster risk	3,845
63	signalized	3,773
64	traffic simulation	3,753
65	municipal waste	3,738
66	municipal wastewater treatment	3,703
67	the road network	3,697
68	the traffic flow	3,678

Rank	Term	Number of papers with this term in all of Scopus
69	seismic risk	3,642
70	urban landscape	3,639
71	intelligent transportation system	3,629
72	road users	3,606
73	rail transit	3,571
74	traffic signal	3,507
75	vehicle emissions	3,485
76	solid waste management	3,467
77	post-disaster	3,368
78	waste incineration	3,349
79	cultural heritage.	3,319
80	urban public	3,310
81	urban road	3,298
82	disaster prevention	3,199
83	travel demand	3,181
84	urban sprawl	3,143
85	after the earthquake	3,091
86	signal control	3,069
87	intelligent transport	3,067
88	commuters	3,061
89	urban expansion	3,049
90	noise pollution	2,982
91	city center	2,980
92	peak ground acceleration	2,953
93	landfill.	2,922
94	storm water	2,915
95	european cities	2,900
96	transportation planning	2,883
97	green space	2,878
98	public transit	2,869
99	urban studies	2,867
100	city centre	2,829

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12. SDG 12: Responsible Consumption and Production

ตารางที่ 12 คำสำคัญ 100 อันดับแรกของ SDG 12: Responsible Consumption and Production

Rank	Term	Number of papers with this term in all of Scopus
1	solid waste	24,062
2	waste management	22,110
3	landfill	20,192
4	recycle	19,692
5	forest management	17,365
6	cycle assessment	15,664
7	life cycle assessment	15,403
8	leachate	14,700
9	lca	13,405
10	(lca)	12,700
11	municipal solid waste	12,654
12	corporate social	12,601
13	corporate social responsibility	11,741
14	waste disposal	10,661
15	environmental performance	10,493
16	incineration	10,204
17	radioactive waste	9,815
18	composting	9,752
19	landfills	9,231
20	recycling.	9,125
21	and tourism	8,906
22	tourism.	8,893
23	and disposal	8,231
24	nuclear waste	7,846
25	industrial waste	7,476
26	life cycle assessment (lca)	7,328
27	msw	7,100
28	carbon footprint	6,307
29	waste materials	5,920
30	waste treatment	5,892
31	tourism industry	5,858
32	social responsibility (csr)	5,827
33	corporate social responsibility (csr)	5,775

Rank	Term	Number of papers with this term in all of Scopus
34	sustainable use	5,765
35	sustainable agriculture	5,645
36	(msw)	5,465
37	tourism development	5,154
38	spent fuel	4,989
39	hazardous waste	4,960
40	solid wastes	4,924
41	warming potential	4,789
42	management association	4,731
43	environmental education	4,596
44	food waste	4,562
45	global warming potential	4,541
46	organic waste	4,537
47	natural resource management	4,491
48	sustainable production	4,307
49	municipal solid waste (msw)	4,293
50	sustainable use of	4,267
51	landfill leachate	4,248
52	incinerator	4,144
53	cradle	4,051
54	composted	3,892
55	spent nuclear fuel	3,767
56	municipal waste	3,738
57	waste streams	3,609
58	solid waste management	3,467
59	agricultural waste	3,419
60	remanufacturing	3,361
61	waste incineration	3,349
62	waste generation	3,242
63	green building	3,224
64	the compost	3,217
65	circular economy	3,215
66	ecotourism	3,178
67	resource efficiency	3,151
68	sustainability assessment	3,118

Rank	Term	Number of papers with this term in all of Scopus
69	the tourism industry	3,082
70	waste generated	3,021
71	composts	3,000
72	bottom ash	2,995
73	landfill.	2,922
74	sustainable forest	2,909
75	stakeholder engagement	2,843
76	life cycle analysis	2,841
77	landfills.	2,837
78	sustainable tourism	2,830
79	recycling process	2,731
80	waste management.	2,668
81	compost.	2,648
82	sustainable design	2,644
83	reverse logistics	2,608
84	waste recycling	2,603
85	sustainable forest management	2,546
86	and recycle	2,496
87	impact categories	2,453
88	vermicompost	2,449
89	waste stream	2,448
90	leaching tests	2,361
91	e-waste	2,319
92	landfilling	2,309
93	social performance	2,303
94	sustainability issues	2,296
95	leachability	2,278
96	using life	2,266
97	incinerators	2,257
98	and waste management	2,255
99	development mechanism	2,217
100	industrial ecology	2,216

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13. SDG 13: Climate Action

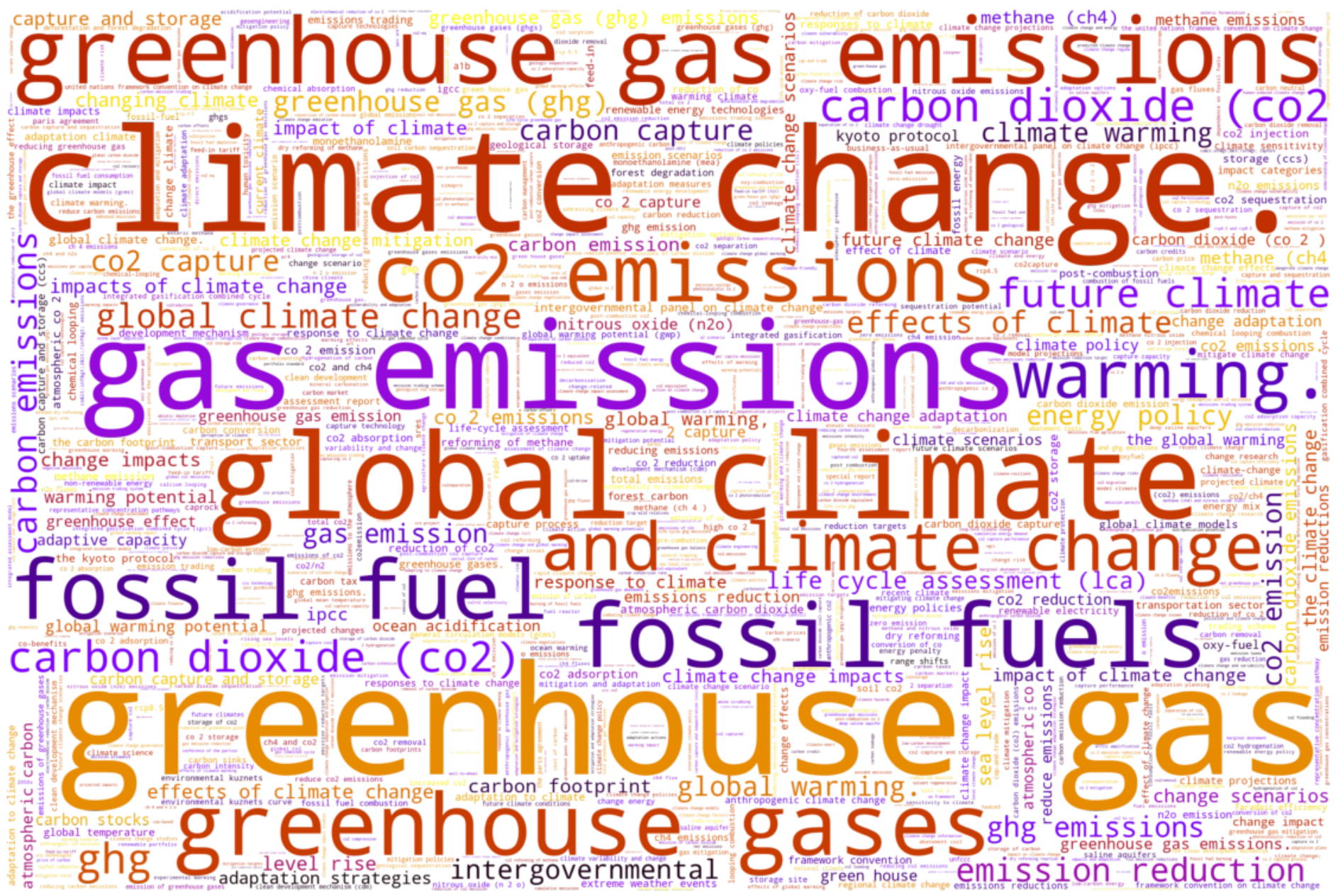
ตารางที่ 13 คำสำคัญ 100 อันดับแรกของ SDG 13: Climate Action

Rank	Term	Number of papers with this term in all of Scopus
1	greenhouse gas	41,192
2	climate change.	36,537
3	gas emissions	25,068
4	global climate	23,977
5	greenhouse gas emissions	20,468
6	fossil fuels	19,093
7	greenhouse gases	18,189
8	fossil fuel	16,438
9	co2 emissions	15,813
10	and climate change	15,067
11	warming.	14,739
12	carbon dioxide (co2	14,260
13	carbon dioxide (co2)	14,065
14	ghg	13,343
15	future climate	11,959
16	global climate change	11,789
17	carbon emissions	11,770
18	emission reduction	11,060
19	effects of climate	9,396
20	co2 capture	8,566
21	ghg emissions	8,396
22	greenhouse gas (ghg)	8,355
23	carbon capture	8,340
24	global warming.	7,942
25	co2 emission	7,888
26	intergovernmental	7,741
27	energy policy	7,649
28	gas emission	7,445
29	climate warming	7,354
30	life cycle assessment (lca)	7,328
31	impacts of climate change	7,088
32	effects of climate change	6,899
33	changing climate	6,899

Rank	Term	Number of papers with this term in all of Scopus
34	level rise	6,884
35	co 2 emissions	6,779
36	impact of climate	6,538
37	carbon emission	6,404
38	sea level rise	6,338
39	carbon footprint	6,307
40	change impacts	6,205
41	the climate change	5,934
42	capture and storage	5,911
43	change scenarios	5,783
44	climate change impacts	5,587
45	global warming,	5,568
46	carbon dioxide emissions	5,489
47	greenhouse gas (ghg) emissions	5,456
48	ipcc	5,243
49	methane (ch4	5,142
50	impact of climate change	5,118
51	methane (ch4)	5,042
52	climate change mitigation	4,935
53	response to climate	4,809
54	warming potential	4,789
55	climate change scenarios	4,758
56	future climate change	4,719
57	adaptation strategies	4,667
58	greenhouse gas emissions.	4,605
59	global warming potential	4,541
60	emissions reduction	4,445
61	nitrous oxide (n2o)	4,324
62	atmospheric carbon	4,301
63	adaptive capacity	4,144
64	carbon capture and storage	4,130
65	kyoto protocol	4,122
66	greenhouse gas emission	4,052
67	carbon stocks	4,049
68	climate policy	4,031

Rank	Term	Number of papers with this term in all of Scopus
69	change adaptation	4,006
70	ocean acidification	3,962
71	climate change adaptation	3,939
72	2 capture	3,897
73	climate scenarios	3,863
74	methane emissions	3,775
75	co2 emissions.	3,769
76	co2 reduction	3,767
77	co 2 capture	3,755
78	carbon dioxide (co 2)	3,723
79	the global warming	3,708
80	greenhouse effect	3,701
81	emission reductions	3,653
82	reduce emissions	3,589
83	green house	3,585
84	atmospheric co	3,579
85	intergovernmental panel on climate change	3,566
86	current climate	3,471
87	global climate change.	3,452
88	n2o emissions	3,419
89	oxy-fuel	3,403
90	atmospheric co 2	3,325
91	co2 adsorption	3,311
92	transport sector	3,296
93	co 2 emission	3,260
94	change impact	3,239
95	co2 storage	3,236
96	atmospheric carbon dioxide	3,232
97	response to climate change	3,229
98	the kyoto protocol	3,157
99	responses to climate	3,094
100	storage (ccs)	3,092

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รูปที่ 13 คำสำคัญที่ปรากฏใน SDG 13: Climate Action จากงานวิชาการที่ได้รับการเผยแพร่ในฐานข้อมูล Scopus

14. SDG 14: Life Below Water

ตารางที่ 14 คำสำคัญ 100 อันดับแรกของ SDG 14: Life Below Water

Rank	Term	Number of papers with this term in all of Scopus
1	bloom	25,928
2	fishery	23,867
3	eutrophication	21,281
4	spill	17,678
5	reefs	16,886
6	marine environment	16,448
7	protected areas	16,313
8	blooms	15,714
9	coastal areas	15,122
10	coastal waters	14,806
11	estuaries	14,216
12	baltic sea	12,180
13	eutrophic	11,298
14	trace metals	10,963
15	beaches	10,727
16	oil spill	9,810
17	coral reef	9,533
18	shellfish	9,404
19	protected area	9,215
20	the marine environment	9,031
21	coastal zone	9,017
22	coastal and	8,904
23	spills	8,887
24	coastal area	8,756
25	coral reefs	8,501
26	the baltic sea	8,307
27	dinoflagellate	8,166
28	estuary.	7,909
29	seagrass	7,469
30	marine environments	7,344
31	marine ecosystems	7,298
32	surface sediments	7,170
33	hatchery	6,978

Rank	Term	Number of papers with this term in all of Scopus
34	level rise	6,884
35	fisheries management	6,804
36	dinoflagellates	6,550
37	oysters	6,512
38	river estuary	6,430
39	marine organisms	6,383
40	sea level rise	6,338
41	mangroves	6,223
42	coastal regions	6,050
43	mytilus	5,710
44	conservation and management	5,403
45	phosphorus removal	5,211
46	oil spills	5,093
47	seabirds	5,009
48	algal blooms	4,982
49	fishermen	4,980
50	marine protected	4,965
51	adriatic sea	4,883
52	phytoplankton biomass	4,788
53	marine species	4,708
54	salt marsh	4,590
55	marine mammals	4,553
56	artisanal	4,500
57	surface sediment	4,497
58	nutrient removal	4,470
59	fish populations	4,425
60	management and conservation	4,340
61	fishers	4,311
62	marine ecosystem	4,118
63	barrier reef	4,013
64	ocean acidification	3,962
65	demersal	3,779
66	marine sediment	3,762
67	phytoplankton community	3,679
68	coastal ecosystems	3,673

Rank	Term	Number of papers with this term in all of Scopus
69	and fisheries	3,617
70	marine protected areas	3,556
71	spilled	3,550
72	shorelines	3,479
73	lagoon.	3,459
74	eutrophication.	3,457
75	benthic communities	3,401
76	harmful algal	3,384
77	the coastal area	3,355
78	coastal waters.	3,334
79	reef fish	3,285
80	coastal water	3,235
81	tributyltin	3,199
82	overexploitation	3,142
83	coastal environment	3,089
84	salt marshes	3,037
85	overfishing	2,990
86	galloprovincialis	2,990
87	sediment quality	2,959
88	coastal management	2,957
89	macroalgal	2,956
90	coastal environments	2,932
91	bycatch	2,925
92	coastal marine	2,895
93	marine resources	2,839
94	northern gulf	2,786
95	major and trace elements	2,781
96	coastal erosion	2,712
97	tbt	2,663
98	algal bloom	2,655
99	marine waters	2,630
100	fish stocks	2,623

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15. SDG 15: Life on Land

ตารางที่ 15 คำสำคัญ 100 อันดับแรกของ SDG 15: Life on Land

Rank	Term	Number of papers with this term in all of Scopus
1	invasive species	19,617
2	bioremediation	18,110
3	forest management	17,365
4	protected areas	16,313
5	alien	16,312
6	deforestation	14,822
7	endangered species	14,300
8	native species	11,888
9	invasions	11,524
10	biodiversity,	11,322
11	predator-prey	11,170
12	biodiversity conservation	10,694
13	phytoremediation	9,688
14	protected area	9,215
15	and biodiversity	9,045
16	conservation status	7,283
17	water conservation	6,970
18	threatened species	6,849
19	extinctions	6,776
20	forest cover	6,738
21	exotic species	6,425
22	conservation efforts	6,337
23	biological diversity	6,290
24	habitat loss	6,279
25	habitat fragmentation	6,157
26	conservation strategies	6,079
27	ecological restoration	6,035
28	alien species	5,919
29	iucn	5,872
30	habitat quality	5,677
31	desertification	5,510
32	reforestation	5,475
33	conservation and management	5,403

Rank	Term	Number of papers with this term in all of Scopus
34	afforestation	5,323
35	conservation measures	5,322
36	conservation planning	5,216
37	nature conservation	5,207
38	critically endangered	5,048
39	silvicultural	4,848
40	management actions	4,838
41	forest structure	4,797
42	ecosystem service	4,796
43	conservation management	4,704
44	forest products	4,681
45	introduced species	4,672
46	human disturbance	4,614
47	invaders	4,533
48	conservation biology	4,493
49	red list	4,469
50	adaptive management	4,377
51	management and conservation	4,340
52	land degradation	4,335
53	invader	4,288
54	landowners	4,282
55	forest species	4,144
56	biological invasions	4,103
57	habitat suitability	4,079
58	contingent valuation	3,960
59	soil conservation	3,954
60	natural forest	3,895
61	suitable habitat	3,880
62	native plant	3,791
63	ecosystem management	3,702
64	agricultural landscapes	3,622
65	population decline	3,513
66	population declines	3,461
67	natura	3,450
68	revegetation	3,433

Rank	Term	Number of papers with this term in all of Scopus
69	protected areas.	3,390
70	wolves	3,374
71	natural regeneration	3,338
72	invasive plant	3,315
73	forest resources	3,314
74	secondary forest	3,268
75	native vegetation	3,223
76	biodiversity loss	3,171
77	native range	3,088
78	non-native species	3,084
79	landscape-scale	3,053
80	conservation concern	3,032
81	native plants	2,997
82	natural areas	2,996
83	troglydites	2,982
84	wildlife management	2,940
85	land managers	2,938
86	forest land	2,937
87	invasive plants	2,930
88	conservation value	2,922
89	sustainable forest	2,909
90	silviculture	2,887
91	endangered species.	2,886
92	iucn red list	2,837
93	species conservation	2,786
94	environmental conservation	2,756
95	forest fragments	2,734
96	propagule	2,734
97	high conservation	2,687
98	predator-prey interactions	2,680
99	habitat requirements	2,673
100	effective conservation	2,669

ที่มา: <https://elsevier.digitalcommonsdata.com/datasets/9sxdykm8s4/4>

16. SDG 16: Peace Justice and Strong Institution

ตารางที่ 16 คำสำคัญ 100 อันดับแรกของ SDG 16: Peace Justice and Strong Institution

Rank	Term	Number of papers with this term in all of Scopus
1	human rights	30,060
2	violence.	21,419
3	corruption	17,788
4	sexual abuse	14,959
5	victimization	13,751
6	assault	13,595
7	abused	11,815
8	domestic violence	11,410
9	child abuse	10,209
10	intimate partner	9,990
11	partner violence	9,681
12	and violence	9,653
13	bullying	9,651
14	offender	9,256
15	maltreatment	9,106
16	e-government	8,975
17	intimate partner violence	8,809
18	homicide	7,387
19	violence against	7,333
20	perpetrators	7,296
21	harassment	6,957
22	deliberative	6,640
23	abusive	6,545
24	participatory research	6,535
25	child welfare	6,453
26	sexual assault	6,197
27	public participation	6,184
28	physical abuse	5,893
29	murder	5,837
30	and neglect	5,817
31	against women	5,769
32	ipv	5,622
33	community participation	5,577

Rank	Term	Number of papers with this term in all of Scopus
34	and human rights	5,430
35	corrupt	5,269
36	sexual violence	5,139
37	perpetrator	5,112
38	community engagement	5,006
39	political participation	4,826
40	rule of law	4,766
41	human rights.	4,591
42	the violence	4,537
43	child maltreatment	4,534
44	child protection	4,518
45	intimate partner violence (ipv)	4,442
46	foster care	4,372
47	civil rights	4,212
48	violence against women	4,193
49	offences	4,145
50	offenses	4,013
51	assaults	4,012
52	abuses	3,947
53	child sexual abuse	3,837
54	neglect.	3,760
55	corruption.	3,738
56	offence	3,696
57	victimization.	3,612
58	armed conflict	3,551
59	convicted	3,549
60	childhood trauma	3,444
61	community-based participatory	3,428
62	european court	3,369
63	torture	3,345
64	terrorism.	3,327
65	civic engagement	3,299
66	terrorists	3,283
67	abuse and neglect	3,281
68	firearm	3,193

Rank	Term	Number of papers with this term in all of Scopus
69	community involvement	3,184
70	perpetration	3,151
71	the rule of law	3,113
72	physical violence	3,084
73	community-based participatory research	3,060
74	citizen participation	2,906
75	sexual harassment	2,899
76	public engagement	2,886
77	stakeholder engagement	2,843
78	childhood sexual abuse	2,804
79	childhood experiences	2,743
80	homicides	2,667
81	victims'	2,655
82	welfare system	2,607
83	sex offenders	2,591
84	human right	2,587
85	physical aggression	2,580
86	violence prevention	2,491
87	participatory approach	2,469
88	childhood abuse	2,447
89	political violence	2,419
90	international human rights	2,358
91	and sexual abuse	2,328
92	emotional abuse	2,319
93	violent crime	2,308
94	violent behavior	2,288
95	family violence	2,281
96	liberties	2,234
97	fundamental rights	2,145
98	interpersonal violence	2,145
99	court of human rights	2,098
100	the offender	2,098

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