

Additional file 1

Literature search history, adjusted queries, and results per database

Database	Interface	Result(s)	Date
PubMed	PubMed.gov	1378	06.04.2022
Embase	Embase.com	2306	06.04.2022
Web of Science	Clarivate	2366	06.04.2022
Scopus	Scopus.com	1617	06.04.2022
All/removal of duplicates	EndNote	7667/4781	06.04.2022
All/removal of duplicates	Rayyan.ai	4781/4666	07.04.2022

PubMed

Final search is #18

Search	Query	Results
#18	Search: (((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])) AND (((((((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word])) AND (2017/1/1:2022/12/31[pdat]) Filters: English	<u>1,378</u>
#17	Search: (((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])) AND (((((((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word])) AND (2017/1/1:2022/12/31[pdat])	<u>1,387</u>
#15	Search: (((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effectiveness*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])) AND (((((((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word]))	<u>2,421</u>

Search	Query	Results
#14	Search: (((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word])	<u>202,296</u>
#13	Search: decision support system*[Text Word]	<u>14,407</u>
#12	Search: deep learning[Text Word]	<u>30,153</u>
#11	Search: machine learning[Text Word]	<u>66,031</u>
#10	Search: artificial intelligen*[Text Word]	<u>43,180</u>
#9	Search: "Artificial Intelligence"[Mesh] Sort by: Most Recent	<u>141,443</u>
#8	Search: ((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effectiveness*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])	<u>212,594</u>
#7	Search: cost-benefit*[Text Word]	<u>96,876</u>
#6	Search: cost-utilit*[Text Word]	<u>5,719</u>
#5	Search: cost-effective*[Text Word]	<u>157,708</u>
#4	Search: cost-effectiveness*[Text Word]	<u>69,026</u>
#3	Search: economic evaluati*[Text Word]	<u>14,708</u>
#2	Search: "Cost-Benefit Analysis"[Mesh] Sort by: Most Recent	<u>89,057</u>

Embase

No.	Query	Results
#18	#15 NOT #16 AND [english]/lim	2306
#17	#15 NOT #16	2324
#16	#15 AND ('chapter'/it OR 'conference abstract'/it OR 'conference paper'/it OR 'conference review'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it OR 'tombstone'/it)	686

#15	#6 AND #13 AND [2017-2022]/py	3010
#14	#6 AND #13	4798
#13	#7 OR #8 OR #9 OR #10 OR #11 OR #12	344370
#12	'decision support system*':ti,ab,kw	9421
#11	'deep learning':ti,ab,kw	33233
#10	'machine learning':ti,ab,kw	71150
#9	'artificial intelligen*':ti,ab,kw	25964
#8	'machine learning'/exp	302228
#7	'artificial intelligence'/exp	58841
#6	#1 OR #2 OR #3 OR #4 OR #5	371659
#5	'cost utilit*':ti,ab,kw	9066
#4	'cost effect*':ti,ab,kw	216395
#3	'cost benefit*':ti,ab,kw	19007
#2	'economic evaluat*':ti,ab,kw	20780
#1	'economic evaluation'/de OR 'cost benefit analysis'/de OR 'cost effectiveness analysis'/de OR 'cost utility analysis'/de	259514

Scopus

No.	Query	Results
5	((TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")) AND (TITLE-ABS-KEY ("artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re")) AND (LIMIT-TO (LANGUAGE , "english")) AND (EXCLUDE (SUBJAREA , "envi") OR EXCLUDE (SUBJAREA , "mate") OR EXCLUDE (SUBJAREA , "agri") OR EXCLUDE (SUBJAREA , "phys") OR EXCLUDE (SUBJAREA , "ener") OR EXCLUDE (SUBJAREA , "math")) AND (EXCLUDE (SUBJAREA , "soci") OR EXCLUDE (SUBJAREA , "busi") OR EXCLUDE (SUBJAREA , "eart")) AND (EXCLUDE (SUBJAREA , "chem") OR EXCLUDE (SUBJAREA , "ceng") OR EXCLUDE (SUBJAREA , "immu") OR EXCLUDE (SUBJAREA , "vete") OR EXCLUDE (SUBJAREA , "arts")))	<u>2,366</u>
4	((TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")) AND (TITLE-ABS-KEY ("artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017))	6,900
3	((TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")) AND (TITLE-ABS-KEY ("artificial	12,526

	intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*"))	
2	TITLE-ABS-KEY ("artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*")	922,621
1	TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")	667,789

Web of Science

Search	Result
#1 AND #2 and 2022 or 2021 or 2020 or 2017 or 2018 or 2019 (Publication Years) and Articles or Review Articles or Early Access (Document Types) and English (Languages) and Social Sciences Citation Index (SSCI) or Conference Proceedings Citation Index – Science (CPCI-S) or Book Citation Index – Science (BKCI-S) or Arts & Humanities Citation Index (A&HCI) or Conference Proceedings Citation Index – Social Science & Humanities (CPCI-SSH) or Emerging Sources Citation Index (ESCI) (Exclude – Web of Science Index) and Environmental Sciences or Materials Science Multidisciplinary (Exclude – Web of Science Categories)	<u>1,617</u>
#1 AND #2 and 2022 or 2021 or 2020 or 2017 or 2018 or 2019 (Publication Years) and Articles or Review Articles or Early Access (Document Types) and English (Languages)	<u>2,453</u>
#1 AND #2	<u>4,064</u>
"artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*" (Topic)	<u>417,858</u>
"economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*" (Topic)	<u>343,802</u>

Litterature search update 2022-2023

Results and Databases

Database	Platform	Results	Date
PubMed	PubMed.gov	1378	06.04.2022
Embase	Embase.com	2306	06.04.2022
Scopus	Scopus.com	2366	06.04.2022
Web of Science	Clarivate	1617	06.04.2022
All		7667	
After removal of duplicates with EndNote		4781	

Update 2022-2023

Database	Platform	Results	Date
PubMed	PubMed.gov	1041	31.08.2023
Embase	Embase.com	1673	31.08.2023
Scopus	Scopus.com	1475	31.08.2023
Web of Science	Clarivate	1463	31.08.2023
All		5652	
After removal of duplicates with EndNote		2793	

PubMed

Search	Query	Results
#19	Search: (((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])) AND (((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word])) AND (("2022"[Date - Publication] : "2023"[Date - Publication])) AND (English[Language])) Sort by: Publication Date	<u>1,041</u>
#18	Search: (((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])) AND (((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word])) AND (2017/1/1:2022/12/31[pdat])) Filters: English	<u>1,378</u>
#17	Search: (((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])) AND (((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word])) AND (2017/1/1:2022/12/31[pdat]))	<u>1,387</u>
#15	Search: (((((((("Cost-Benefit Analysis"[Mesh]) OR (economic evaluati*[Text Word])) OR (cost-effectiveness*[Text Word])) OR (cost-effective*[Text Word])) OR (cost-utilit*[Text Word])) OR (cost-benefit*[Text Word])) AND (((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word]))	<u>2,421</u>
#14	Search: (((("Artificial Intelligence"[Mesh]) OR (artificial intelligen*[Text Word])) OR (machine learning[Text Word])) OR (deep learning[Text Word])) OR (decision support system*[Text Word])	<u>202,296</u>
#13	Search: decision support system*[Text Word]	<u>14,407</u>
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#9	Search: "Artificial Intelligence"[Mesh] Sort by: Most Recent	<u>141,443</u>
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#7	Search: cost-benefit*[Text Word]	<u>96,876</u>
#6	Search: cost-utilit*[Text Word]	<u>5,719</u>
#5	Search: cost-effective*[Text Word]	<u>157,708</u>

#4	Search: cost-effectiveness*[Text Word]	69,026
#3	Search: economic evaluati*[Text Word]	14,708
#2	Search: "Cost-Benefit Analysis"[Mesh] Sort by: Most Recent	89,057

Embase

No.	Query	Results
#19	#18 NOT ('chapter'/it OR 'conference abstract'/it OR 'conference paper'/it OR 'conference review'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it OR 'tombstone'/it) AND [english]/lim	1673
#18	#6 AND #13 AND [2022-2023]/py	2091
#17	#16 AND [english]/lim	2306
#16	#15 NOT ('chapter'/it OR 'conference abstract'/it OR 'conference paper'/it OR 'conference review'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it OR 'tombstone'/it)	2324
#15	#6 AND #13 AND [2017-2022]/py	3010
#14	#6 AND #13	4798
#13	#7 OR #8 OR #9 OR #10 OR #11 OR #12	344370
#12	'decision support system*':ti,ab,kw	9421
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#9	'artificial intelligen*':ti,ab,kw	25964
#8	'machine learning'/exp	302228
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#6	#1 OR #2 OR #3 OR #4 OR #5	371659
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#4	'cost effect*':ti,ab,kw	216395
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#2	'economic evaluat*':ti,ab,kw	20780
#1	'economic evaluation'/de OR 'cost benefit analysis'/de OR 'cost effectiveness analysis'/de OR 'cost utility analysis'/de	259514

Scopus

No.	Query	Results
6	((TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")) AND (TITLE-ABS-KEY ("artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*")) AND PUBYEAR > 2021 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re")) AND (EXCLUDE (SUBJAREA , "envi") OR EXCLUDE (SUBJAREA , "agri") OR EXCLUDE (SUBJAREA , "mate") OR EXCLUDE (SUBJAREA , "ener") OR EXCLUDE (SUBJAREA , "phys") OR EXCLUDE (SUBJAREA , "math") OR EXCLUDE (SUBJAREA , "soci") OR EXCLUDE (SUBJAREA , "busi") OR EXCLUDE (SUBJAREA , "eart") OR EXCLUDE (SUBJAREA , "chem") OR EXCLUDE (SUBJAREA , "ceng") OR EXCLUDE (SUBJAREA , "immu") OR EXCLUDE (SUBJAREA , "vete") OR EXCLUDE (SUBJAREA , "arts"))) AND (LIMIT-TO (LANGUAGE , "english")))	1,475
5	((TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")) AND (TITLE-ABS-KEY ("artificial intelligen*" OR "machine	<u>2,366</u>

	learning" OR "deep learning" OR "decision support system*")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re")) AND (LIMIT-TO (LANGUAGE , "english")) AND (EXCLUDE (SUBJAREA , "envi") OR EXCLUDE (SUBJAREA , "mate") OR EXCLUDE (SUBJAREA , "agri") OR EXCLUDE (SUBJAREA , "phys") OR EXCLUDE (SUBJAREA , "ener") OR EXCLUDE (SUBJAREA , "math")) AND (EXCLUDE (SUBJAREA , "soci") OR EXCLUDE (SUBJAREA , "busi") OR EXCLUDE (SUBJAREA , "eart")) AND (EXCLUDE (SUBJAREA , "chem") OR EXCLUDE (SUBJAREA , "ceng") OR EXCLUDE (SUBJAREA , "immu") OR EXCLUDE (SUBJAREA , "vete") OR EXCLUDE (SUBJAREA , "arts"))	
4	(TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")) AND (TITLE-ABS-KEY ("artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017))	<u>6,900</u>
3	(TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")) AND (TITLE-ABS-KEY ("artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*"))	<u>12,526</u>
2	TITLE-ABS-KEY ("artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*")	<u>922,621</u>
1	TITLE-ABS-KEY ("economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*")	<u>667,789</u>

Web of Science

#	Search	Result
#6	#1 AND #2 and 2023 or 2022 (Publication Years) and Article or Review Article or Early Access (Document Types) and Environmental Sciences or Materials Science Multidisciplinary (Exclude – Web of Science Categories) and English (Languages)	<u>1,463</u>
#5	#1 AND #2 and 2022 or 2021 or 2020 or 2017 or 2018 or 2019 (Publication Years) and Articles or Review Articles or Early Access (Document Types) and English (Languages) and Social Sciences Citation Index (SSCI) or Conference Proceedings Citation Index – Science (CPCI-S) or Book Citation Index – Science (BKCI-S) or Arts & Humanities Citation Index (A&HCI) or Conference Proceedings Citation Index – Social Science & Humanities (CPCI-SSH) or Emerging Sources Citation Index (ESCI) (Exclude – Web of Science Index) and Environmental Sciences or Materials Science Multidisciplinary (Exclude – Web of Science Categories)	<u>1,617</u>
#4	#1 AND #2 and 2022 or 2021 or 2020 or 2017 or 2018 or 2019 (Publication Years) and Articles or Review Articles or Early Access (Document Types) and English (Languages)	<u>2,453</u>
#3	#1 AND #2	<u>4,064</u>
#2	"artificial intelligen*" OR "machine learning" OR "deep learning" OR "decision support system*" (Topic)	<u>417,858</u>
#1	"economic evaluat*" OR "cost effect*" OR "cost utilit*" OR "cost benefit*" (Topic)	<u>343,802</u>