

AUTOMATICALLY GENERATED NARRATIVES

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MAJOR CLUSTERS

The network is divided into 8 co-citation clusters. The largest 8 clusters are summarized as follows.

Table 1. Summary of the largest 8 clusters.

ClusterID	Size	Silhouette	Label (LSI)	Label (LLR)	Label (MI)	Average Year
0	47	0.937	covid-19 pandemic	covid-19 pandemic (419.95, 1.0E-4)	lexicon level information (4.46)	2020
1	22	0.886	mutual correlation	mutual correlation (218.99, 1.0E-4)	multi-label emotion classification (0.15)	2018
2	22	0.96	affective word	affective word (226.13, 1.0E-4)	detecting change (0.28)	2016
3	20	0.919	emotion mining	current state (340.91, 1.0E-4)	lexicon level information (0.12)	2017
4	20	0.849	online health forum	domain-specific feature (208.25, 1.0E-4)	lexicon level information (0.17)	2016
5	19	0.882	deep learning	covid-19 pandemic (242.31, 1.0E-4)	lexicon level information (1.63)	2020
6	14	0.906	creating emotion	creating emotion (127.8, 1.0E-4)	using hybrid feature extraction method (0.08)	2018
7	14	0.936	gender perspective	topic analysis (320.58, 1.0E-4)	social network analysis (0.23)	2019

The largest cluster (#0) has 47 members and a silhouette value of 0.937. It is labeled as *covid-19 pandemic* by both LLR and LSI, and as *lexicon level information (4.46)* by MI. The most relevant citer to the cluster is KYDROS, D (2021.0) [A content and sentiment analysis of greek tweets during the pandemic](#). SUSTAINABILITY DOI 10.3390/su13116150.

The second largest cluster (#1) has 22 members and a silhouette value of 0.886. It is labeled as *mutual correlation* by both LLR and LSI, and as *multi-label emotion classification (0.15)* by MI. The most relevant citer to the cluster is GU, Y (2019.0) [Mutual correlation attentive factors in dyadic fusion networks for speech emotion recognition](#). PROCEEDINGS OF THE 27TH ACM INTERNATIONAL CONFERENCE ON MULTIMEDIA (MM'19) DOI 10.1145/3343031.3351039.

The third largest cluster (#2) has 22 members and a silhouette value of 0.96. It is labeled as *affective word* by both LLR and LSI, and as *detecting change (0.28)* by MI. The most relevant citer to the cluster is WANG, J (2016.0) [Community-based weighted graph model for valence-arousal prediction of affective words](#). IEEE-ACM TRANSACTIONS ON AUDIO SPEECH AND LANGUAGE PROCESSING, V24, P12 DOI 10.1109/TASLP.2016.2594287.

The 4th largest cluster (#3) has 20 members and a silhouette value of 0.919. It is labeled as *current state* by LLR, *emotion mining* by LSI, and *lexicon level information (0.12)* by MI. The most relevant citer to the cluster is PIRYANI, R (2017.0) [Analytical mapping of opinion mining and sentiment analysis research during 2000-2015](#). INFORMATION PROCESSING & MANAGEMENT, V53, P29 DOI 10.1016/j.ipm.2016.07.001.

The 5th largest cluster (#4) has 20 members and a silhouette value of 0.849. It is labeled as *domain-specific feature* by LLR, *online health forum* by LSI, and *lexicon level information (0.17)* by MI. The most relevant citer to the cluster is PIRYANI, R (2017.0) [Analytical mapping of opinion mining and sentiment analysis research during 2000-2015](#). INFORMATION PROCESSING & MANAGEMENT, V53, P29 DOI 10.1016/j.ipm.2016.07.001.

The 6th largest cluster (#5) has 19 members and a silhouette value of 0.882. It is labeled as *covid-19 pandemic* by LLR, *deep learning* by LSI, and *lexicon level information (1.63)* by MI. The most relevant citer to the cluster is WANG, L (2020.0) [A sequential emotion approach for diagnosing mental disorder on social media](#). APPLIED SCIENCES-BASEL DOI 10.3390/app10051647.

The 7th largest cluster (#6) has 14 members and a silhouette value of 0.906. It is labeled as *creating emotion* by both LLR and LSI, and as *using hybrid feature extraction method (0.08)* by MI. The most relevant citer to the cluster is FARES, M (2019.0) [Difficulties and improvements to graph-based lexical sentiment analysis using lisa](#). 2019 IEEE INTERNATIONAL CONFERENCE ON COGNITIVE COMPUTING (IEEE ICC 2019) DOI 10.1109/ICCC.2019.00008.

The 8th largest cluster (#7) has 14 members and a silhouette value of 0.936. It is labeled as *topic analysis* by LLR, *gender perspective* by LSI, and *social network analysis (0.23)* by MI. The most relevant citer to the cluster is GARCIA-RUDOLPH, A (2019.0) [Stroke survivors on twitter: sentiment and topic analysis from a gender perspective](#). JOURNAL OF MEDICAL INTERNET RESEARCH DOI 10.2196/14077.

CITATION COUNTS

The top ranked item by citation counts is Devlin J (2018) in Cluster #5, with citation counts of **86**. The second one is Abd-alrazaq A (2020) in Cluster #0, with citation counts of **55**. The third is Lwin MAYOO (2020) in Cluster #0, with citation counts of **50**. The 4th is Samuel J (2020) in Cluster #0, with citation counts of **45**. The 5th is Barkur G (2020) in Cluster #0, with citation counts of **37**. The 6th is Cambria E (2016) in Cluster #5, with citation counts of **35**. The 7th is Li SJ (2020) in Cluster #0, with citation counts of **33**. The 8th is Xue J (2020) in Cluster #0, with citation counts of **33**. The 9th is Padilla JJ (2018) in Cluster #7, with citation counts of **30**. The 10th is Mohammad SM (2013) in Cluster #4, with citation counts of **30**.

Citation Counts	References	DOI	Cluster ID
86	Devlin J, 2018, PREPRINT, 0, 0		5
55	Abd-alrazaq A, 2020, J MED INTERNET RES, 22, 0	10.2196/19016	0
50	Lwin MAYOO, 2020, JMIR PUBLIC HEALTH SURVEILL, 6, 0	10.2196/19447	0
45	Samuel J, 2020, INFORMATION, 11, 0	10.3390/info11060314	0
37	Barkur G, 2020, ASIAN J PSYCHIATR, 51, 0	10.1016/j.ajp.2020.102089	0
35	Cambria E, 2016, IEEE INTELL SYST, 31, 102	10.1109/MIS.2016.31	5
33	Li SJ, 2020, INT J ENV RES PUB HE, 17, 0	10.3390/ijerph17062032	0
33	Xue J, 2020, J MED INTERNET RES, 22, 0	10.2196/20550	0
30	Padilla JJ, 2018, PLOS ONE, 13, 0	10.1371/journal.pone.0198857	7
30	Mohammad SM, 2013, COMPUT INTELL-US, 29, 436	10.1111/j.1467-8640.2012.00460.x	4

BURSTS

The top ranked item by bursts is Mohammad SM (2013) in Cluster #4, with bursts of **13.08**. The second one is Mikolov T (2013) in Cluster #2, with bursts of **11.30**. The third is Lwin MAYOO (2020) in Cluster #0, with bursts of **8.43**. The 4th is Li SJ (2020) in Cluster #0, with bursts of **8.31**. The 5th is Abd-alrazaq A (2020) in Cluster #0, with bursts of **8.29**. The 6th is Kiritchenko S (2014) in Cluster #3, with bursts of **7.63**. The 7th is Cambria E (2013) in Cluster #4, with bursts of **6.88**. The 8th is Samuel J (2020) in Cluster #0, with bursts of **6.40**. The 9th is Gore RJ (2015) in Cluster #7, with bursts of **6.40**. The 10th is Manning CD (2014) in Cluster #2, with bursts of **6.23**.

Bursts	References	DOI	Cluster ID
13.08	Mohammad SM, 2013, COMPUT INTELL-US, 29, 436	10.1111/j.1467-8640.2012.00460.x	4
11.30	Mikolov T, 2013, ADV NEURAL INF PROCE, 2, 0		2
8.43	Lwin MAYOO, 2020, JMIR PUBLIC HEALTH SURVEILL, 6, 0	10.2196/19447	0
8.31	Li SJ, 2020, INT J ENV RES PUB HE, 17, 0	10.3390/ijerph17062032	0
8.29	Abd-alrazaq A, 2020, J MED INTERNET RES, 22, 0	10.2196/19016	0
7.63	Kiritchenko S, 2014, J ARTIF INTELL RES, 50, 723	10.1613/jair.4272	3
6.88	Cambria E, 2013, IEEE INTELL SYST, 28, 15	10.1109/MIS.2013.30	4
6.40	Samuel J, 2020, INFORMATION, 11, 0	10.3390/info11060314	0
6.40	Gore RJ, 2015, PLOS ONE, 10, 0	10.1371/journal.pone.0133505	7
6.23	Manning CD, 2014, PROCEEDINGS OF 52ND ANNUAL MEETING OF THE ASSOCIATION FOR COMPUTATIONAL LINGUISTICS: SYSTEM DEMONSTRATIONS, 0, 55	10.3115/v1/p14-5010	2

DEGREE

The top ranked item by degree is Abd-alrazaq A (2020) in Cluster #0, with degree of **28**. The second one is Mikolov T (2013) in Cluster #2, with degree of **27**. The third is Poria S (2015) in Cluster #1, with degree of **24**. The 4th is Lwin MAYOO (2020) in Cluster #0, with degree of **23**. The 5th is Samuel J (2020) in Cluster #0, with degree of **23**. The 6th is Barkur G (2020) in Cluster #0, with degree of **23**. The 7th is Rao YH (2014) in Cluster #3, with degree of **21**. The 8th is Denecke K (2015) in Cluster #3, with degree of **19**. The 9th is Ravi K (2015) in Cluster #6, with degree of **19**. The 10th is Kiritchenko S (2014) in Cluster #3, with degree of **18**.

Degree	References	DOI	Cluster ID
28	Abd-alrazaq A, 2020, J MED INTERNET RES, 22, 0	10.2196/19016	0
27	Mikolov T, 2013, ADV NEURAL INF PROCE, 2, 0		2
24	Poria S, 2015, DEEP CONVOLUTIONAL N, 0, 2539	10.18653/V1/D15-1303	1
23	Lwin MAYOO, 2020, JMIR PUBLIC HEALTH SURVEILL, 6, 0	10.2196/19447	0
23	Samuel J, 2020, INFORMATION, 11, 0	10.3390/info11060314	0
23	Barkur G, 2020, ASIAN J PSYCHIATR, 51, 0	10.1016/j.ajp.2020.102089	0
21	Rao YH, 2014, NEURAL NETWORKS, 58, 29	10.1016/j.neunet.2014.05.007	3
19	Denecke K, 2015, ARTIF INTELL MED, 64, 17	10.1016/j.artmed.2015.03.006	3

19	Ravi K, 2015, KNOWL-BASED SYST, 89, 14	10.1016/j.knosys.2015.06.015	6
18	Kiritchenko S, 2014, J ARTIF INTELL RES, 50, 723	10.1613/jair.4272	3

CENTRALITY

The top ranked item by centrality is Abd-alrazaq A (2020) in Cluster #0, with centrality of **0.00**. The second one is Mikolov T (2013) in Cluster #2, with centrality of **0.00**. The third is Poria S (2015) in Cluster #1, with centrality of **0.00**. The 4th is Lwin MAYOO (2020) in Cluster #0, with centrality of **0.00**. The 5th is Samuel J (2020) in Cluster #0, with centrality of **0.00**. The 6th is Barkur G (2020) in Cluster #0, with centrality of **0.00**. The 7th is Rao YH (2014) in Cluster #3, with centrality of **0.00**. The 8th is Denecke K (2015) in Cluster #3, with centrality of **0.00**. The 9th is Ravi K (2015) in Cluster #6, with centrality of **0.00**. The 10th is Kiritchenko S (2014) in Cluster #3, with centrality of **0.00**.

Centrality	References	DOI	Cluster ID
0.00	Abd-alrazaq A, 2020, J MED INTERNET RES, 22, 0	10.2196/19016	0
0.00	Mikolov T, 2013, ADV NEURAL INF PROCE, 2, 0		2
0.00	Poria S, 2015, DEEP CONVOLUTIONAL N, 0, 2539	10.18653/V1/D15-1303	1
0.00	Lwin MAYOO, 2020, JMIR PUBLIC HEALTH SURVEILL, 6, 0	10.2196/19447	0
0.00	Samuel J, 2020, INFORMATION, 11, 0	10.3390/info11060314	0
0.00	Barkur G, 2020, ASIAN J PSYCHIATR, 51, 0	10.1016/j.ajp.2020.102089	0
0.00	Rao YH, 2014, NEURAL NETWORKS, 58, 29	10.1016/j.neunet.2014.05.007	3
0.00	Denecke K, 2015, ARTIF INTELL MED, 64, 17	10.1016/j.artmed.2015.03.006	3
0.00	Ravi K, 2015, KNOWL-BASED SYST, 89, 14	10.1016/j.knosys.2015.06.015	6
0.00	Kiritchenko S, 2014, J ARTIF INTELL RES, 50, 723	10.1613/jair.4272	3

SIGMA

The top ranked item by sigma is Abd-alrazaq A (2020) in Cluster #0, with sigma of **1.00**. The second one is Mikolov T (2013) in Cluster #2, with sigma of **1.00**. The third is Poria S (2015) in Cluster #1, with sigma of **1.00**. The 4th is Lwin MAYOO (2020) in Cluster #0, with sigma of **1.00**. The 5th is Samuel J (2020) in Cluster #0, with sigma of **1.00**. The 6th is Barkur G (2020) in Cluster #0, with sigma of **1.00**. The 7th is Rao YH (2014) in Cluster #3, with sigma of **1.00**. The 8th is Denecke K (2015) in Cluster #3, with sigma of **1.00**. The 9th is Ravi K (2015) in Cluster #6, with sigma of **1.00**. The 10th is Kiritchenko S (2014) in Cluster #3, with sigma of **1.00**.

Sigma	References	DOI	Cluster ID
1.00	Abd-alrazaq A, 2020, J MED INTERNET RES, 22, 0	10.2196/19016	0
1.00	Mikolov T, 2013, ADV NEURAL INF PROCE, 2, 0		2
1.00	Poria S, 2015, DEEP CONVOLUTIONAL N, 0, 2539	10.18653/V1/D15-1303	1
1.00	Lwin MAYOO, 2020, JMIR PUBLIC HEALTH SURVEILL, 6, 0	10.2196/19447	0
1.00	Samuel J, 2020, INFORMATION, 11, 0	10.3390/info11060314	0
1.00	Barkur G, 2020, ASIAN J PSYCHIATR, 51, 0	10.1016/j.ajp.2020.102089	0

1.00	Rao YH, 2014, NEURAL NETWORKS, 58, 29	10.1016/j.neunet.2014.05.007	3
1.00	Denecke K, 2015, ARTIF INTELL MED, 64, 17	10.1016/j.artmed.2015.03.006	3
1.00	Ravi K, 2015, KNOWL-BASED SYST, 89, 14	10.1016/j.knosys.2015.06.015	6
1.00	Kiritchenko S, 2014, J ARTIF INTELL RES, 50, 723	10.1613/jair.4272	3