## LDA2Net: Digging under the surface of COVID-19 topics in literature

Topic 62 companion sheet

G. Minello C.R.M.A. Santagiustina M. Warglien

This file contains the following supplementary information for Topic 62 of the manuscript "*LDA2Net*: Digging under the surface of COVID-19 topics in scientific literature":

- Human label and automatic n-gram label proposals (Table 1)
- Summary measures (Table 2)
- Network of top 25 bigrams (Figure 1)
- Wordclouds of top 25 words by node relevance measure (Figure 2)
- Wordclouds of top 25 bigrams by edge relevance measure (Figure 3)
- Filtered (0.99 percentile) topic network (Figure 4)

Table 1: Human and automatic label proposals. Automatic label candidate for largest word community of the topic. In parenthesis: absolute frequency of the walk out of a sample of size 1000.

Human label	2-gram label	3-gram label	4-gram label
sociopolitical aspects	political->cultural $(6.5\%)$	political->questions->social $(3.6\%)$	ethical->issues->legal->political $(2.8\%)$

Here follows the set of topic-specific measures that have been used to classify the topic and to analyse its structural properties (see manuscript for details):

Table 2: Summary measures

	JSD	Mean propensity	Variance propensity	Modularity	Barrat Clustering Coeff.
value	0.498271 $4$	0.011065	0.000819	0.313034	0.444295
rank		120	113	114	1

Based on the aforementioned measures, Topic 62 has been classified as a SPECIALIZED topic.

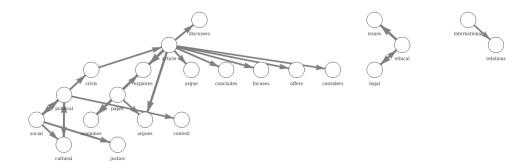


Figure 1: Network of top 25 bigrams (i.e., edges) by weight.



discusses moral trade relations issues de argues crisis de practices legal social justice political explores policy public public public public public public public public religious

concludes
cultural action
legal justice
sargue political
context issues social in success
sargues policy
legal justice
sargues policy
legal justice
sargues policy
legal justice
sargues policy
legal justice
legal justice
sargues political
legal justice
le



addresses
argues discusses
guestions
gpart 3political examine
gexplores issues
article explore
seeks author gerisis
reflects argue cultural
ethical offers draws social &

practices
religious international
context paper
paper
state
moral o cot paper
moral

Out-degree Betweenness PageRank

Figure 2: Top 25 unigrams (i.e., nodes) by measure.



paper>article of article>article>article>article>argue of article>argue of article>argue of article>cultural of article>cultural of article>cultural of article>crisis>context>article of political>political>political>political>political>political>political|political|political|political|crisis|context>article|crisis|context>article|crisis|context>article|crisis|context>article|crisis|context>article|crisis|context>article|crisis|context>article|crisis|context>article|crisis|context>article|crisis|context>article|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|crisis|cris

article>considers
politicals-corriext
politicals-politicals-corriext
politicals-corriext
politicals-politicals-cultural
cultural-political article-argue
article-discusses article-offers
paper-expiores
paper-examines
legals-ethical article-focuses
international-relations

Figure 3: Top 25 bigrams (i.e., edges) by measure.

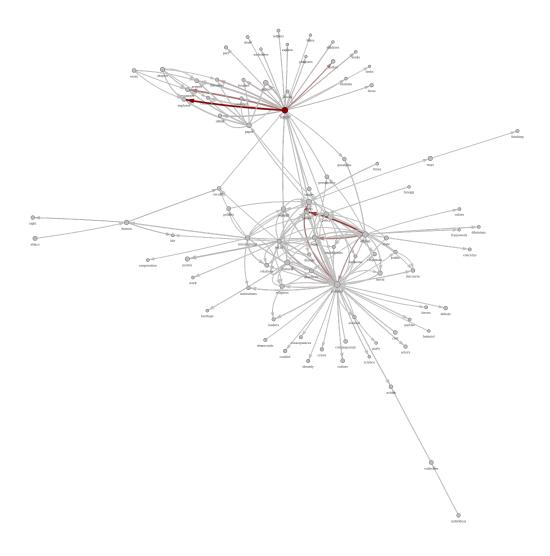


Figure 4: Filtered topic network (by weight). Layout based on Fruchterman-Reingold algorithm. Node size is proportional to topic-specific word probability provided by LDA. Edge width is proportional to topic-specific bigram weight provided by LDA2Net method. Node and edge color represent their betweenness centrality. Isolated nodes have been removed after filtration.