Mantel test results

X Y

Law dataset Nonlaw dataset

Covid science Psychology (40 articles)

Covid science Psychology (10 articles)

Covid science Psychology (20 articles)

mantel (X’, Y’)

where X’, Y’ are pairwise distances between top words respectively.

Results generated from mantel test with 10 words network and 20-word network

10-word network: By comparing Top 5 words from each dataset

20-word network: By comparing Top 10 words from each dataset

Mantel-Test for Law and Non-Law datasets (4 articles dataset)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article Level | 0.45342 | 0.0127 | 2.935799 | 0.12178 | 0.1489 | 1.06275 |
| 2-3 Paragraphs | -0.21510 | 0.714285 | -0.68497 | 0.06725 | 0.3282 | 0.40405 |
| Paragraph level | -0.29385 | 0.878 | -1.22018 | -0.31741 | 0.9493 | -1.71181 |

Mantel test for science – psychology (10 articles dataset)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article Level | -0.31881 | 0.87864 | -1.20322 | -0.37001 | 0.96258 | -1.69272 |
| 2-3 Paragraphs | -0.12443 | 0.6625 | -0.52720 | -0.16750 | 0.88753 | -1.14787 |
| Paragraph level | -0.32813 | 0.8417 | -1.00066 | -0.07063 | 0.61801 | -0.32868 |

Mantel test for science – psychology (15 articles dataset)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article Level | -0.55832 | 0.9722 | -1.76688 | -0.41870 | 0.9848 | -1.91222 |
| 2-3 Paragraphs | -0.12443 | 0.6549 | -0.51143 | -0.15851 | 0.8535 | -1.04880 |
| Paragraph level | -0.36722 | 0.8156 | -1.09169 | -0.47758 | 0.9934 | -2.17452 |

Mantel test for science – psychology (20 articles dataset)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article Level | -0.45097 | 0.92318 | -1.40863 | -0.45208 | 0.99278 | -2.32042 |
| 2-3 Paragraphs | -0.12443 | 0.65294 | -0.51520 | -0.15851 | 0.85532 | -1.05703 |
| Paragraph level | -0.47229 | 0.92942 | -1.43762 | -0.26062 | 0.88279 | -1.19640 |

Mantel test for science – psychology (30 articles dataset)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article Level | -0.44085 | 0.9074 | -1.33729 | -0.13052 | 0.7165 | -0.58437 |
| 2-3 Paragraphs | -0.12443 | 0.6558 | -0.51814 | -0.16750 | 0.8834 | -1.15334 |
| Paragraph level | -0.42116 | 0.9493 | -1.29004 | -0.36792 | 0.9549 | -1.65607 |

Mantel test for science – psychology (40 articles dataset)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article Level | -0.10233 | 0.6703 | -0.45536 | 0.16347 | 0.3104 | 0.5929 |
| 2-3 Paragraphs | -0.16750 | 0.8881 | -1.14848 | -0.2556 | 1.0 | -1.1348 |
| Paragraph level | -0.29198 | 0.9005 | -1.29744 | -0.04745 | 0.5642 | -0.17695 |

Mantel test results vertical comparison

X Y

Article 2-3 p

Article paragraph

2-3 p paragraph

mantel (X”, Y”)

where X”, Y” are pairwise distances between top words respectively.

For each dataset Law dataset, non-Law dataset, Covid science dataset (40 articles and 20 articles), Covid psychology dataset (40 articles and 20 articles.

Results generated from mantel test with 10 words network and 20-word network

10-word network: By comparing Top 5 words from each dataset

20-word network: By comparing Top 10 words from each dataset

Law dataset

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | -0.09916 | 0.5375 | -0.36904 | -0.16939 | 0.9614 | -1.58676 |
| Article ---> Paragraph | 0.30533 | 0.183333 | 1.0028 | 0.29004 | 0.1036 | 1.44017 |
| 2-3 P ---> Paragraph | 0.21549 | 0.14583 | 1.21009 | 0.19494 | 0.0558 | 1.68612 |

Non-Law dataset

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | 0.08840 | 0.2401 | 0.72033 | 0.08802 | 0.2293 | 0.78101 |
| Article ---> Paragraph | 0.43517 | 0.01626 | 1.81199 | 0.55781 | 0.001 | 2.73972 |
| 2-3 P ---> Paragraph | -0.24308 | 0.7751 | -0.8898 | -0.11016 | 0.7182 | -0.56198 |

Covid science dataset (15 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | 0.27763 | 0.1765, | 1.06224 | 0.13258 | 0.2438 | 0.72441 |
| Article ---> Paragraph | 0.69915 | 0.01805 | 1.78310 | 0.49915 | 0.0257 | 1.66534 |
| 2-3 P ---> Paragraph | 0.22988 | 0.1795 | 1.02993 | 0.02976 | 0.4411 | 0.18913 |

Covid psychology dataset (15 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | -0.63556 | 0.9678 | -2.00749 | -0.28840 | 0.9284 | -1.47024 |
| Article ---> Paragraph | 0.37749 | 0.17301 | 0.94661 | 0.43386 | 0.0024 | 1.85060 |
| 2-3 P ---> Paragraph | -0.02156 | 0.4867 | -0.06129 | -0.22712 | 0.8713 | -1.17128 |

Covid science dataset (20 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | 0.28155 | 0.1844 | 1.04480 | 0.18832 | 0.1602 | 1.03448 |
| Article ---> Paragraph | 0.78462 | 0.02916 | 1.83809 | 0.48517 | 0.0043 | 1.67499 |
| 2-3 P ---> Paragraph | 0.26279 | 0.1414 | 1.17312 | -0.00810 | 0.5304 | -0.05190 |

Covid psychology dataset (20 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | -0.12292 | 0.6418 | -0.38989 | -0.22976 | 0.873 | -1.17834 |
| Article ---> Paragraph | 0.65826 | 0.0169 | 1.93129 | 0.69237 | 0.0004 | 2.99234 |
| 2-3 P ---> Paragraph | 0.02425 | 0.481 | 0.06582 | 0.05196 | 0.412 | 0.25059 |

Covid science dataset (30 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | 0.27763 | 0.1765 | 1.06224 | 0.13258 | 0.2438 | 0.72441 |
| Article ---> Paragraph | 0.69915 | 0.01805 | 1.78310 | 0.49915 | 0.0257 | 1.66534 |
| 2-3 P ---> Paragraph | 0.22988 | 0.1795 | 1.02993 | 0.02976 | 0.4411 | 0.18913 |

Covid psychology dataset (30 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | -0.63556 | 0.9678 | -0.38989 | -0.28840 | 0.9284 | -1.47024 |
| Article ---> Paragraph | 0.37749 | 0.17301 | 0.94661 | 0.43386 | 0.0024 | 1.85060 |
| 2-3 P ---> Paragraph | -0.02156 | 0.4867 | -0.06129 | -0.22712 | 0.8713 | -1.17128 |

Covid science dataset (40 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | 0.150793 | 0.3091 | 0.57597 | 0.10640 | 0.284 | 0.59211 |
| Article ---> Paragraph | 0.76665 | 0.0047 | 1.93097 | 0.53417 | 0.0091 | 1.80730 |
| 2-3 P ---> Paragraph | 0.18428 | 0.2865 | 0.67298 | 0.00396 | 0.5062 | 0.01858 |

Covid science dataset (40 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | 0.150793 | 0.3091 | 0.57597 | 0.10640 | 0.284 | 0.59211 |
| Article ---> Paragraph | 0.76665 | 0.0047 | 1.93097 | 0.53417 | 0.0091 | 1.80730 |
| 2-3 P ---> Paragraph | 0.18428 | 0.2865 | 0.67298 | 0.00396 | 0.5062 | 0.01858 |

Covid psychology dataset (40 articles)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mantel Test | 10-word network | | | 20-word network | | |
| r | p-value | Z-score | r | p-value | z-score |
| Article ---> 2-3 P | -0.48586 | 0.9388 | -1.62018 | -0.35639 | 0.9624 | -1.80561 |
| Article ---> Paragraph | 0.23856 | 0.30337 | 0.60114 | 0.51077 | 0.0013 | 1.96954 |
| 2-3 P ---> Paragraph | -0.25881 | 0.762 | -0.87218 | -0.22467 | 0.8612 | -1.11457 |