Sample size by primary theme and time period:

time\_period 2017-2019 2023-2024

primary\_theme

Other 18759 12648

humanities\_other 3417 1108

humanities\_philosophy 1655 795

humanities\_psychology 1962 981

lgbtq 540 884

masculinity 4446 3027

peterson 17212 5791

politics\_culture 5941 3433

politics\_events 1099 1318

self-help 1552 1072

women 874 684

Basic statistics by primary theme and time period:

count mean std min 25% 50% 75% max

primary\_theme time\_period

Other 2017-2019 18759.0 0.052539 0.434110 -0.9977 -0.12800 0.00000 0.368000 0.9933

2023-2024 12648.0 0.016081 0.458175 -0.9984 -0.29600 0.00000 0.361200 0.9972

humanities\_other 2017-2019 3417.0 0.334445 0.563265 -0.9937 0.00000 0.45490 0.851900 0.9971

2023-2024 1108.0 0.341233 0.614595 -0.9943 0.00000 0.55065 0.890475 0.9946

humanities\_philosophy 2017-2019 1655.0 0.269092 0.530598 -0.9877 0.00000 0.27320 0.773900 0.9970

2023-2024 795.0 0.284058 0.584003 -0.9957 0.00000 0.35270 0.854550 0.9969

humanities\_psychology 2017-2019 1962.0 0.292759 0.591687 -0.9920 0.00000 0.42130 0.850000 0.9958

2023-2024 981.0 0.238969 0.609736 -0.9945 -0.27320 0.31820 0.824700 0.9959

lgbtq 2017-2019 540.0 -0.004185 0.512061 -0.9963 -0.38790 0.00000 0.361200 0.9863

2023-2024 884.0 -0.021049 0.595874 -0.9948 -0.55740 0.00000 0.445650 0.9949

masculinity 2017-2019 4446.0 0.166518 0.649435 -0.9978 -0.39180 0.20230 0.813600 0.9981

2023-2024 3027.0 0.174831 0.695360 -0.9953 -0.50400 0.31820 0.873650 0.9990

peterson 2017-2019 17212.0 0.189019 0.533917 -0.9980 0.00000 0.00000 0.670500 0.9974

2023-2024 5791.0 0.239482 0.577858 -0.9969 0.00000 0.27320 0.796400 0.9973

politics\_culture 2017-2019 5941.0 0.058673 0.615338 -0.9979 -0.47670 0.00000 0.636100 0.9968

2023-2024 3433.0 0.007217 0.624938 -0.9981 -0.55740 0.00000 0.571900 0.9959

politics\_events 2017-2019 1099.0 0.121714 0.592588 -0.9937 -0.29600 0.00000 0.676150 0.9932

2023-2024 1318.0 -0.029332 0.599880 -0.9987 -0.52670 0.00000 0.440400 0.9944

self-help 2017-2019 1552.0 0.368837 0.668389 -0.9955 -0.05695 0.64500 0.923025 0.9979

2023-2024 1072.0 0.393229 0.663186 -0.9969 0.00000 0.72730 0.933550 0.9984

women 2017-2019 874.0 0.046535 0.580810 -0.9964 -0.40190 0.00000 0.510600 0.9943

2023-2024 684.0 0.033014 0.623668 -0.9983 -0.45880 0.00000 0.659700 0.9971

Stance distribution:

time\_period 2017-2019 2023-2024

stance

negative 14587 10976

neutral 34740 16862

positive 8130 3903

Sentiment category distribution:

time\_period 2017-2019 2023-2024

sentiment\_category

Negative 14904 9787

Neutral 16710 8182

Positive 25843 13772

Virality score statistics:

count mean std min 25% 50% 75% max

time\_period

2017-2019 57457.0 62.424544 238.459003 0.0 4.0 12.0 38.0 20668.0

2023-2024 31741.0 86.525881 226.289644 0.0 2.0 8.0 54.0 4187.0

Checking assumptions for each theme...

Assumption Check Results:

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peterson | N1: 17212 N2: 5791 | Welch's t-test (robust for large samples)

humanities\_philosophy | N1: 1655 N2: 795 | Welch's t-test (robust for large samples)

Other | N1: 18759 N2: 12648 | Welch's t-test (robust for large samples)

politics\_culture | N1: 5941 N2: 3433 | Welch's t-test (robust for large samples)

masculinity | N1: 4446 N2: 3027 | Welch's t-test (robust for large samples)

humanities\_psychology | N1: 1962 N2: 981 | Welch's t-test (robust for large samples)

lgbtq | N1: 540 N2: 884 | Welch's t-test (robust for large samples)

humanities\_other | N1: 3417 N2: 1108 | Welch's t-test (robust for large samples)

self-help | N1: 1552 N2: 1072 | Welch's t-test (robust for large samples)

women | N1: 874 N2: 684 | Welch's t-test (robust for large samples)

politics\_events | N1: 1099 N2: 1318 | Welch's t-test (robust for large samples)

Performing statistical tests...

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STANCE ANALYSIS

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VIRALITY CORRELATION ANALYSIS

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Correlation (2017-2019): -0.037

Correlation (2023-2024): -0.082

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STATISTICAL TEST RESULTS

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Theme Test N\_2017 N\_2023 Mean\_2017 Mean\_2023 Difference Effect\_Size p\_value p\_bonferroni p\_fdr Significant Sig\_Bonferroni Sig\_FDR

peterson Welch's t-test 17212 5791 0.189 0.239 0.050 0.093 0.000000 0.000000 0.000000 Yes Yes Yes

Other Welch's t-test 18759 12648 0.053 0.016 -0.036 -0.082 0.000000 0.000000 0.000000 Yes Yes Yes

politics\_events Welch's t-test 1099 1318 0.122 -0.029 -0.151 -0.253 0.000000 0.000000 0.000000 Yes Yes Yes

politics\_culture Welch's t-test 5941 3433 0.059 0.007 -0.051 -0.083 0.000113 0.001247 0.000312 Yes Yes Yes

humanities\_psychology Welch's t-test 1962 981 0.293 0.239 -0.054 -0.090 0.022816 0.250979 0.050196 Yes No No

self-help Welch's t-test 1552 1072 0.369 0.393 0.024 0.037 0.356007 1.000000 0.652679 No No No

humanities\_philosophy Welch's t-test 1655 795 0.269 0.284 0.015 0.027 0.541000 1.000000 0.727906 No No No

lgbtq Welch's t-test 540 884 -0.004 -0.021 -0.017 -0.030 0.571385 1.000000 0.727906 No No No

masculinity Welch's t-test 4446 3027 0.167 0.175 0.008 0.012 0.602412 1.000000 0.727906 No No No

women Welch's t-test 874 684 0.047 0.033 -0.014 -0.023 0.661733 1.000000 0.727906 No No No

humanities\_other Welch's t-test 3417 1108 0.334 0.341 0.007 0.012 0.744542 1.000000 0.744542 No No No

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STANCE ANALYSIS RESULTS

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stance mean\_2017 mean\_2023 difference p\_value effect\_size n\_2017 n\_2023

positive 0.564268 0.611957 0.047688 3.563698e-08 0.107680 8130 3903

negative -0.162648 -0.183824 -0.021176 3.123189e-03 -0.037491 14587 10976

neutral 0.173290 0.177832 0.004542 3.195777e-01 0.009442 34740 16862

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VIRALITY CORRELATION RESULTS

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Correlation 2017-2019: -0.037

Correlation 2023-2024: -0.082

Difference significant: True

p-value: 0.000000

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SUMMARY

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Total themes tested: 11

Significant (uncorrected p < 0.05): 5

Significant (Bonferroni corrected): 4

Significant (FDR corrected): 4

Bonferroni alpha level: 0.004545

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CREATING VISUALIZATIONS

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Results saved to multiple Excel files:

- sentiment\_analysis\_results.xlsx (main theme analysis)

- stance\_analysis\_results.xlsx (stance analysis)

- virality\_analysis\_results.xlsx (virality correlation analysis)

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ANALYSIS COMPLETE - ADDITIONAL INSIGHTS

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Key Findings:

Themes with significant sentiment changes: 5

- Other: decreased by 0.036 (p=0.000000)

- politics\_events: decreased by 0.151 (p=0.000000)

- peterson: increased by 0.050 (p=0.000000)

- politics\_culture: decreased by 0.051 (p=0.000113)

- humanities\_psychology: decreased by 0.054 (p=0.022816)

Themes with notable effect sizes (>0.2): 1

- politics\_events: Cohen's d = -0.253

Total posts analyzed: 89198

2017-2019 period: 57457 posts

2023-2024 period: 31741 posts

Analysis files have been saved. You can now:

1. Review the Excel files for detailed results

2. Use the visualizations to understand the patterns

3. Access analysis.results for programmatic analysis

4. Run additional custom analyses using the loaded data