

MT4113 - Report

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I confirm that the following report and associated code is my own work, except where clearly indicated.

Table 1: Size of Student's T Test

Sample Size	SD Difference					SD Difference(record round to 0)				
	0	3	5	8	10	0	3	5	8	10
10	0	0.017	0.025	0.032	0.032	0	0.014	0.025	0.033	0.035
50	0	0.009	0.022	0.031	0.034	0	0.011	0.017	0.033	0.035
100	0	0.012	0.020	0.023	0.023	0	0.014	0.020	0.023	0.024
150	0	0.019	0.027	0.027	0.031	0	0.019	0.026	0.029	0.030
200	0	0.009	0.021	0.024	0.025	0	0.010	0.017	0.022	0.028
300	0	0.010	0.022	0.031	0.034	0	0.011	0.025	0.033	0.036
400	0	0.019	0.029	0.036	0.038	0	0.018	0.030	0.040	0.041
500	0	0.016	0.025	0.034	0.039	0	0.015	0.025	0.031	0.038
700	0	0.013	0.022	0.029	0.034	0	0.013	0.020	0.031	0.033
1000	0	0.015	0.029	0.033	0.036	0	0.013	0.028	0.034	0.036

1 Abstract

More than 17 million people voted to leave the EU in 2016 Referendum in the UK. This statistical report investigated the difference of approval rates of Brexit in England and the rest of the UK by carrying out both parametric and non-parametric tests. Particularly, Monte Carlo simulation is conducted on the referendum dataset by regions, to research the properties of those statistical tests under a range of different scenarios. *add a bit summary of result*

2 Introduction

Hundreds of thousands of people marched to London's Parliament Square for a referendum on the final Brexit deal in late October(BBC News, 2018). In the EU referendum in 2016, approximately 52%, or more than 17 million people in the UK, voted to leave the EU (Becker, Fetzer & Novy, 2017). What did voters in different regions of the UK vote for?

Were approval rates of Brexit greater in England or rest of the UK in 2016 referendum?

3 Methodology

4 Result and Discussion

5 Conclusion

6 Reference

Appendix

BBC News (2018) *People's Vote march: Hundreds of thousands attend London protest*. [Online]. Available from: <https://www.bbc.co.uk/news/uk-45925542>.

Table 2: Size of Mann-Whitney U Test

Sample Size	SD Difference					SD Difference(record round to 0)				
	0	3	5	8	10	0	3	5	8	10
10	0	0.029	0.041	0.049	0.049	0	0.031	0.047	0.054	0.057
50	0	0.028	0.046	0.054	0.057	0	0.031	0.047	0.056	0.058
100	0	0.028	0.048	0.063	0.065	0	0.029	0.045	0.062	0.070
150	0	0.033	0.049	0.057	0.057	0	0.032	0.045	0.059	0.057
200	0	0.026	0.045	0.056	0.061	0	0.028	0.047	0.055	0.061
300	0	0.036	0.051	0.066	0.071	0	0.034	0.056	0.067	0.075
400	0	0.043	0.064	0.074	0.080	0	0.044	0.064	0.076	0.080
500	0	0.034	0.051	0.064	0.066	0	0.027	0.051	0.063	0.069
700	0	0.029	0.048	0.054	0.057	0	0.034	0.050	0.058	0.062
1000	0	0.038	0.054	0.065	0.071	0	0.037	0.056	0.063	0.070

Becker, S.O., Fetzer, T. & Novy, D. (2017) Who voted for Brexit? A comprehensive district-level analysis. *Economic Policy*. [Online] Available from: doi:10.1093/epolic/eix012.