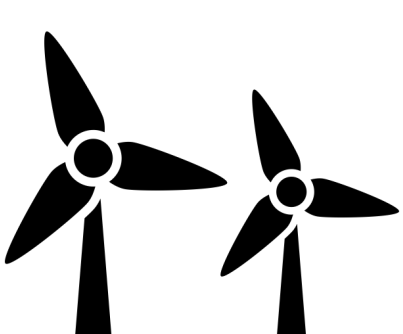
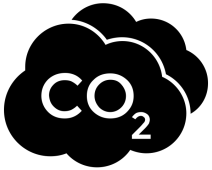
Continent Intelligence

An investigation into the differences between the continents of the world.





Facts and Figures

1. Large source of CO2 emission - Human activity
2. 40 billion tonnes of CO2 every year
3. Global Carbon Budgets and the Implications for Climate Mitigation Targets - 2015
4. Gather data to inform research
5. Draw more efficient policies and regulations to decrease Co2 emissions

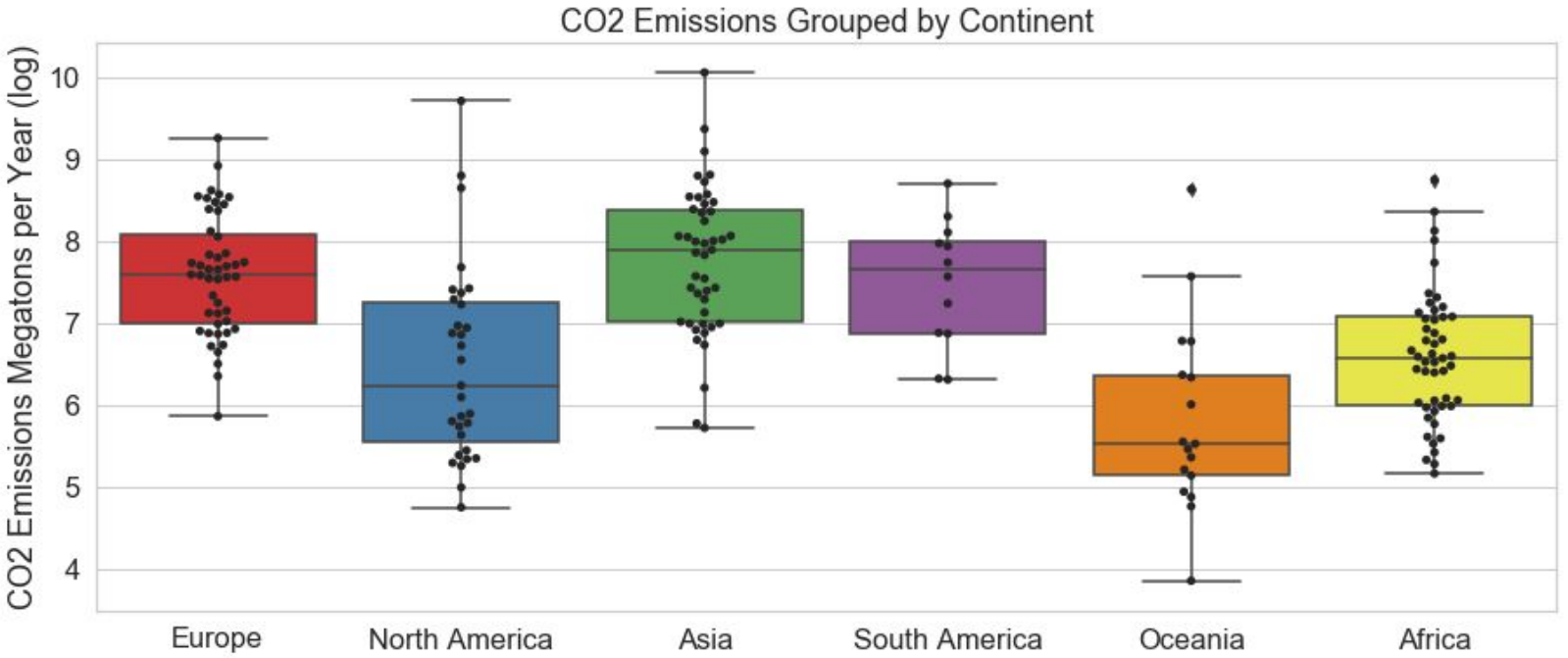
Comparisons Across Continents

1. the **CO2 emissions** per year?
2. the **amount of petroleum** used per day?
3. the **percentage of green energy** produced?
4. the **military expenditure** as a % of GDP?
5. the **number of internet users**?

Data was gathered from the **CIA World Factbook...**

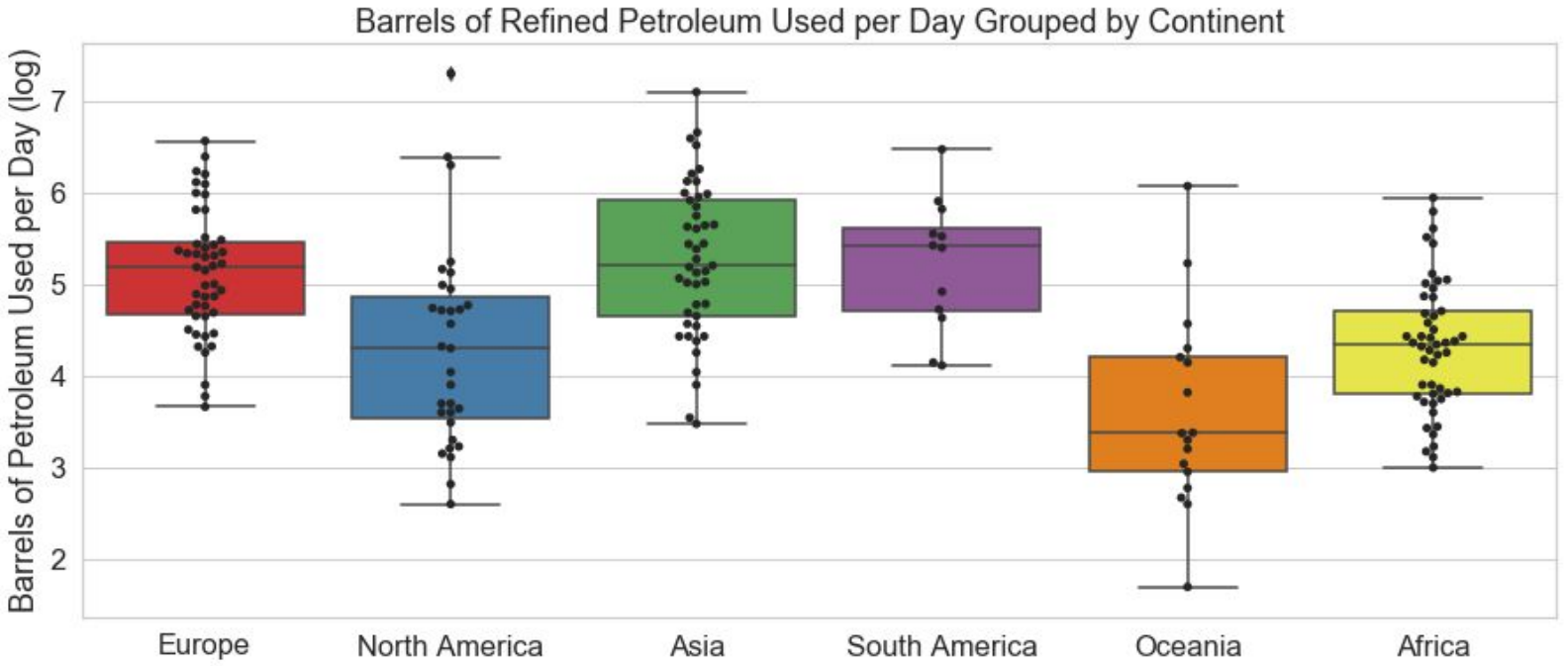
H0: there are **no** continental differences in CO2 emissions.

Ha: there are continental differences in CO2 emissions.



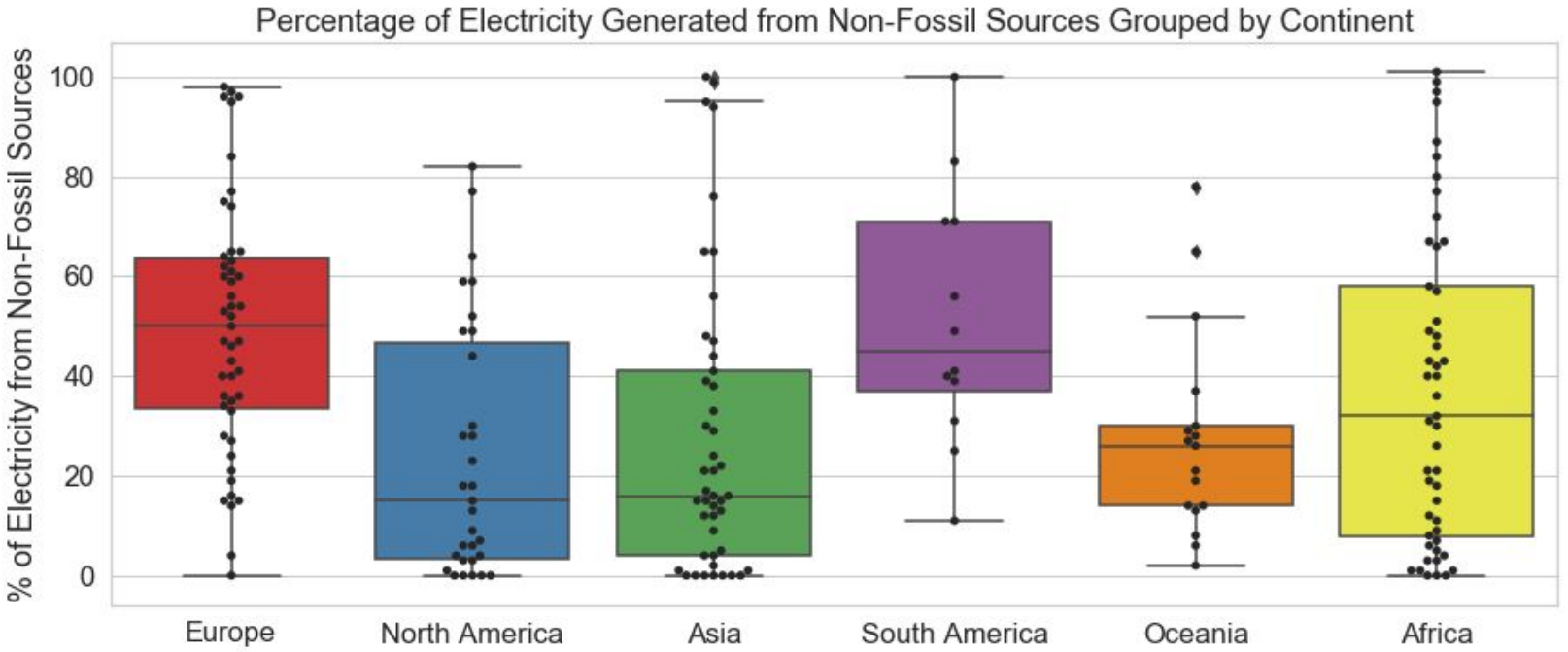
H0: there are **no** continental differences in refined petroleum use.

Ha: there are continental differences in refined petroleum use.



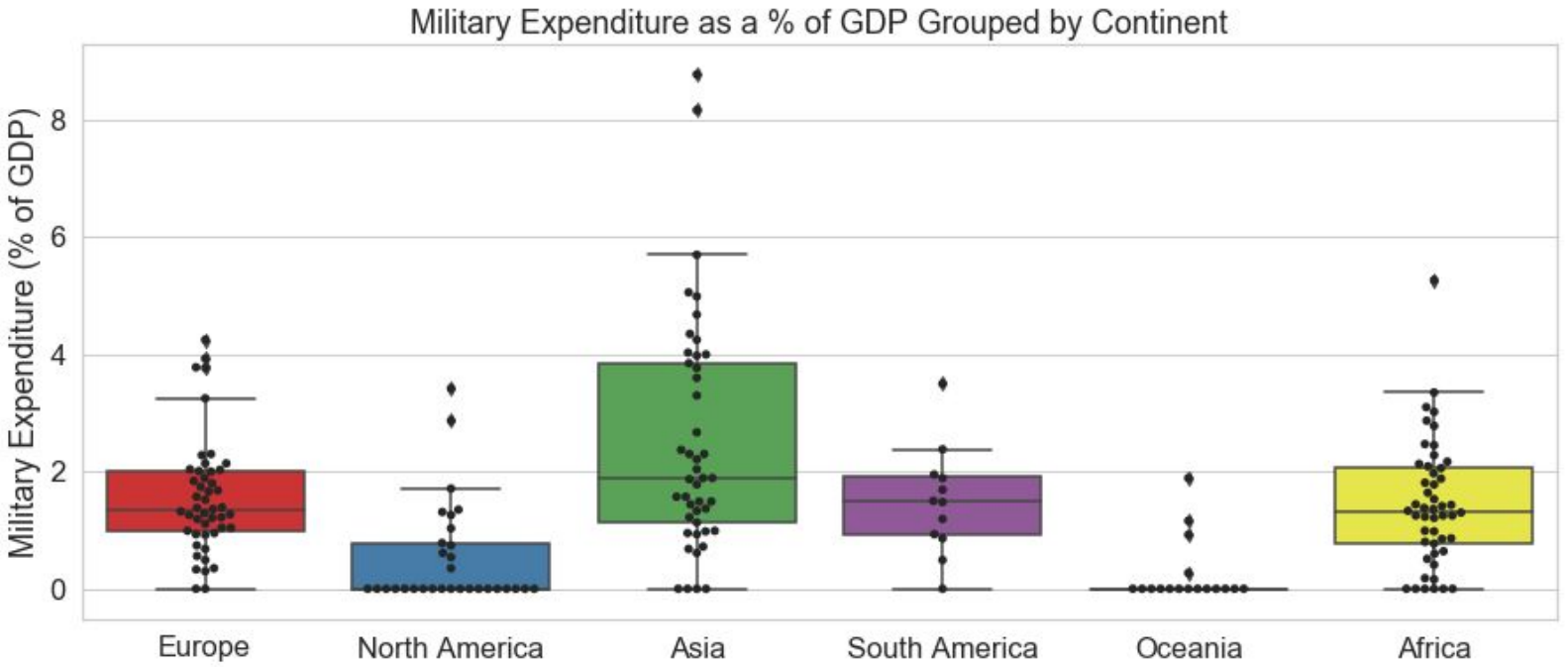
H0: there are **no** continental differences in renewable energy production.

Ha: there are continental differences in renewable energy production.



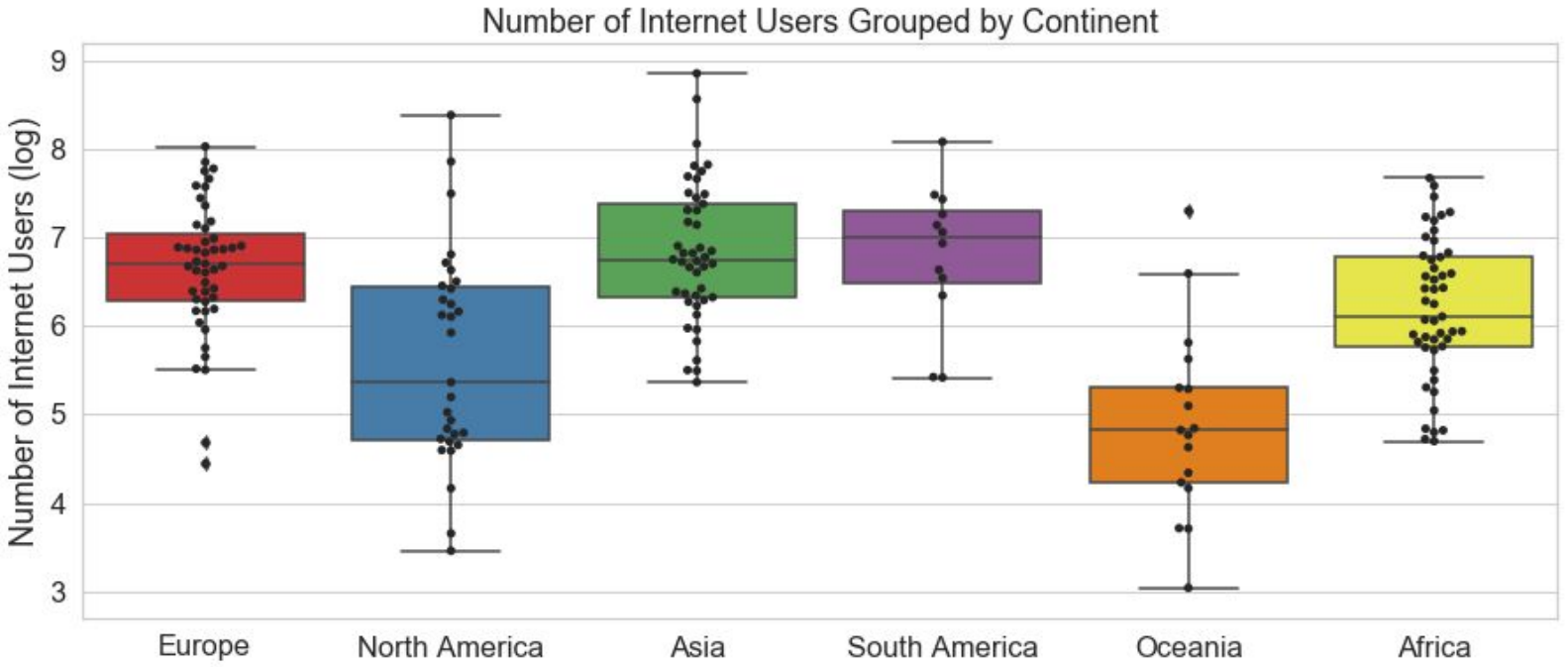
H0: there are **no** continental differences in military expenditure as % of GDP.

Ha: there are continental differences in military expenditure as % of GDP.



H0: there are **no** continental differences in the number of internet users a country has.

Ha: there are continental differences in in the number of internet users a country has.



Analysis of Variance (ANOVA):

	F-statistic	PR(>F)	Significance (α = 0.01021)
Carbon Emissions	1.25	0.29	No
Refined Petroleum	1.38	0.23	No
Non-fossil Electricity	5.25	0.00	Yes
Internet Users	1.84	0.11	No

Tukey's Test:

	Reject Null Hypothesis
Carbon Emissions	No Pairs
Refined Petroleum	No Pairs
Non-fossil Electricity	Europe - Asia Europe - North America
Internet Users	No Pairs

Future Work:

1. Investigate a wider range of variables already gathered from the CIA World Factbook and determine how they relate to carbon emissions.

2. Create a predictive model that can inform each continent on how to address the problems of resource management and environmental impact.

Thank you for listening!

We are happy to take any questions you may have.

Appendix 1 - Bonfferoni Correction

Initial $\alpha = 0.05$

To avoid the cumulative Type 1 error effect when conducting multiple comparisons, a bonfferoni correction was conducted.

Corrected $\alpha = 0.01021$

Appendix 2 - Homoscedasticity

	P-value
Carbon Emissions	0.32
Refined Petroleum	0.26
Non-fossil Electricity	0.28
Military Expenditure	**1.60e-5**
Internet Users	0.14

The residuals of military expenditure were heteroscedastic and therefore this variable was omitted from the anova testing.

Appendix 3 - CO2 Heat Map