Analysis of oil

2019-04-03

Data Prep

1. Dropped records with missing oil values at t1 and t2. Call the resulting data set `df`.
2. Separated `df` into two subsets:
   - `df_tiny`: oil < 1000 at t1 or t2.
   - `df_main`: oil >= 1000 at t1 and t2
3. Created long-format version:
   - `df_long`: long-format version of the full set `df`
   - `df_tiny_long`: long-format version of the subset `df_tiny`
   - `df_main_long`: long-format version of the subset `df_main`

Analyze the full set `df_tiny`

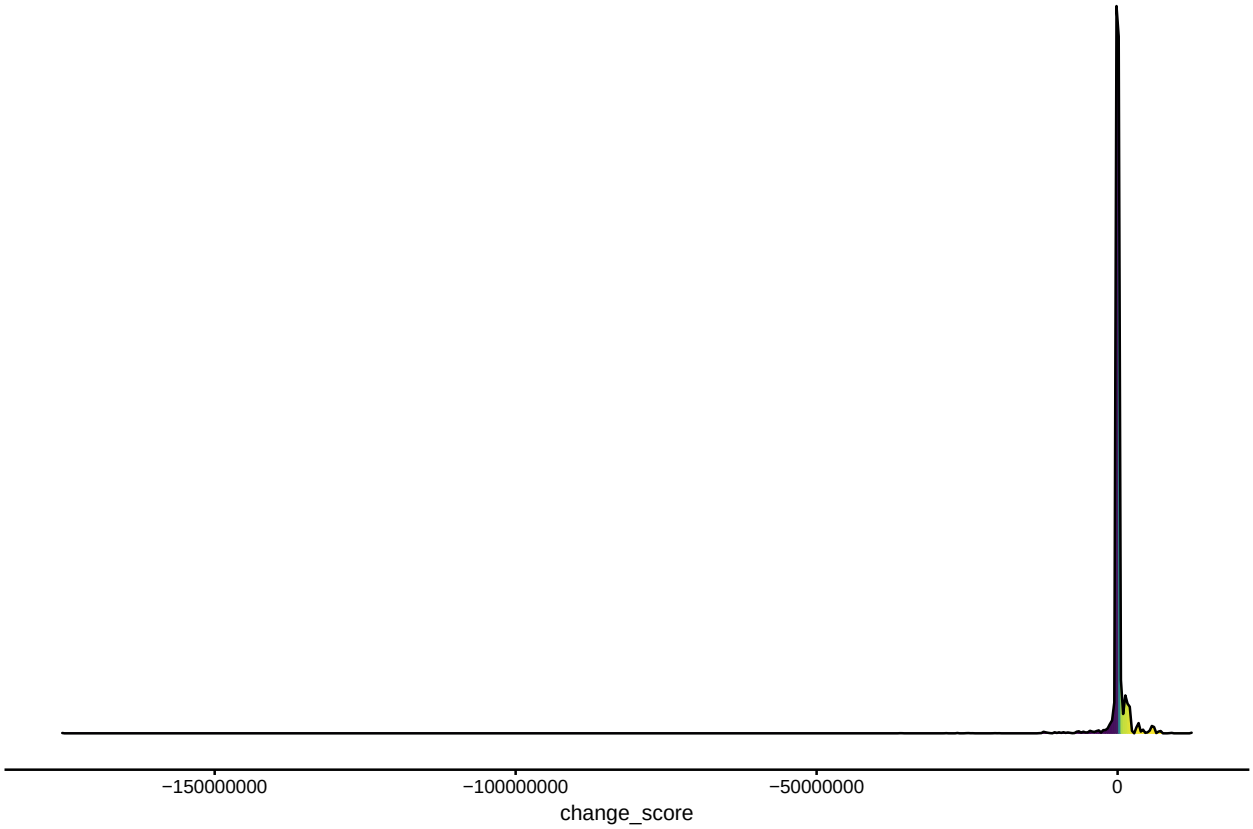
Table 1: Sample Summary Statistics of oil

time	n_tribes	n	mean	SEM
t1	179	49914	213568.6	11916.596
t2	179	49914	255272.3	3989.429

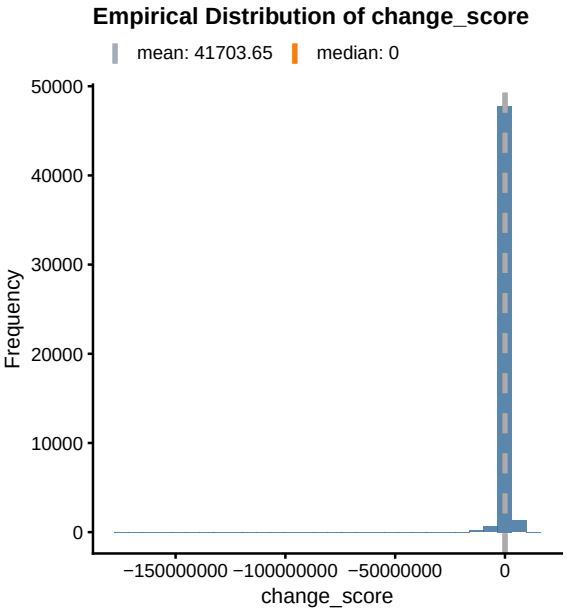
Q1. Is there a difference between t1 and t2?

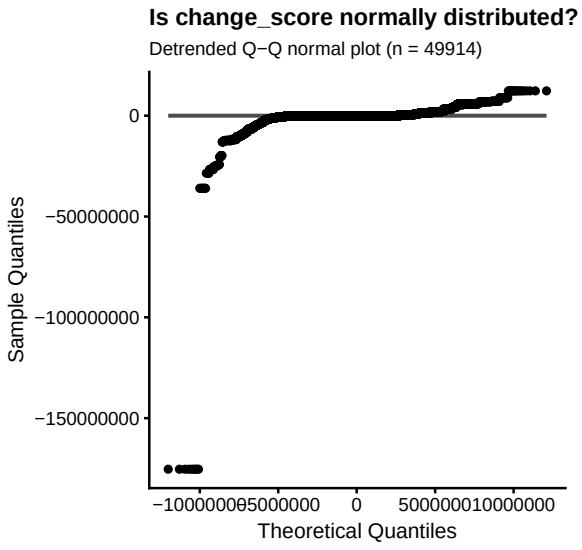
Descriptive Analysis

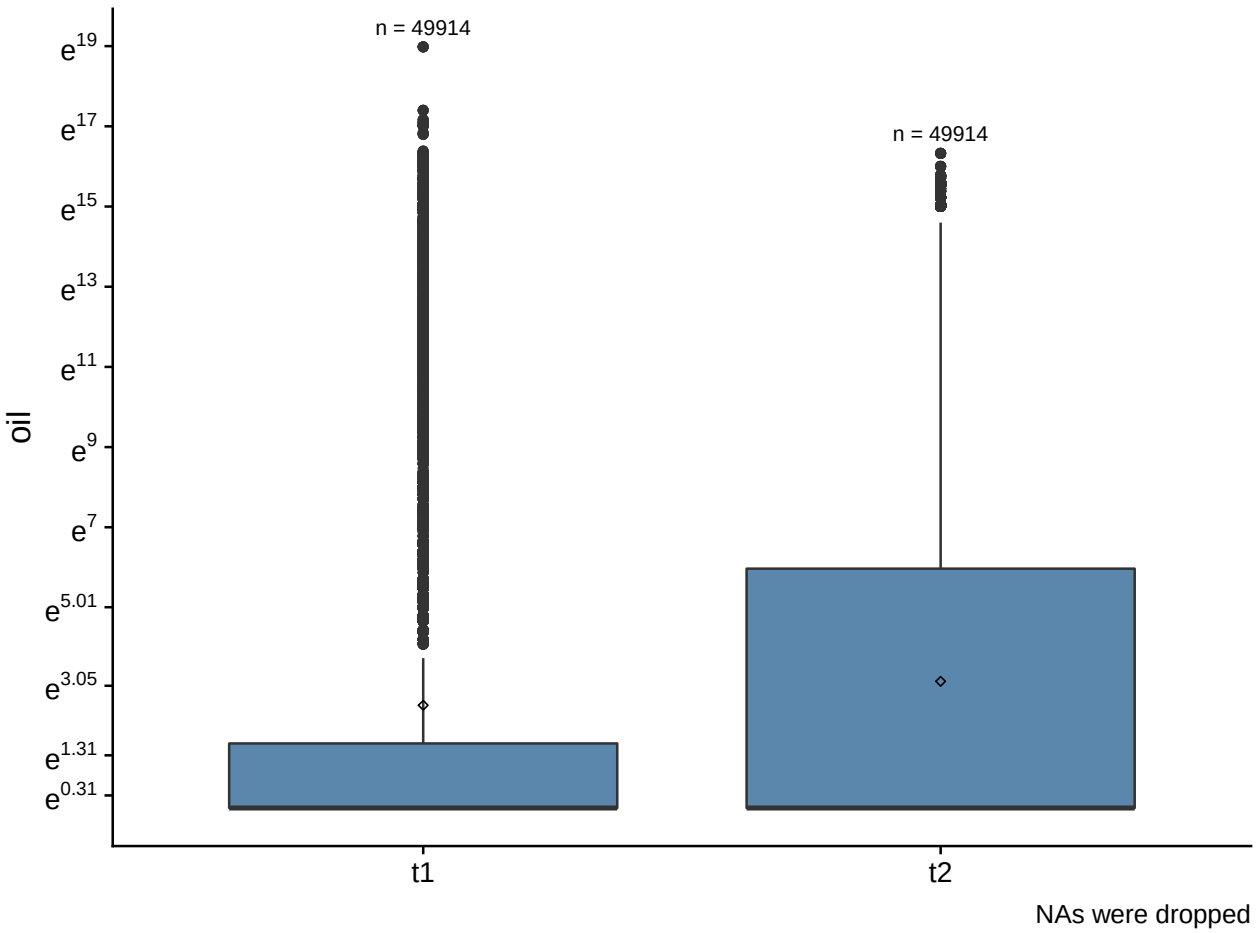
oil



NAs were dropped



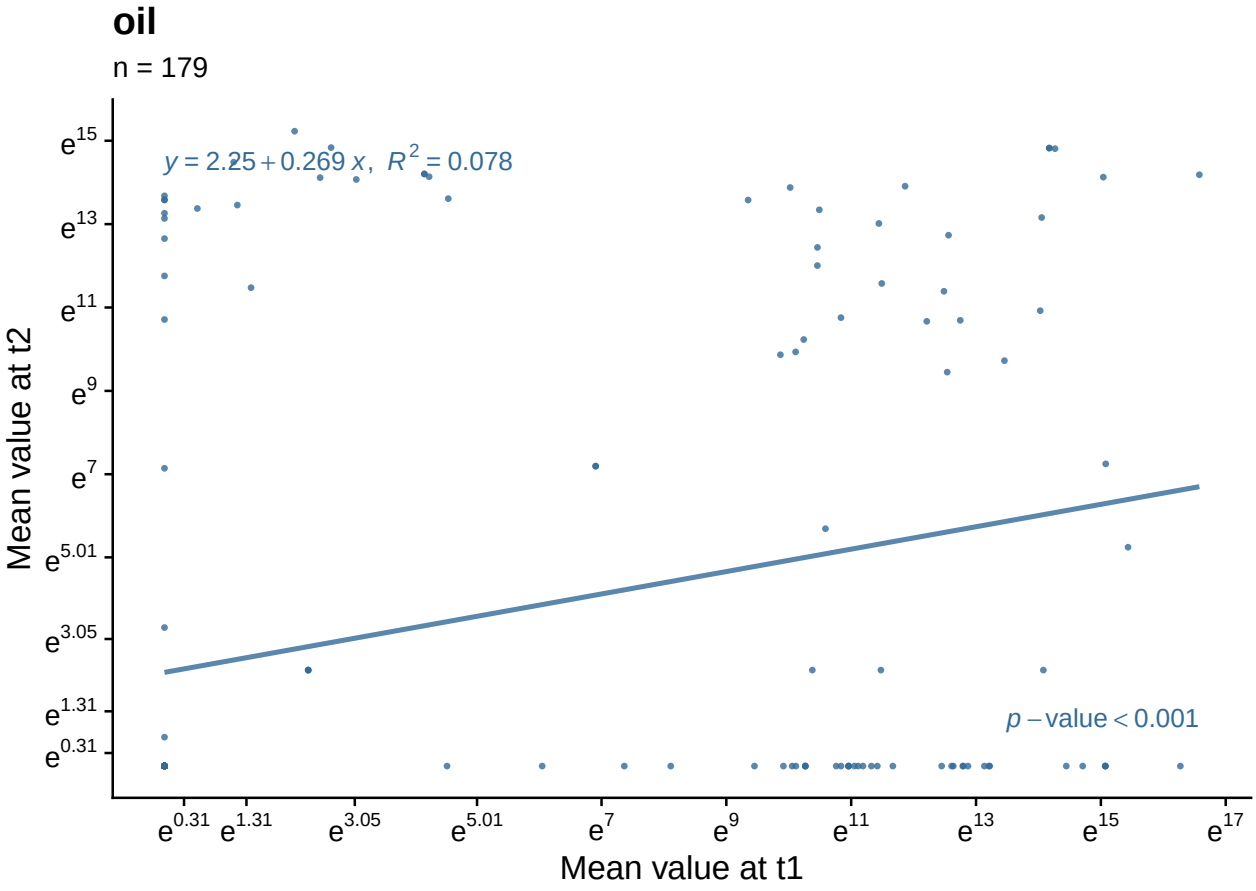




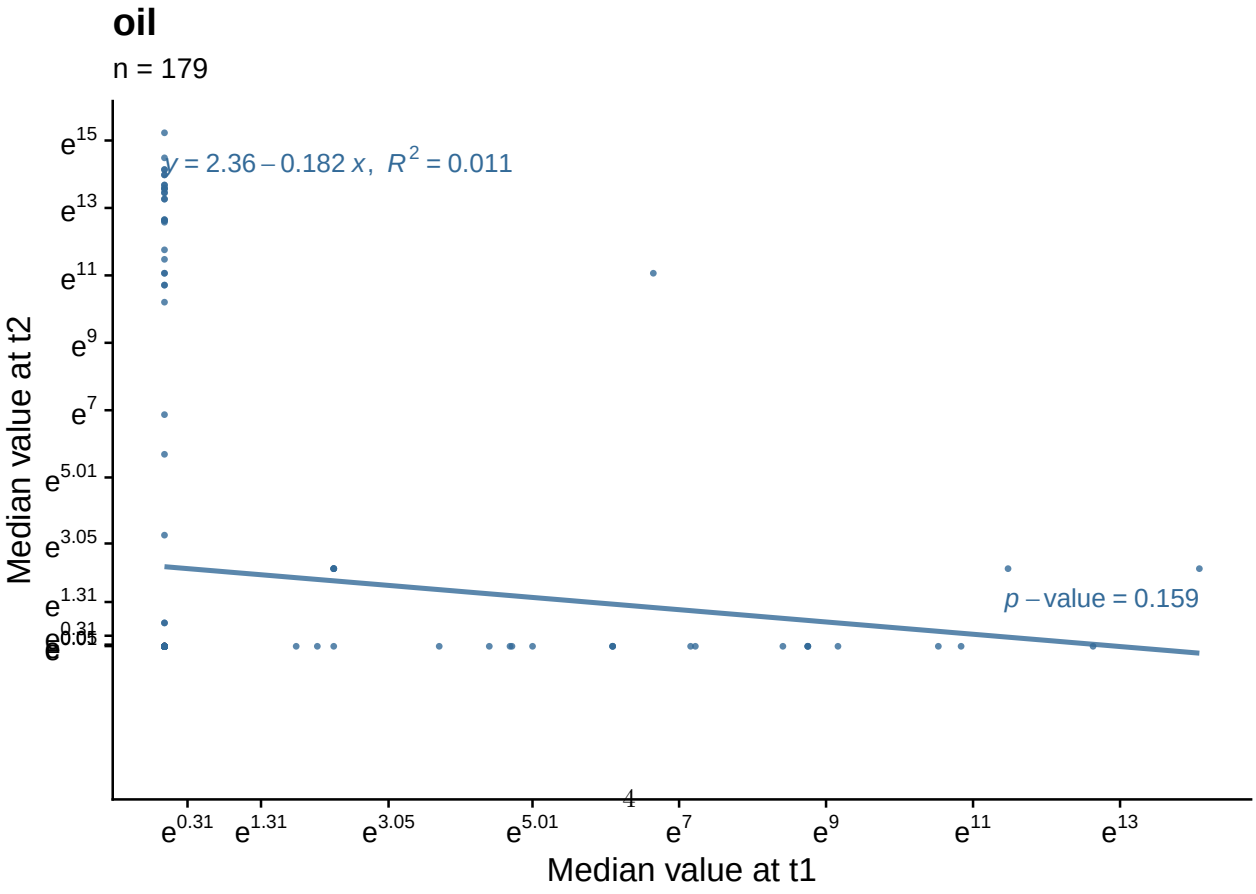
Statistical Analysis

```
1-way Repeated Measure ANOVA Output:

Error: tribe
           Df             Sum Sq        Mean Sq F value Pr(>F)
Residuals 178 14925793296631376 83852771329390

Error: tribe:time
           Df             Sum Sq        Mean Sq F value Pr(>F)
time        1    43405073008370 43405073008370   0.542  0.463
Residuals 178 14266730602669750 80150171925111

Error: Within
             Df              Sum Sq       Mean Sq F value Pr(>F)
Residuals 99470 364244627779095808 3661854104545

Linear Mixed Model Output:
            numDF denDF  F-value p-value
(Intercept)     1 99648 21.12690  <.0001
time            1 99648 11.42906  0.0007
```

Q2. How are t1 and t2 related?



Each dot is a tribe



Each dot is a tribe