CEM_Equity.R

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```
#!/usr/bin/env Rscript

# Install Packages
# install.packages("cem")

# Import Packages
library(cem)
```

```
## Loading required package: tcltk
```

```
## Loading required package: lattice
```

```
##
## How to use CEM? Type vignette("cem")
```

```
library(readr)
library(xtable)

# Set working directory
setwd("[redacted]
# Import Data
equity <- read.csv("[redacted]")

# Convert variables to numeric
equity$ProjectID <- as.numeric(equity$ProjectID)
equity$NumContributors <- as.numeric(equity$NumContributors)
equity$CovInterEventTime <- as.numeric(equity$CovInterEventTime)
equity$CovContributionAmount <- as.numeric(equity$CovContributionAmount)
equity$TimeToFirstContribution..sec. <- as.numeric(equity$TimeToFirstContribution..sec.)
equity$Duration..days. <- as.numeric(equity$Duration..days.)

# Crowd Equity
equity$EquityPercent <- as.numeric(equity$EquityPercent)
equity$PreMoneyValuation <- as.numeric(equity$PreMoneyValuation)
equity$EisComplinat <- as.numeric(equity$EisComplinat)
equity$SeisCompliant <- as.numeric(equity$SeisCompliant)
equity$Slug <- as.numeric(equity$Slug)
equity$Status <- as.numeric(equity$Status)
equity$EquityPercent <- as.numeric(equity$EquityPercent)
equity$PreMoneyValuation <- as.numeric(equity$PreMoneyValuation)
equity$EisComplinat <- as.numeric(equity$EisComplinat)
equity$SeisCompliant <- as.numeric(equity$SeisCompliant)
equity$Slug <- as.numeric(equity$Slug)
equity$Status <- as.numeric(equity$Status)

# Compare class sizes
funded <- which(equity$Status==2)
unfunded <- which(equity$Status==1)
fnd <- length(funded)
ufn <- length(unfunded)

# Platform variables
vars.platform <- c("EquityPercent", "PreMoneyValuation", "EisComplinat", "SeisCompliant"
, "Slug")

# Contributor variables
vars.contributor <- c("NumContributors", "CovInterEventTime", "CovContributionAmount",
                      "TimeToFirstContribution..sec.", "Duration..days.")

# All variables
vars.all <- c(vars.platform, vars.contributor)

# Calculate L1 Statistic: Overall Imbalance in Covariates
imbalance(group=equity$Status, data=equity[vars.all])
```

```
##
## Multivariate Imbalance Measure: L1=1.000
## Percentage of local common support: LCS=0.0%
##
## Univariate Imbalance Measures:
##
##                                   statistic   type           L1
## EquityPercent                 -4.282114e+00 (diff) 4.902455e-02
## PreMoneyValuation              1.316160e+08 (diff) 7.118918e-04
## EisComplinat                   1.556083e-01 (diff) 1.556083e-01
## SeisCompliant                 -1.560483e-01 (diff) 1.560483e-01
## Slug                           6.465733e+01 (diff) 5.551115e-17
## NumContributors                1.443905e+02 (diff) 5.551115e-17
## CovInterEventTime              5.412324e-01 (diff) 4.901175e-01
## CovContributionAmount          1.691200e+00 (diff) 5.019317e-01
## TimeToFirstContribution..sec. -1.074849e+04 (diff) 5.551115e-17
## Duration..days.                7.309513e+00 (diff) 9.197802e-02
##                                         min           25%           50%
## EquityPercent                  0.000000e+00 -4.000000e+00 -2.915910e+00
## PreMoneyValuation             -2.291998e+06  1.700000e+07  3.300000e+07
## EisComplinat                   0.000000e+00  0.000000e+00  0.000000e+00
## SeisCompliant                  0.000000e+00  0.000000e+00  0.000000e+00
## Slug                          -1.800000e+01  5.700000e+01  2.600000e+01
## NumContributors                6.000000e+00  8.000000e+01  1.190000e+02
## CovInterEventTime              6.705251e-01  3.801877e-01  4.454479e-01
## CovContributionAmount          4.026558e-01  1.374115e+00  1.433515e+00
## TimeToFirstContribution..sec.  0.000000e+00 -3.360000e+03 -1.488000e+04
## Duration..days.                0.000000e+00  4.000000e+00  5.000000e+00
##                                         75%           max
## EquityPercent                 -8.311700e+00  4.998000e+01
## PreMoneyValuation              6.000000e+07  4.900000e+09
## EisComplinat                   0.000000e+00  0.000000e+00
## SeisCompliant                  0.000000e+00  0.000000e+00
## Slug                           9.300000e+01 -3.000000e+00
## NumContributors                1.610000e+02  1.294000e+03
## CovInterEventTime              5.531302e-01  3.798804e+00
## CovContributionAmount          1.873136e+00  5.177427e+00
## TimeToFirstContribution..sec. -3.114000e+04  6.600000e+02
## Duration..days.                8.000000e+00  2.800000e+01
```

```
# Apply CEM
mat <- cem(treatment = "Status", data=equity, drop=c(vars.contributor, "ProjectID"), kee
p.all = TRUE)
```

```
## The data contain missing values. CEM will match on them; see the manual for other opt
ions.
```

```
mat
```

```
##            G1  G2
## All       479 261
## Matched   376 238
## Unmatched 103  23
```

```
write.csv(mat$X, file = "./Data/cem_results.csv")
```