CRC Engage

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Contents

CRC Engage Summary

CRC Engage Summary Statement

Chi Square Tests

Comparing categorical independence

For more info on this topic see:

Kim HY. Statistical notes for clinical researchers: Chi-squared test and Fisher's exact test. Restor Dent Endod. 2017 May;42(2):152-155. doi: 10.5395/rde.2017.42.2.152. Epub 2017 Mar 30. PMID: 28503482; PMCID: PMC5426219.

Chi Square - Solution vs. Stakeholder Engagement

Chi Square and Fishers Exact Test on contingency table with Solution/No Solution as the explanatory, and engaged stakeholder/did not engage stakeholder as the response.

Both chi square and fishers exact test were significant, with a chi square approximation of ~44, which is well above the critical value (3.84 for one degree of freedom). Fishers exact test returned an odds ratio of ~18. The alternative hypothesis: true odds ratio is not equal to 1. Null is rejected. The groups are not independent.

The FET defaults to associating the odds ratio (which can represent effect size) with the first cell. In this instance "The odds of having a solution is 18.25 times that for an engaged stakeholder". You could flip the response and explanatory, but the odds ratio would stay the same.

```
##          stakeholder
## solution  E  NE
##       S  14   4
##       NS 76 400
```

```
## Number of cases in table: 494
## Number of factors: 2
## Test for independence of all factors:
##  Chisq = 44.48, df = 1, p-value = 2.576e-11
##  Chi-squared approximation may be incorrect
```

```
##
##  Fisher's Exact Test for Count Data
##
## data:  solution_stakeholder
## p-value = 2.968e-08
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##   5.538514 78.189983
## sample estimates:
## odds ratio
##   18.25981
```

```
##
## Barnard's Unconditional Test
##
##            Treatment I Treatment II
## Outcome I           14            4
## Outcome II          76          400
```

```
##
## Null hypothesis: Treatments have no effect on the outcomes
## Score statistic = -6.66899
## Nuisance parameter = 0.027 (One sided), 0.027 (Two sided)
## P-value = 1.18406e-08 (One sided), 1.18406e-08 (Two sided)
```

Chi Square - Solution vs. Model

Chi Square and Fishers Exact Test on contingency table with Solution/No Solution as the explanatory, and Model/No Model as the response.

Both chi square and fishers exact test were insignificant/borderline, with a chi square approximation of ~3.7, which is below to the critical value (3.84 for one degree of freedom). Fishers exact test returned an odds ratio of under 1. Null is accepted. The groups are independent.

The FET defaults to associating the odds ratio (which can represent effect size) with the first cell. In this instance "The odds of having a solution is .39 times that for having a model". You could flip the response and explanatory, but the odds ratio would stay the same.

```
##          model
## solution   M NM
##       S   11  7
##       NS 377 94
```

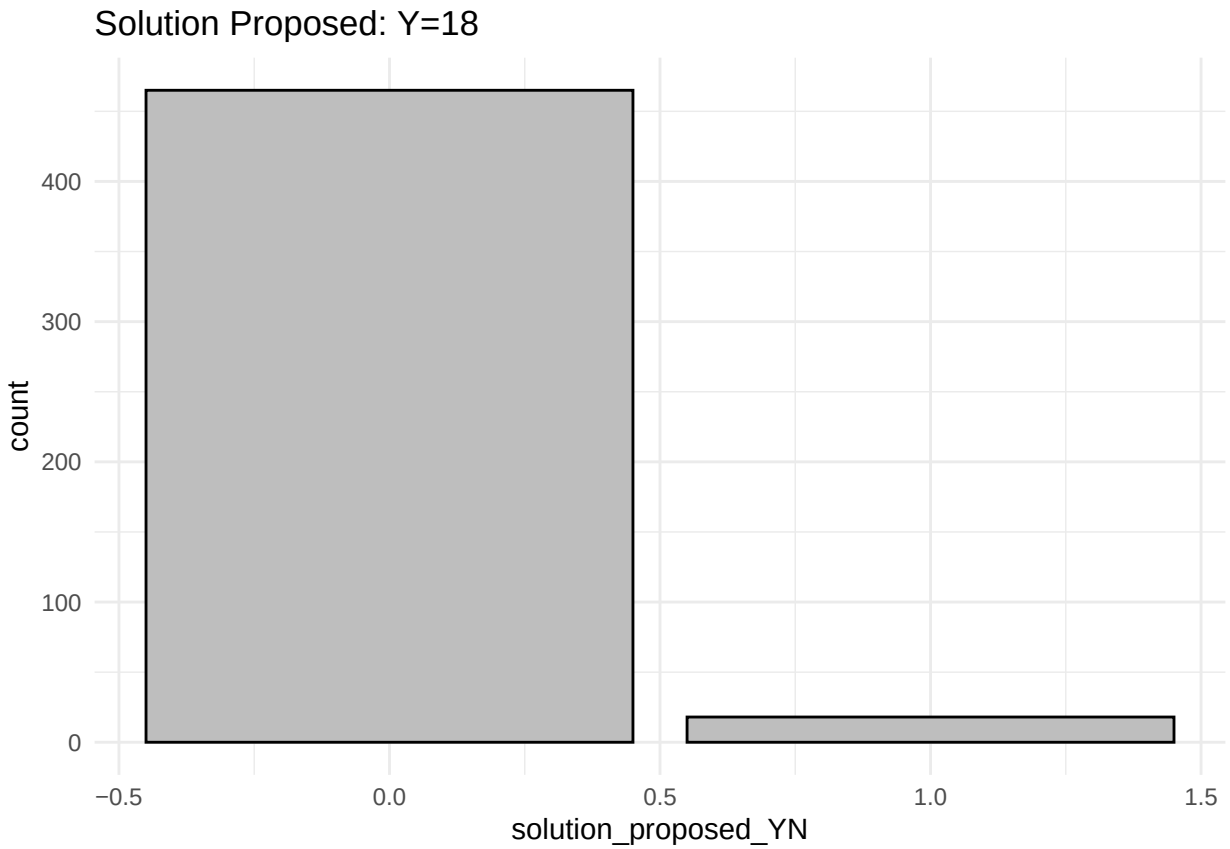
```
## Number of cases in table: 489
## Number of factors: 2
## Test for independence of all factors:
##  Chisq = 3.792, df = 1, p-value = 0.05151
##  Chi-squared approximation may be incorrect
```

```
##
##  Fisher's Exact Test for Count Data
##
## data:  solution_model
## p-value = 0.07051
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##  0.134767 1.228801
## sample estimates:
## odds ratio
##  0.3927391
```

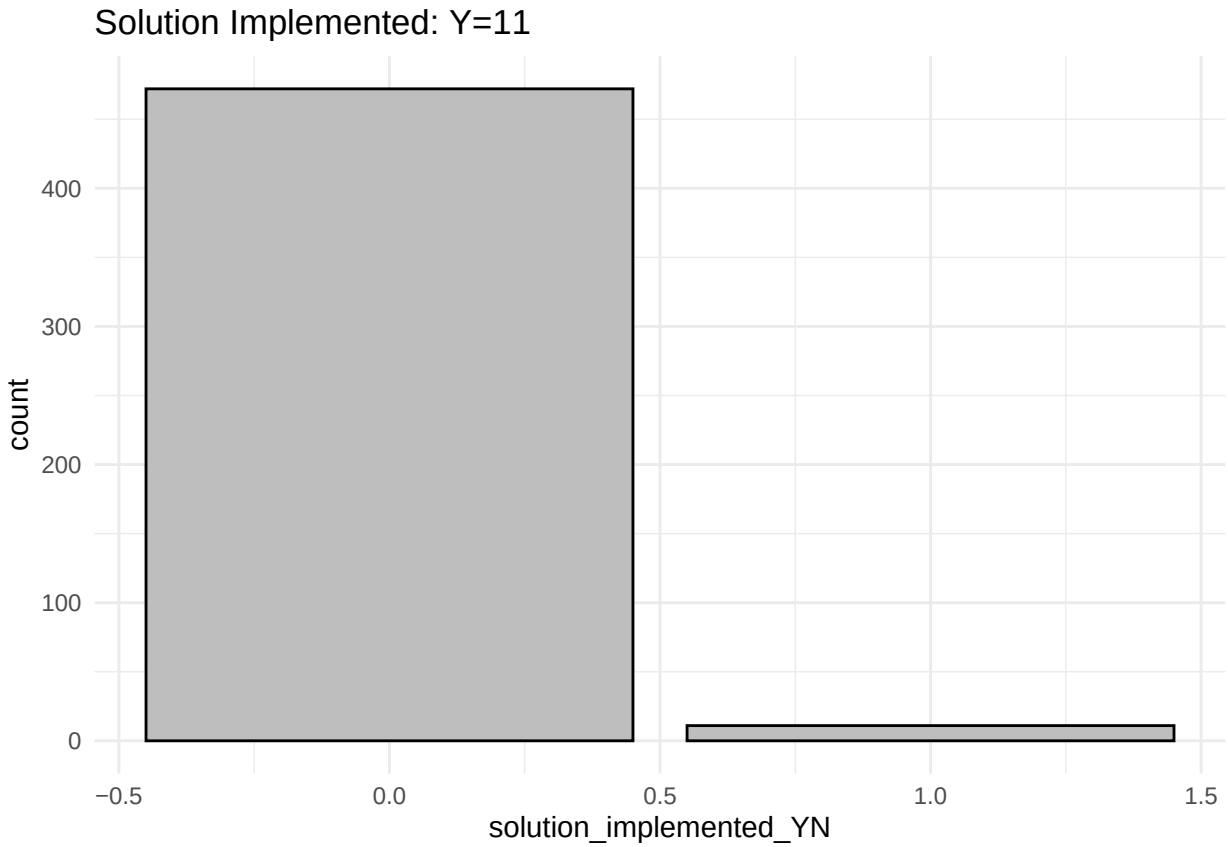
```
##
## Barnard's Unconditional Test
##
##            Treatment I Treatment II
## Outcome I           11            7
## Outcome II         377           94
##
## Null hypothesis: Treatments have no effect on the outcomes
## Score statistic = 1.94718
## Nuisance parameter = 0.003 (One sided), 0.003 (Two sided)
## P-value = 0.0959732 (One sided), 0.0959732 (Two sided)
```

Graphs

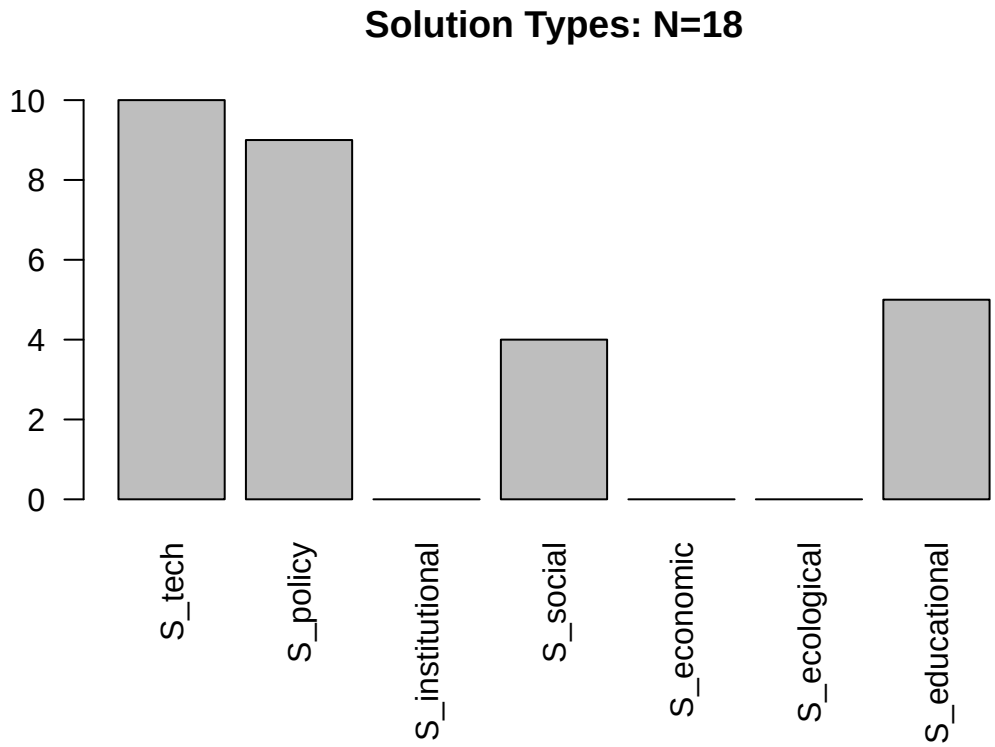
Proposed Solution Papers



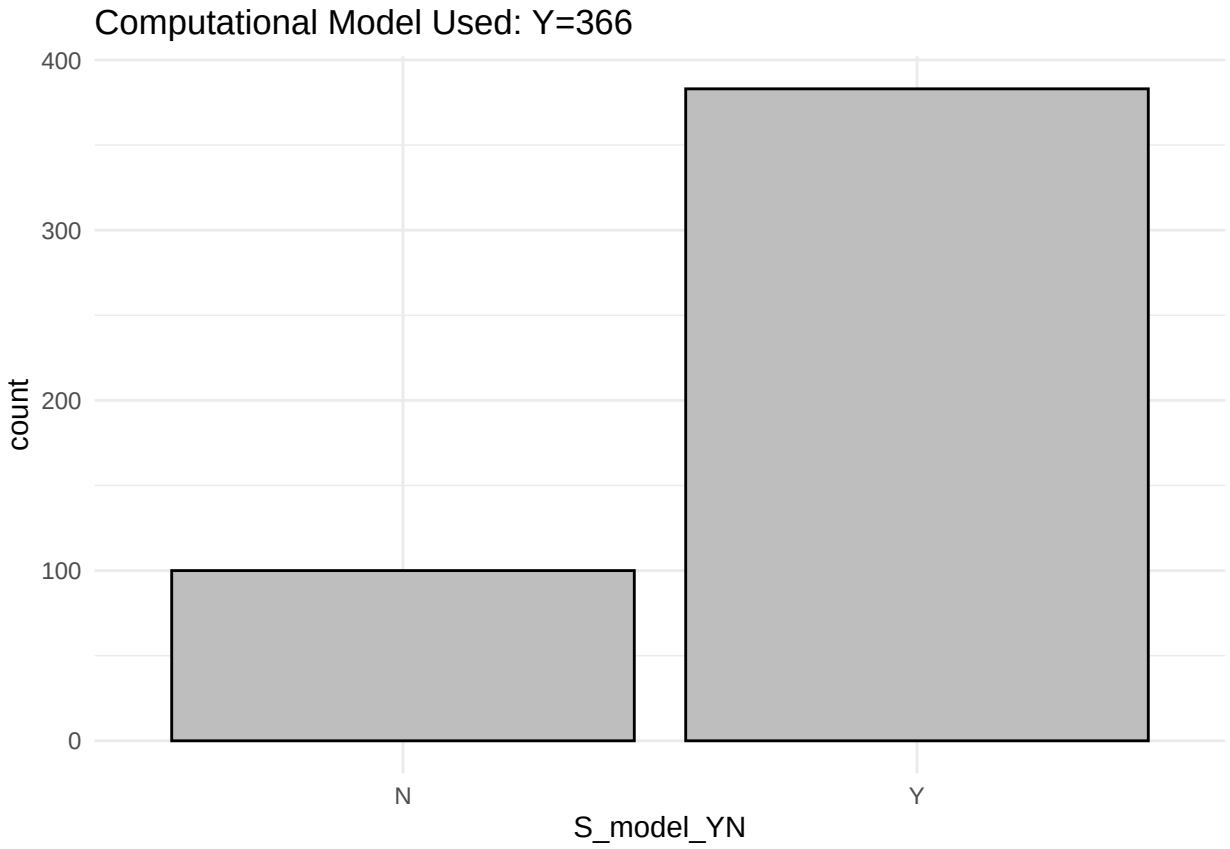
Implemented Solution Papers



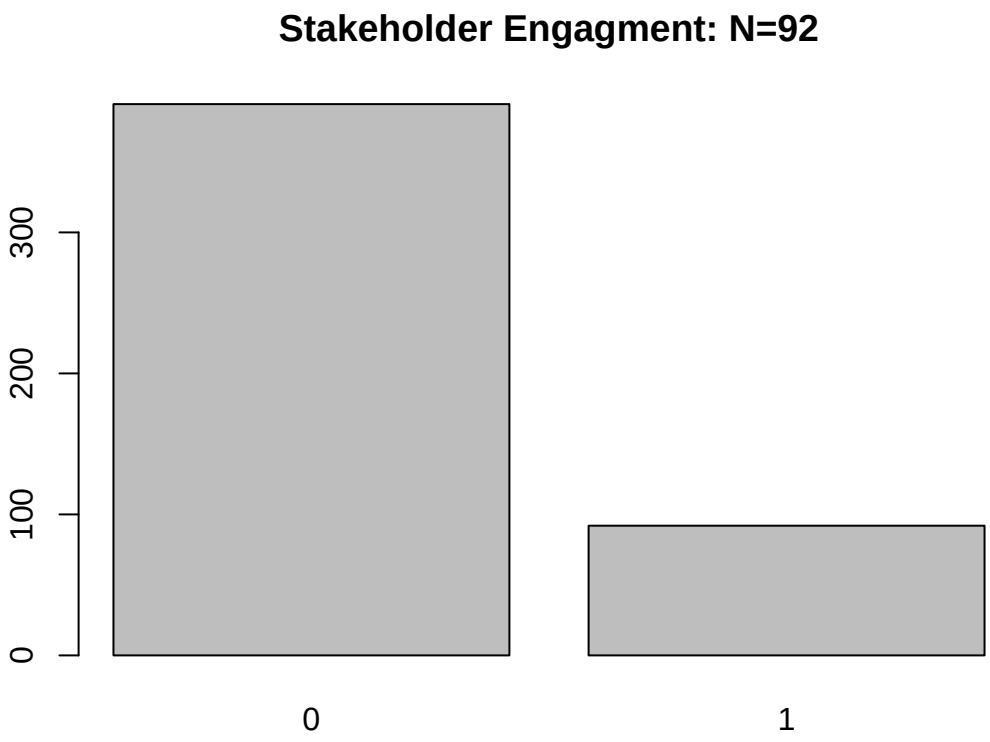
Solution Types



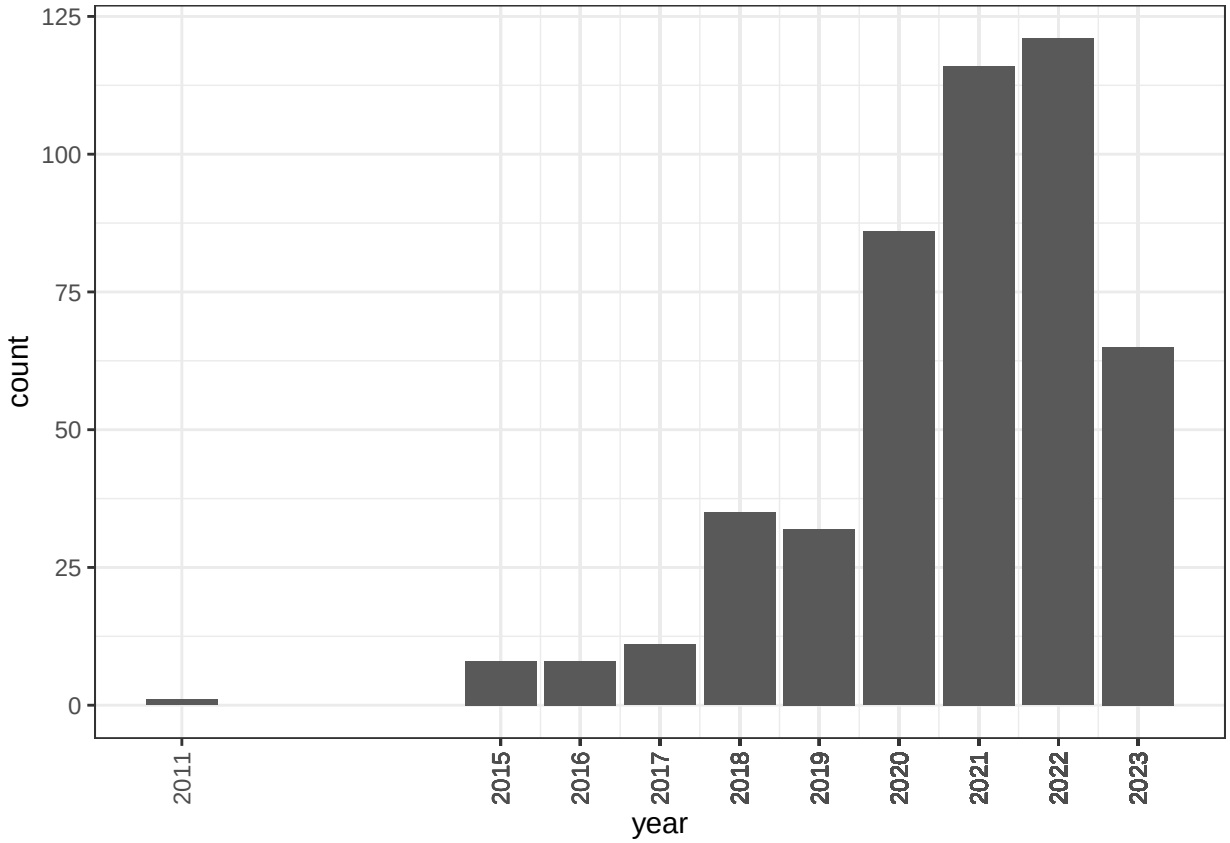
Computational Model Used



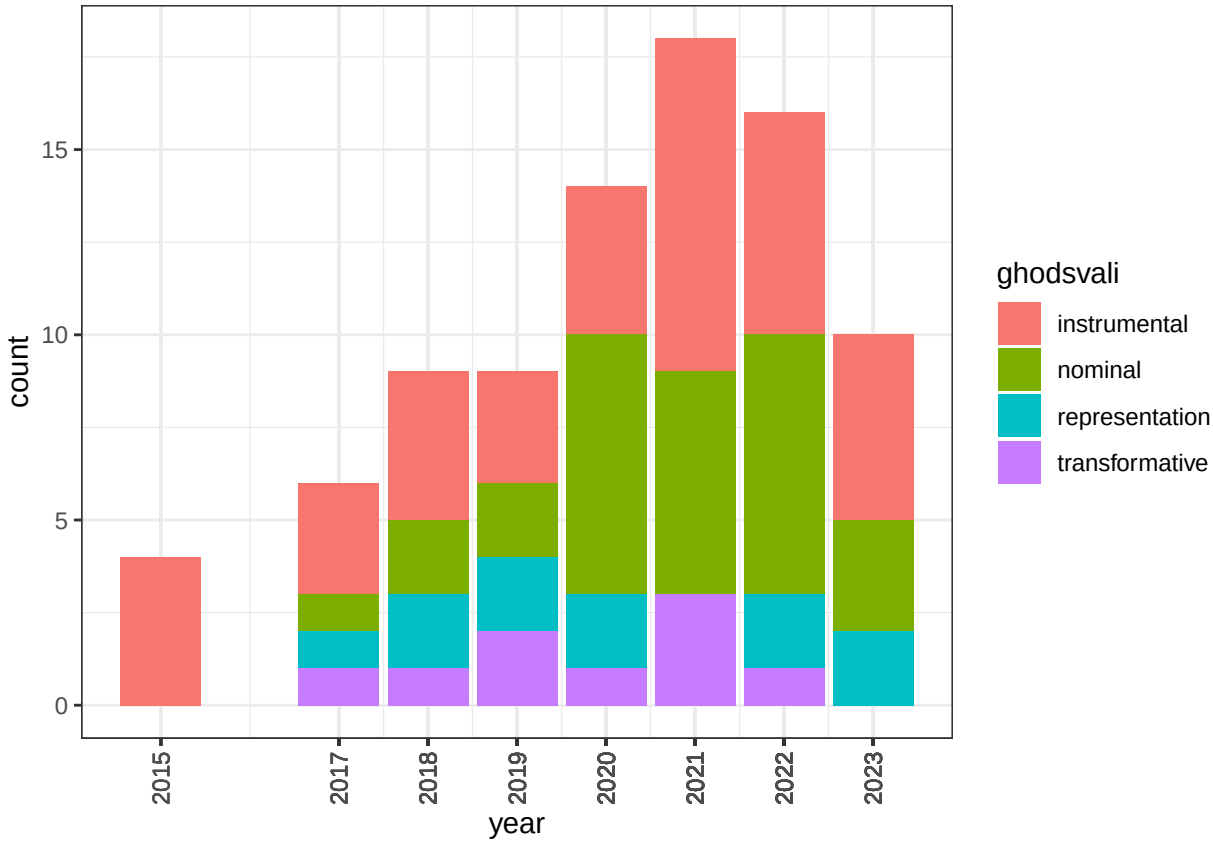
Stakeholder Engagement



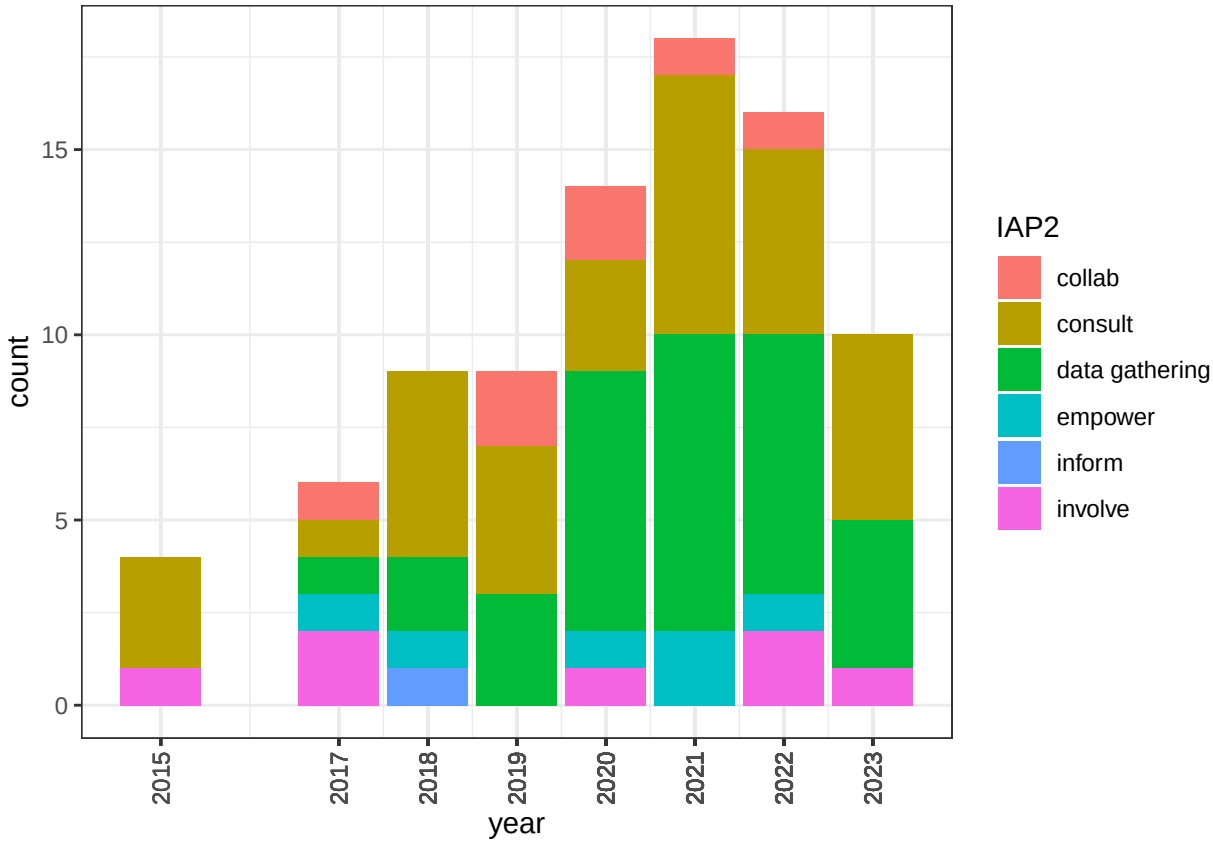
All FEWS Papers by Year



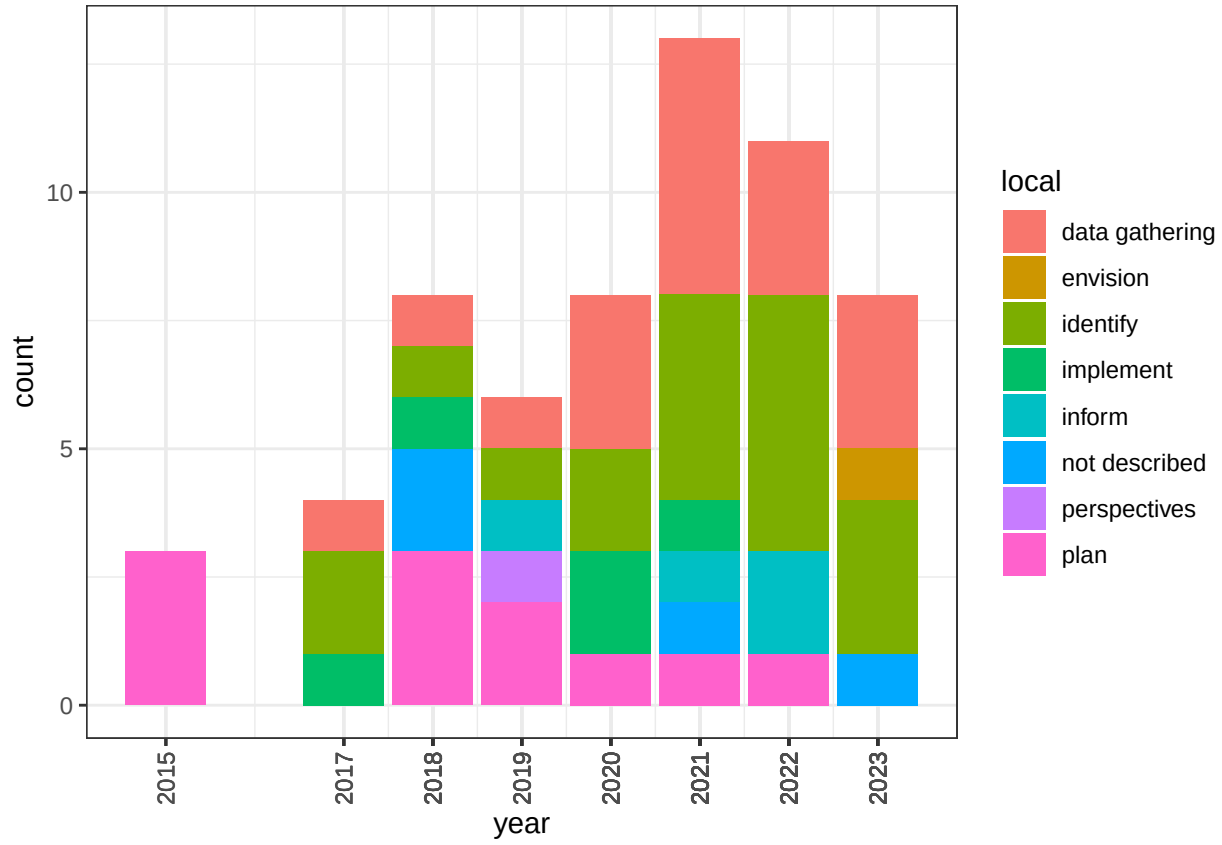
Level of Stakeholder Engagement by Year - Ghodsvali



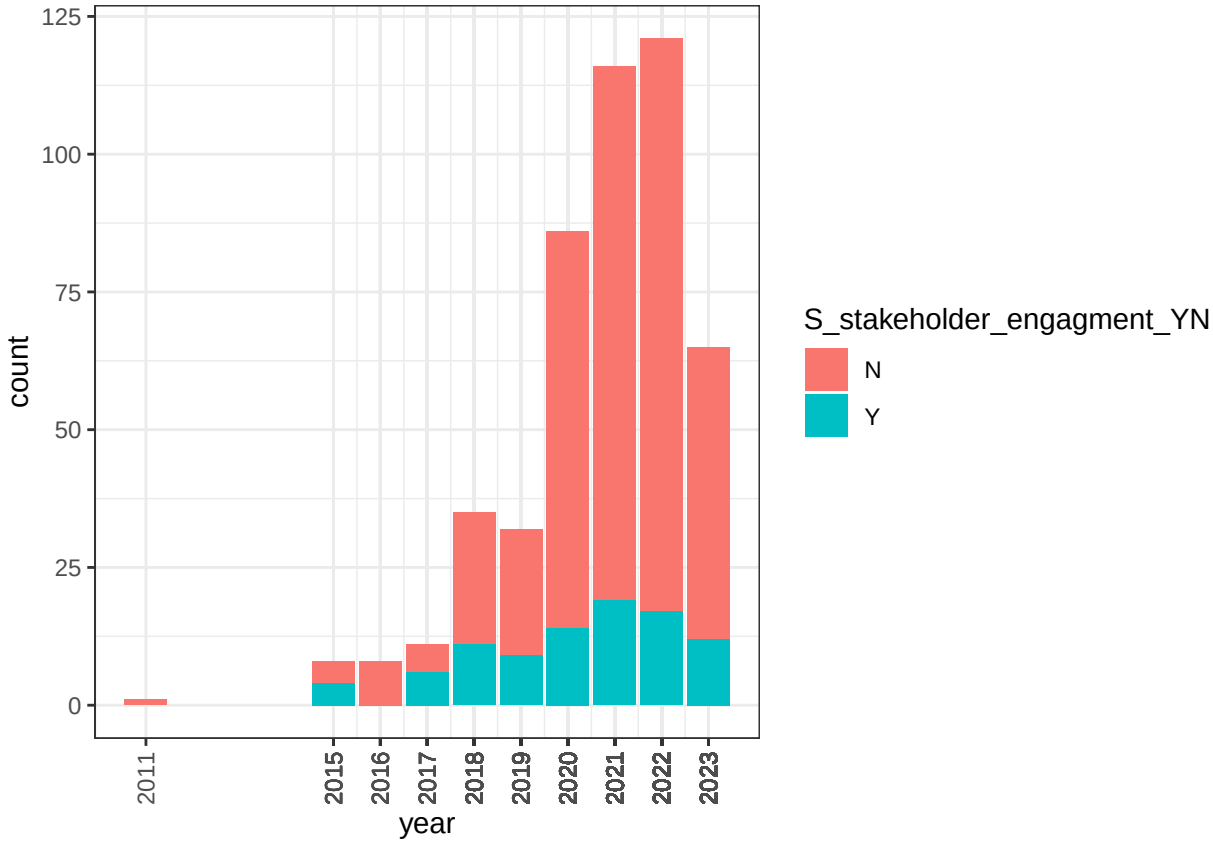
Level of Stakeholder Engagement by Year - IAP2



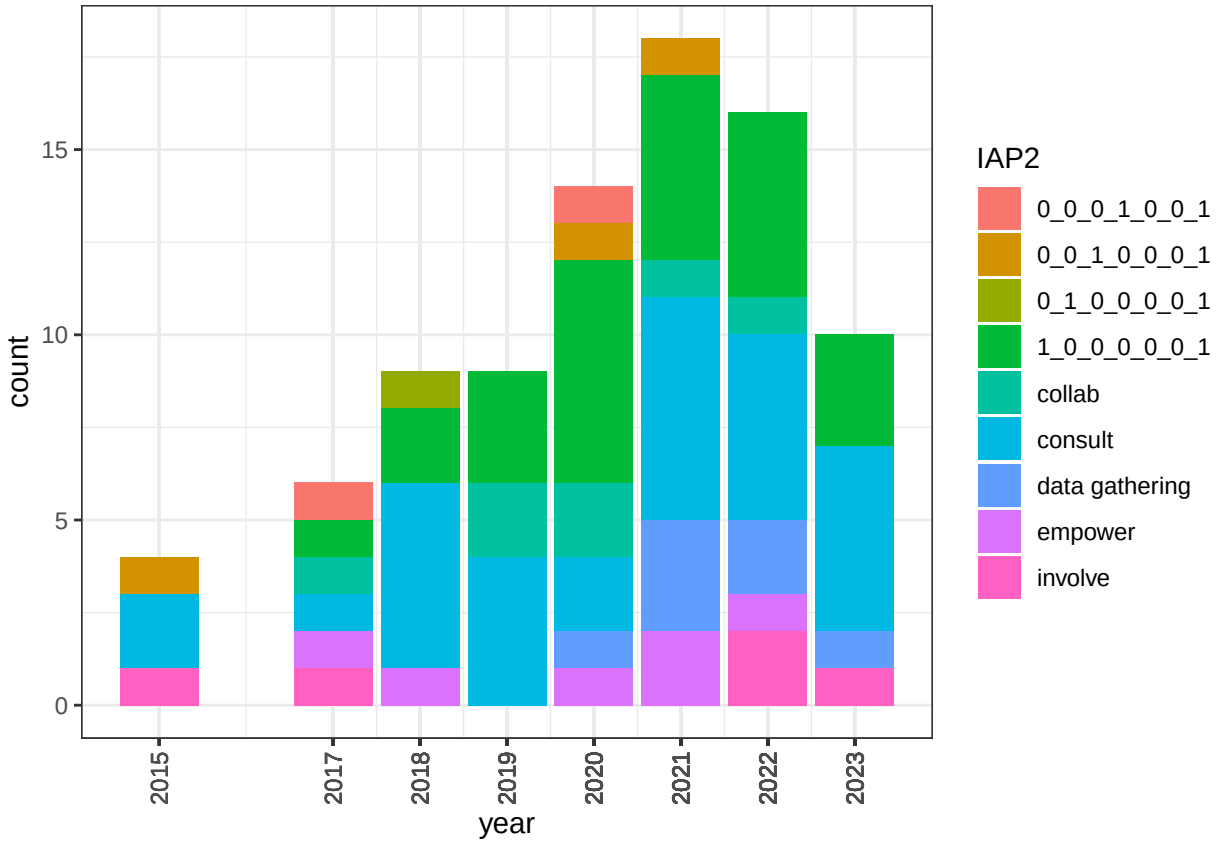
Level of Stakeholder Engagement by Year - Local



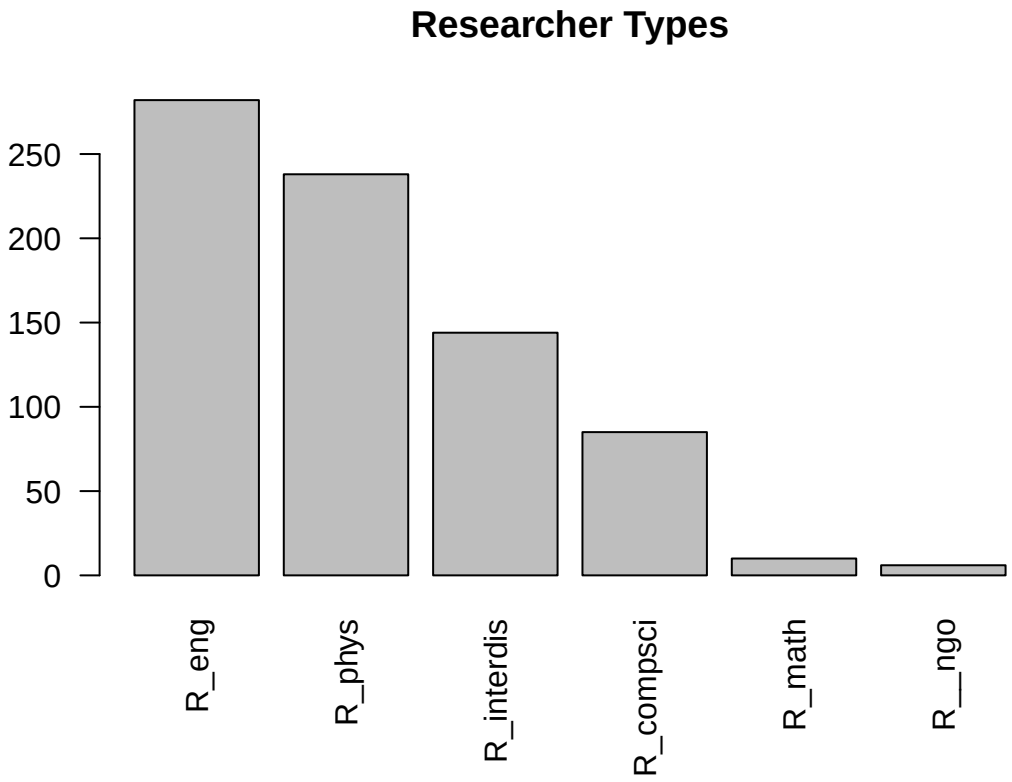
Stakeholder Engagement by Year



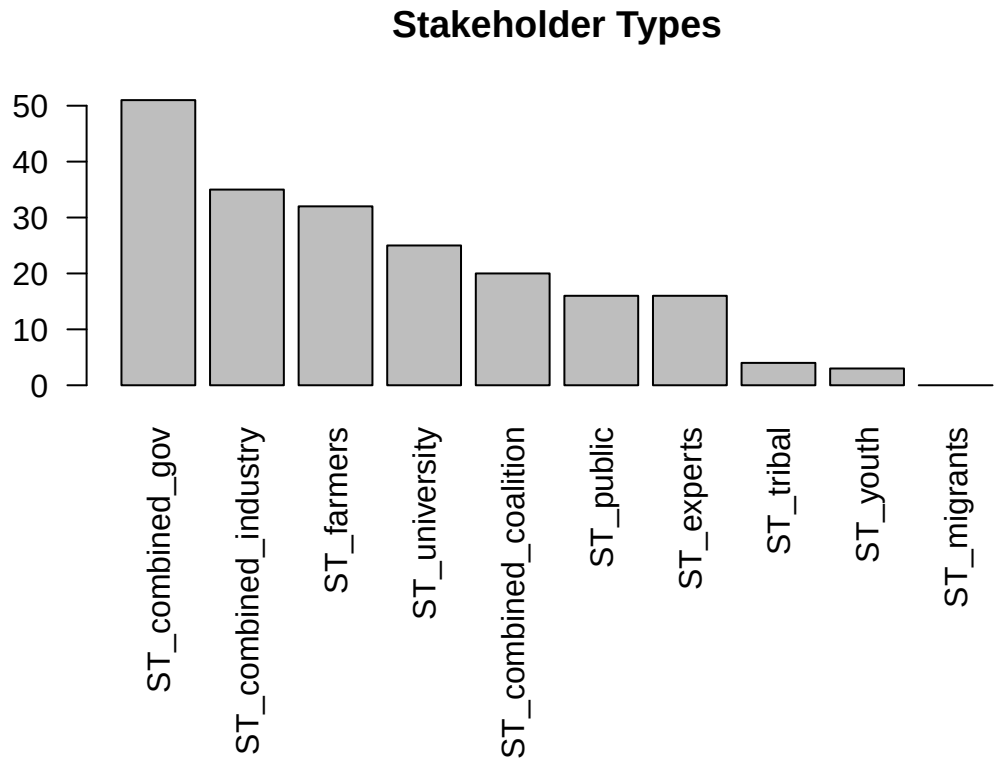
Level of Stakeholder Engagement by Year - Local



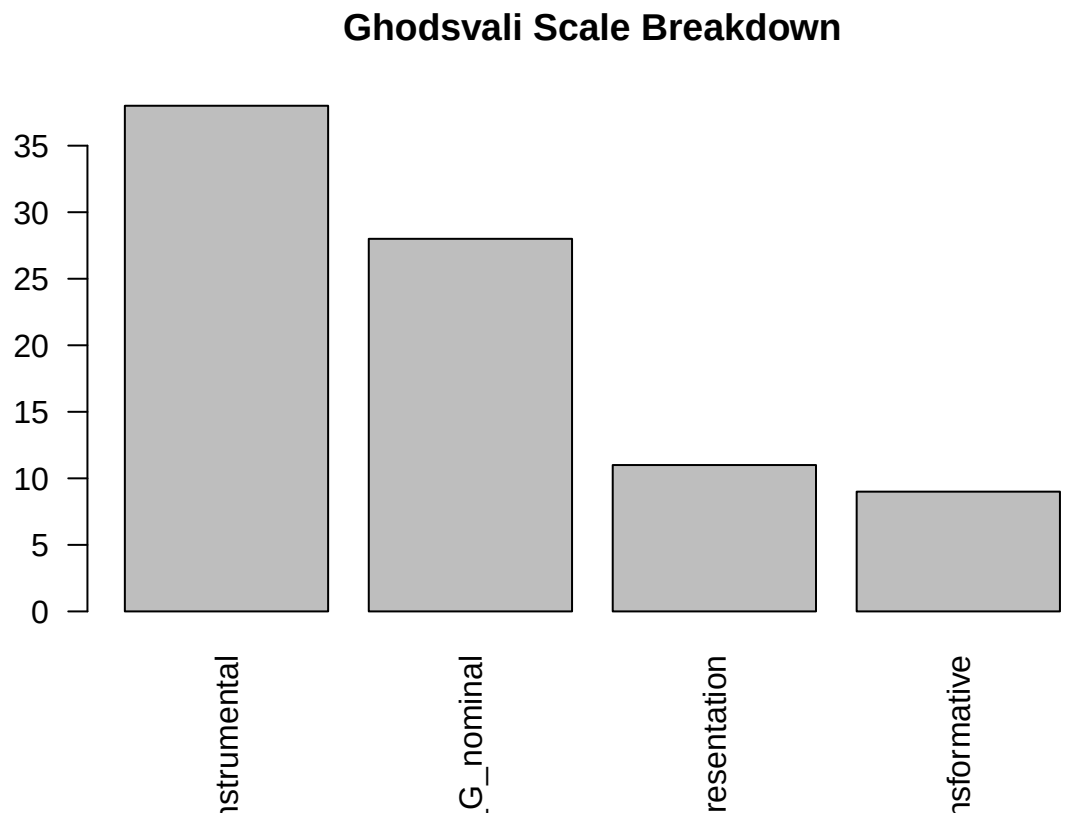
Researcher Types



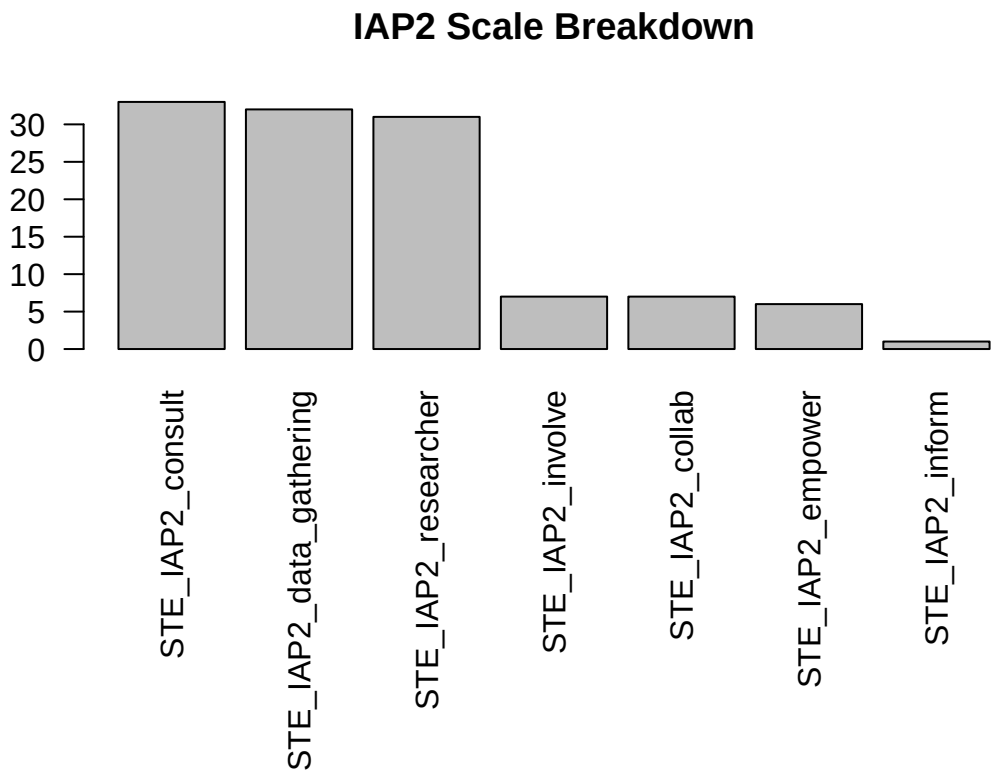
Stakeholder Types



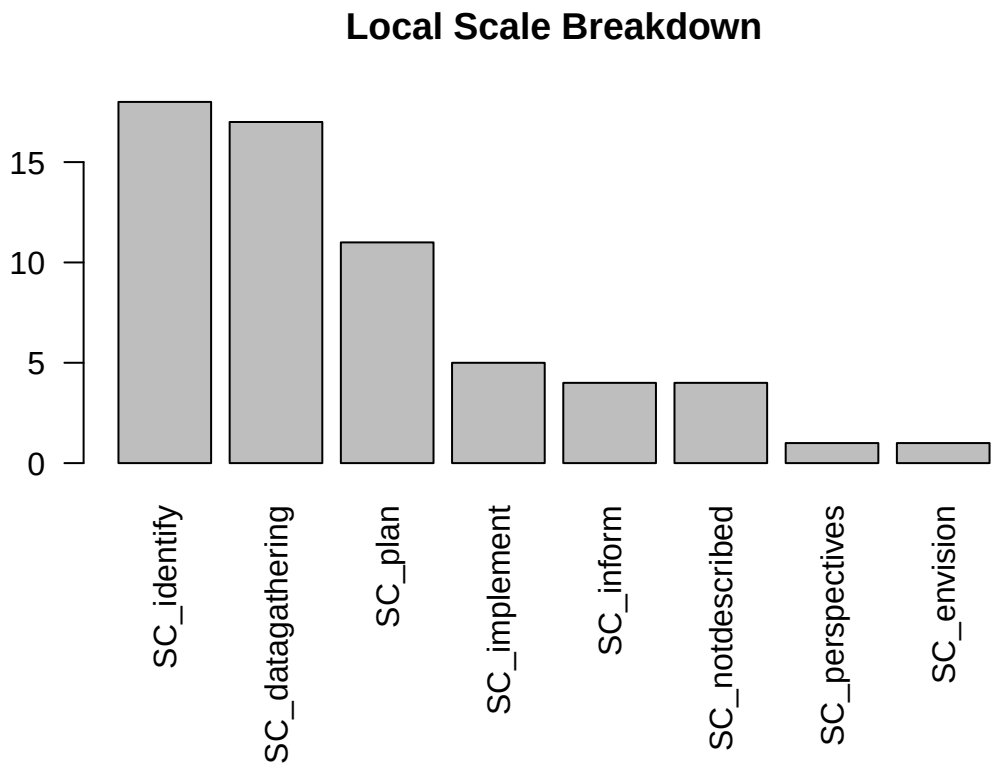
Ghodsvali Scale Breakdown



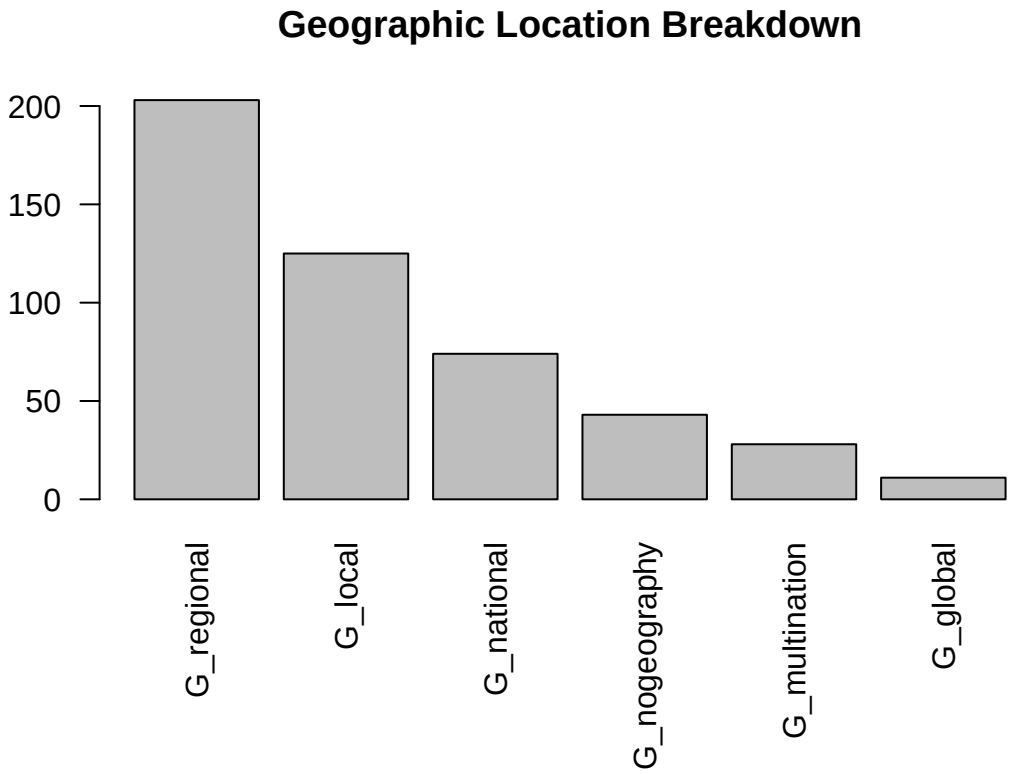
IAP2 Scale Breakdown



Local Scale Breakdown



Geographic Location Breakdown



Regression Testing

Ghodsvali

Odds of stakeholder scale predicting whether a solution was proposed or not

```
##
## Call:
## glm(formula = solution_proposed_YN ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, family = binomial,
##     data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.7344  -0.1423  -0.1423  -0.1423   3.0324
##
## Coefficients:
##                       Estimate Std. Error z value Pr(>|z|)
## (Intercept)           -4.5875     0.5025  -9.129  < 2e-16 ***
## STE_G_nominal          1.2917     1.1356   1.137  0.25535
## STE_G_instrumental     2.1308     0.7839   2.718  0.00656 **
## STE_G_representation   3.6067     0.8431   4.278 1.89e-05 ***
## STE_G_transformative   5.8403     0.9463   6.172 6.74e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.748  on 482  degrees of freedom
## Residual deviance:  96.785  on 478  degrees of freedom
## AIC: 106.79
##
## Number of Fisher Scoring iterations: 7
```

```
##
## Logistic regression predicting solution_proposed_YN
##
##                               crude OR(95%CI)        adj. OR(95%CI)
## STE_G_nominal: 1 vs 0         0.95 (0.12,7.44)       3.64 (0.39,33.7)
##
## STE_G_instrumental: 1 vs 0    2.46 (0.68,8.9)        8.42 (1.81,39.14)
##
## STE_G_representation: 1 vs 0  11.42 (2.75,47.41)     36.84 (7.06,192.33)
##
## STE_G_transformative: 1 vs 0  147.32 (27.42,791.53)  343.87 (53.82,2197.12)
##
##                               P(Wald's test) P(LR-test)
## STE_G_nominal: 1 vs 0         0.255          0.318
##
## STE_G_instrumental: 1 vs 0    0.007          0.015
##
## STE_G_representation: 1 vs 0  < 0.001        < 0.001
##
```

```
## STE_G_transformative: 1 vs 0  < 0.001        < 0.001
##
## Log-likelihood = -48.3926
## No. of observations = 483
## AIC value = 106.7851
```

IAP2

Odds of stakeholder scale predicting whether a solution was proposed or not

```
##
## Call:
## glm(formula = solution_proposed_YN ~ STE_IAP2_data_gathering +
##     STE_IAP2_inform + STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab +
##     STE_IAP2_empower + STE_IAP2_researcher, family = binomial,
##     data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.0579  -0.1423  -0.1423  -0.1423   3.0324
##
## Coefficients:
##                           Estimate Std. Error z value Pr(>|z|)
## (Intercept)               -4.5875     0.5025  -9.129  < 2e-16 ***
## STE_IAP2_data_gathering    1.6193     1.4775   1.096  0.27310
## STE_IAP2_inform          -12.3358  3956.1806  -0.003  0.99751
## STE_IAP2_consult           2.3309     0.7912   2.946  0.00322 **
## STE_IAP2_involve           2.9505     1.2283   2.402  0.01630 *
## STE_IAP2_collab            4.2998     0.9143   4.703 2.56e-06 ***
## STE_IAP2_empower          22.1536  1615.1039   0.014  0.98906
## STE_IAP2_researcher       -0.6428     1.4269  -0.450  0.65237
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.748  on 482  degrees of freedom
## Residual deviance:  88.836  on 475  degrees of freedom
## AIC: 104.84
##
## Number of Fisher Scoring iterations: 16
```

```
##
## Logistic regression predicting solution_proposed_YN
##
##                                  crude OR(95%CI)       adj. OR(95%CI)
## STE_IAP2_data_gathering: 1 vs 0  0.82 (0.11,6.39)      5.05 (0.28,91.39)
##
## STE_IAP2_inform: 1 vs 0          0 (0,Inf)             0 (0,Inf)
##
## STE_IAP2_consult: 1 vs 0         2.9 (0.8,10.57)       10.29 (2.18,48.5)
##
## STE_IAP2_involve: 1 vs 0         4.5 (0.51,39.48)      19.12 (1.72,212.29)
##
## STE_IAP2_collab: 1 vs 0          23.05 (4.73,112.22)   73.69 (12.28,442.2)
##
## STE_IAP2_empower: 1 vs 0         1648611478.8 (0,Inf)  4180027812.12 (0,Inf)
##
## STE_IAP2_researcher: 1 vs 0      0.85 (0.11,6.63)      0.53 (0.03,8.62)
##
```

```
##                                  P(Wald's test) P(LR-test)
## STE_IAP2_data_gathering: 1 vs 0  0.273          0.317
##
## STE_IAP2_inform: 1 vs 0          0.998          0.918
##
## STE_IAP2_consult: 1 vs 0         0.003          0.009
##
## STE_IAP2_involve: 1 vs 0         0.016          0.059
##
## STE_IAP2_collab: 1 vs 0          < 0.001        < 0.001
##
## STE_IAP2_empower: 1 vs 0         0.989          < 0.001
##
## STE_IAP2_researcher: 1 vs 0      0.652          0.644
##
## Log-likelihood = -44.4179
## No. of observations = 483
## AIC value = 104.8357
```

Local

Odds of stakeholder scale predicting whether a solution was proposed or not

```
##
## Call:
## glm(formula = solution_proposed_YN ~ SC_datagathering + SC_inform +
##     SC_perspectives + SC_plan + SC_identify + SC_envision + SC_implement +
##     SC_notdescribed, family = binomial, data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.7941  -0.1544  -0.1544  -0.1544   2.9785
##
## Coefficients:
##                    Estimate Std. Error z value Pr(>|z|)
## (Intercept)         -4.4236     0.4499  -9.833  < 2e-16 ***
## SC_datagathering   -15.1424  2608.2313  -0.006    0.995
## SC_inform            4.4236     1.0965   4.034 5.48e-05 ***
## SC_perspectives    -15.1424 10754.0130  -0.001    0.999
## SC_plan            -15.1424  3242.4569  -0.005    0.996
## SC_identify          3.7305     0.6726   5.546 2.92e-08 ***
## SC_envision         23.9897 10754.0130   0.002    0.998
## SC_implement         5.8099     1.2052   4.821 1.43e-06 ***
## SC_notdescribed    -15.1424  5377.0065  -0.003    0.998
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.75  on 482  degrees of freedom
## Residual deviance:  87.76  on 474  degrees of freedom
## AIC: 105.76
##
## Number of Fisher Scoring iterations: 18
```

```
##
## Logistic regression predicting solution_proposed_YN
##
##                            crude OR(95%CI)        adj. OR(95%CI)
## SC_datagathering: 1 vs 0  0 (0,Inf)              0 (0,Inf)
##
## SC_inform: 1 vs 0         28.94 (3.83,218.65)    83.4 (9.72,715.39)
##
## SC_perspectives: 1 vs 0   0 (0,Inf)              0 (0,Inf)
##
## SC_plan: 1 vs 0           0 (0,Inf)              0 (0,Inf)
##
## SC_identify: 1 vs 0       18.87 (6.06,58.74)     41.7 (11.16,155.83)
##
## SC_envision: 1 vs 0       157493116.45 (0,Inf)   26218125517.58 (0,Inf)
##
## SC_implement: 1 vs 0      132.57 (13.9,1263.96)  333.6 (31.43,3540.43)
##
```

```
## SC_notdescribed: 1 vs 0   0 (0,Inf)              0 (0,Inf)
##
##                           P(Wald's test) P(LR-test)
## SC_datagathering: 1 vs 0  0.995          0.529
##
## SC_inform: 1 vs 0         < 0.001        < 0.001
##
## SC_perspectives: 1 vs 0   0.999          0.877
##
## SC_plan: 1 vs 0           0.996          0.611
##
## SC_identify: 1 vs 0       < 0.001        < 0.001
##
## SC_envision: 1 vs 0       0.998          0.003
##
## SC_implement: 1 vs 0      < 0.001        < 0.001
##
## SC_notdescribed: 1 vs 0   0.998          0.758
##
## Log-likelihood = -43.88
## No. of observations = 483
## AIC value = 105.7599
```

Engagement vs. solution

```
##
## Call:
## glm(formula = solution_proposed_YN ~ S_stakeholder_engagment_YN,
##     family = binomial, data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.5746  -0.1434  -0.1434  -0.1434   3.0274
##
## Coefficients:
##                            Estimate Std. Error z value Pr(>|z|)
## (Intercept)                 -4.5721     0.5026  -9.097  < 2e-16 ***
## S_stakeholder_engagment_YN   2.8545     0.5804   4.918 8.73e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.75  on 482  degrees of freedom
## Residual deviance: 123.09  on 481  degrees of freedom
## AIC: 127.09
##
## Number of Fisher Scoring iterations: 7

##
## Logistic regression predicting solution_proposed_YN
##
##                                    OR(95%CI)           P(Wald's test)
## S_stakeholder_engagment_YN: 1 vs 0  17.37 (5.57,54.16)  < 0.001
##
##                                    P(LR-test)
## S_stakeholder_engagment_YN: 1 vs 0  < 0.001
##
## Log-likelihood = -61.5436
## No. of observations = 483
## AIC value = 127.0872
```

Use of computational model vs. solution

```
##
## Call:
## glm(formula = solution_proposed_YN ~ S_model_YN, family = binomial,
##     data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3203  -0.2628  -0.2628  -0.2628   2.6012
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -2.9444     0.4588  -6.417 1.39e-10 ***
## S_model_YNY  -0.4041     0.5387  -0.750    0.453
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.75  on 482  degrees of freedom
## Residual deviance: 153.22  on 481  degrees of freedom
## AIC: 157.22
##
## Number of Fisher Scoring iterations: 6
```

```
##
## Logistic regression predicting solution_proposed_YN
##
##                          OR(95%CI)         P(Wald's test) P(LR-test)
## S_model_YN (cont. var.) 0.67 (0.23,1.92)  0.453          0.466
##
## Log-likelihood = -76.6085
## No. of observations = 483
## AIC value = 157.2169
```

Diversity of stakeholders vs solution

```
##
## Call:
## glm(formula = solution_proposed_YN ~ ST_ratio, family = binomial,
##     data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.7942  -0.1825  -0.1825  -0.1825   2.8648
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -4.0868     0.3598 -11.360  < 2e-16 ***
## ST_ratio      7.8189     1.3777   5.675 1.38e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.75  on 482  degrees of freedom
## Residual deviance: 122.71  on 481  degrees of freedom
## AIC: 126.71
##
## Number of Fisher Scoring iterations: 6
```

```
##
## Logistic regression predicting solution_proposed_YN
##
##                        OR(95%CI)                   P(Wald's test) P(LR-test)
## ST_ratio (cont. var.) 2487.25 (167.12,37016.93)  < 0.001        < 0.001
##
## Log-likelihood = -61.3545
## No. of observations = 483
## AIC value = 126.7089
```

Diversity of Researchers vs solution

```
##
## Call:
## glm(formula = solution_proposed_YN ~ R_ratio, family = binomial,
##     data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.2931  -0.2846  -0.2764  -0.2684   2.6296
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -3.1262     0.4876  -6.412 1.44e-10 ***
## R_ratio      -0.5981     2.0612  -0.290    0.772
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.75  on 482  degrees of freedom
## Residual deviance: 153.66  on 481  degrees of freedom
## AIC: 157.66
##
## Number of Fisher Scoring iterations: 6
```

```
##
## Logistic regression predicting solution_proposed_YN
##
##                       OR(95%CI)          P(Wald's test) P(LR-test)
## R_ratio (cont. var.) 0.55 (0.01,31.25)  0.772          0.769
##
## Log-likelihood = -76.8308
## No. of observations = 483
## AIC value = 157.6617
```

Stakeholder type vs level of engagement (Ghodsvali)

```
## Response ST_farmers :
##
## Call:
## lm(formula = ST_farmers ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.4444  0.0000  0.0000  0.0000  0.6786
##
## Coefficients:
##                        Estimate Std. Error t value Pr(>|t|)
## (Intercept)          1.389e-16  1.025e-02   0.000        1
## STE_G_nominal        3.214e-01  3.995e-02   8.046 6.83e-15 ***
## STE_G_instrumental   3.947e-01  3.469e-02  11.378  < 2e-16 ***
## STE_G_representation 3.636e-01  6.245e-02   5.823 1.06e-08 ***
## STE_G_transformative 4.444e-01  6.887e-02   6.453 2.69e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2043 on 478 degrees of freedom
## Multiple R-squared:  0.3322, Adjusted R-squared:  0.3266
## F-statistic: 59.45 on 4 and 478 DF,  p-value: < 2.2e-16
##
##
## Response ST_combined_gov :
##
## Call:
## lm(formula = ST_combined_gov ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.9091  0.0000  0.0000  0.0000  0.7500
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)          -5.153e-16  8.805e-03   0.000        1
## STE_G_nominal         2.500e-01  3.430e-02   7.288 1.31e-12 ***
## STE_G_instrumental    6.579e-01  2.979e-02  22.084  < 2e-16 ***
## STE_G_representation  9.091e-01  5.362e-02  16.953  < 2e-16 ***
## STE_G_transformative  1.000e+00  5.914e-02  16.910  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1754 on 478 degrees of freedom
## Multiple R-squared:  0.6775, Adjusted R-squared:  0.6748
## F-statistic:   251 on 4 and 478 DF,  p-value: < 2.2e-16
##
##
## Response ST_tribal :
##
```

```
## Call:
## lm(formula = ST_tribal ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.1071  0.0000  0.0000  0.0000  0.9737
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)           8.335e-17  4.387e-03   0.000   1.0000
## STE_G_nominal         1.071e-01  1.709e-02   6.269 8.14e-10 ***
## STE_G_instrumental    2.632e-02  1.484e-02   1.773   0.0769 .
## STE_G_representation -1.956e-17  2.672e-02   0.000   1.0000
## STE_G_transformative -1.957e-17  2.947e-02   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08741 on 478 degrees of freedom
## Multiple R-squared:  0.07931,    Adjusted R-squared:  0.07161
## F-statistic: 10.29 on 4 and 478 DF,  p-value: 5.285e-08
##
##
## Response ST_combined_coalition :
##
## Call:
## lm(formula = ST_combined_coalition ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.5556  0.0000  0.0000  0.0000  0.9286
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)          -3.997e-16  8.475e-03   0.000    1.000
## STE_G_nominal         7.143e-02  3.302e-02   2.163    0.031 *
## STE_G_instrumental    2.632e-01  2.867e-02   9.178  < 2e-16 ***
## STE_G_representation  2.727e-01  5.161e-02   5.284 1.92e-07 ***
## STE_G_transformative  5.556e-01  5.692e-02   9.760  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1689 on 478 degrees of freedom
## Multiple R-squared:  0.2891, Adjusted R-squared:  0.2831
## F-statistic: 48.59 on 4 and 478 DF,  p-value: < 2.2e-16
##
##
## Response ST_combined_industry :
##
## Call:
## lm(formula = ST_combined_industry ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
```

```
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.63636 -0.00252 -0.00252 -0.00252  0.99748
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           0.002519   0.009635   0.261  0.79387
## STE_G_nominal         0.104624   0.037537   2.787  0.00553 **
## STE_G_instrumental    0.550113   0.032599  16.875  < 2e-16 ***
## STE_G_representation 0.633845   0.058679  10.802  < 2e-16 ***
## STE_G_transformative 0.330814   0.064713   5.112 4.62e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.192 on 478 degrees of freedom
## Multiple R-squared:  0.4574, Adjusted R-squared:  0.4528
## F-statistic: 100.7 on 4 and 478 DF,  p-value: < 2.2e-16
##
##
## Response ST_migrants :
##
## Call:
## lm(formula = ST_migrants ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##    Min     1Q Median     3Q    Max
##      0      0      0      0      0
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)                  0          0     NaN      NaN
## STE_G_nominal                0          0     NaN      NaN
## STE_G_instrumental           0          0     NaN      NaN
## STE_G_representation         0          0     NaN      NaN
## STE_G_transformative         0          0     NaN      NaN
##
## Residual standard error: 0 on 478 degrees of freedom
## Multiple R-squared:    NaN,  Adjusted R-squared:    NaN
## F-statistic:   NaN on 4 and 478 DF,  p-value: NA
##
##
## Response ST_youth :
##
## Call:
## lm(formula = ST_youth ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.05263  0.00000  0.00000  0.00000  0.96429
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)          -2.210e-17  3.881e-03   0.000   1.0000
## STE_G_nominal         3.571e-02  1.512e-02   2.362   0.0186 *
## STE_G_instrumental    5.263e-02  1.313e-02   4.008 7.11e-05 ***
## STE_G_representation -9.566e-22  2.364e-02   0.000   1.0000
## STE_G_transformative  3.849e-19  2.607e-02   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07734 on 478 degrees of freedom
## Multiple R-squared:  0.04104,    Adjusted R-squared:  0.03301
## F-statistic: 5.114 on 4 and 478 DF,  p-value: 0.0004836
##
##
## Response ST_public :
##
## Call:
## lm(formula = ST_public ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.2857  0.0000  0.0000  0.0000  0.9091
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)          1.743e-16  8.123e-03   0.000   1.0000
## STE_G_nominal        2.857e-01  3.165e-02   9.028  < 2e-16 ***
## STE_G_instrumental   1.316e-01  2.748e-02   4.788 2.25e-06 ***
## STE_G_representation 9.091e-02  4.947e-02   1.838   0.0667 .
## STE_G_transformative 2.222e-01  5.456e-02   4.073 5.43e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1618 on 478 degrees of freedom
## Multiple R-squared:  0.1906, Adjusted R-squared:  0.1839
## F-statistic: 28.14 on 4 and 478 DF,  p-value: < 2.2e-16
##
##
## Response ST_university :
##
## Call:
## lm(formula = ST_university ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.4444  0.0000  0.0000  0.0000  0.8929
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)          -4.395e-16  9.265e-03   0.000  1.00000
## STE_G_nominal         1.071e-01  3.609e-02   2.968  0.00314 **
## STE_G_instrumental    3.684e-01  3.135e-02  11.753  < 2e-16 ***
## STE_G_representation  3.636e-01  5.642e-02   6.445 2.83e-10 ***
```

```
## STE_G_transformative  4.444e-01  6.223e-02   7.142 3.44e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1846 on 478 degrees of freedom
## Multiple R-squared:  0.3129, Adjusted R-squared:  0.3072
## F-statistic: 54.42 on 4 and 478 DF,  p-value: < 2.2e-16
##
##
## Response ST_experts :
##
## Call:
## lm(formula = ST_experts ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.2368  0.0000  0.0000  0.0000  0.8889
##
## Coefficients:
##                        Estimate Std. Error t value Pr(>|t|)
## (Intercept)          -2.513e-16  8.220e-03   0.000 1.000000
## STE_G_nominal         1.429e-01  3.202e-02   4.461 1.02e-05 ***
## STE_G_instrumental    2.368e-01  2.781e-02   8.516  < 2e-16 ***
## STE_G_representation  1.818e-01  5.006e-02   3.632 0.000312 ***
## STE_G_transformative  1.111e-01  5.521e-02   2.013 0.044724 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1638 on 478 degrees of freedom
## Multiple R-squared:  0.1712, Adjusted R-squared:  0.1642
## F-statistic: 24.68 on 4 and 478 DF,  p-value: < 2.2e-16
```

Stakeholder type vs level of engagement (IAP2)

```
## Response ST_farmers :
##
## Call:
## lm(formula = ST_farmers ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.5000  0.0000  0.0000  0.0000  0.9494
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              3.435e-16  1.004e-02   0.000 1.000000
## STE_IAP2_data_gathering  4.447e-01  6.239e-02   7.127 3.84e-12 ***
## STE_IAP2_inform          1.292e-01  2.105e-01   0.614 0.539816
## STE_IAP2_consult         4.663e-01  3.673e-02  12.695  < 2e-16 ***
## STE_IAP2_involve         1.798e-01  7.850e-02   2.290 0.022467 *
## STE_IAP2_collab          2.857e-01  7.631e-02   3.744 0.000203 ***
## STE_IAP2_empower         5.000e-01  8.232e-02   6.074 2.56e-09 ***
## STE_IAP2_researcher     -1.292e-01  6.451e-02  -2.002 0.045839 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2001 on 475 degrees of freedom
## Multiple R-squared:  0.3633, Adjusted R-squared:  0.3539
## F-statistic: 38.71 on 7 and 475 DF,  p-value: < 2.2e-16
##
##
## Response ST_combined_gov :
##
## Call:
## lm(formula = ST_combined_gov ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.9502  0.0000  0.0000  0.0000  0.8206
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              9.093e-17  8.768e-03   0.000  1.00000
## STE_IAP2_data_gathering 1.794e-01  5.446e-02   3.295  0.00106 **
## STE_IAP2_inform          8.697e-01  1.838e-01   4.733 2.93e-06 ***
## STE_IAP2_consult         6.548e-01  3.206e-02  20.425  < 2e-16 ***
## STE_IAP2_involve         8.199e-01  6.852e-02  11.965  < 2e-16 ***
## STE_IAP2_collab          1.000e+00  6.661e-02  15.013  < 2e-16 ***
## STE_IAP2_empower         1.000e+00  7.185e-02  13.917  < 2e-16 ***
## STE_IAP2_researcher      1.303e-01  5.631e-02   2.315  0.02106 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 0.1747 on 475 degrees of freedom
## Multiple R-squared:  0.6822, Adjusted R-squared:  0.6775
## F-statistic: 145.7 on 7 and 475 DF,  p-value: < 2.2e-16
##
##
## Response ST_tribal :
##
## Call:
## lm(formula = ST_tribal ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.1290  0.0000  0.0000  0.0000  0.9656
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              1.137e-16  4.411e-03   0.000   1.0000
## STE_IAP2_data_gathering  1.290e-01  2.740e-02   4.710 3.26e-06 ***
## STE_IAP2_inform          4.516e-02  9.244e-02   0.489   0.6254
## STE_IAP2_consult         3.441e-02  1.613e-02   2.133   0.0334 *
## STE_IAP2_involve         1.290e-02  3.447e-02   0.374   0.7083
## STE_IAP2_collab         -5.947e-17  3.351e-02   0.000   1.0000
## STE_IAP2_empower        -5.563e-18  3.615e-02   0.000   1.0000
## STE_IAP2_researcher     -4.516e-02  2.833e-02  -1.594   0.1116
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08789 on 475 degrees of freedom
## Multiple R-squared:  0.07514,    Adjusted R-squared:  0.06151
## F-statistic: 5.513 on 7 and 475 DF,  p-value: 4.123e-06
##
##
## Response ST_combined_coalition :
##
## Call:
## lm(formula = ST_combined_coalition ~ STE_IAP2_data_gathering +
##     STE_IAP2_inform + STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab +
##     STE_IAP2_empower + STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.5714  0.0000  0.0000  0.0000  0.8747
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              -1.478e-16  8.106e-03   0.000  1.00000
## STE_IAP2_data_gathering -1.617e-01  5.035e-02  -3.212  0.00141 **
## STE_IAP2_inform         -2.870e-01  1.699e-01  -1.689  0.09180 .
## STE_IAP2_consult         2.466e-01  2.964e-02   8.321 9.31e-16 ***
## STE_IAP2_involve         3.466e-01  6.335e-02   5.471 7.26e-08 ***
## STE_IAP2_collab          5.714e-01  6.158e-02   9.280  < 2e-16 ***
```

```
## STE_IAP2_empower         3.333e-01  6.643e-02   5.018 7.40e-07 ***
## STE_IAP2_researcher      2.870e-01  5.206e-02   5.513 5.80e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1615 on 475 degrees of freedom
## Multiple R-squared:  0.3538, Adjusted R-squared:  0.3442
## F-statistic: 37.15 on 7 and 475 DF,  p-value: < 2.2e-16
##
##
## Response ST_combined_industry :
##
## Call:
## lm(formula = ST_combined_industry ~ STE_IAP2_data_gathering +
##     STE_IAP2_inform + STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab +
##     STE_IAP2_empower + STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.71613 -0.00252 -0.00252 -0.00252  0.99748
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)              0.002519   0.009670   0.260 0.794603
## STE_IAP2_data_gathering  0.158771   0.060065   2.643 0.008481 **
## STE_IAP2_inform          0.003933   0.202667   0.019 0.984526
## STE_IAP2_consult         0.573825   0.035360  16.228  < 2e-16 ***
## STE_IAP2_involve         0.713610   0.075576   9.442  < 2e-16 ***
## STE_IAP2_collab          0.283195   0.073463   3.855 0.000132 ***
## STE_IAP2_empower         0.497481   0.079251   6.277 7.78e-10 ***
## STE_IAP2_researcher     -0.006452   0.062106  -0.104 0.917308
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1927 on 475 degrees of freedom
## Multiple R-squared:  0.4568, Adjusted R-squared:  0.4488
## F-statistic: 57.07 on 7 and 475 DF,  p-value: < 2.2e-16
##
##
## Response ST_migrants :
##
## Call:
## lm(formula = ST_migrants ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##    Min     1Q Median     3Q    Max
##      0      0      0      0      0
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)                    0          0     NaN      NaN
## STE_IAP2_data_gathering        0          0     NaN      NaN
```

```
## STE_IAP2_inform                0          0     NaN      NaN
## STE_IAP2_consult               0          0     NaN      NaN
## STE_IAP2_involve               0          0     NaN      NaN
## STE_IAP2_collab                0          0     NaN      NaN
## STE_IAP2_empower               0          0     NaN      NaN
## STE_IAP2_researcher            0          0     NaN      NaN
##
## Residual standard error: 0 on 475 degrees of freedom
## Multiple R-squared:    NaN,  Adjusted R-squared:    NaN
## F-statistic:   NaN on 7 and 475 DF,  p-value: NA
##
##
## Response ST_youth :
##
## Call:
## lm(formula = ST_youth ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.06409  0.00000  0.00000  0.00000  0.96791
##
## Coefficients:
##                            Estimate Std. Error t value Pr(>|t|)
## (Intercept)              -1.200e-17  3.886e-03   0.000    1.000
## STE_IAP2_data_gathering   2.825e-02  2.414e-02   1.171    0.242
## STE_IAP2_inform          -3.837e-03  8.144e-02  -0.047    0.962
## STE_IAP2_consult          6.026e-02  1.421e-02   4.241 2.68e-05 ***
## STE_IAP2_involve         -1.096e-03  3.037e-02  -0.036    0.971
## STE_IAP2_collab          -2.708e-17  2.952e-02   0.000    1.000
## STE_IAP2_empower          6.422e-18  3.185e-02   0.000    1.000
## STE_IAP2_researcher       3.837e-03  2.496e-02   0.154    0.878
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07742 on 475 degrees of freedom
## Multiple R-squared:  0.04494,    Adjusted R-squared:  0.03086
## F-statistic: 3.193 on 7 and 475 DF,  p-value: 0.002588
##
##
## Response ST_public :
##
## Call:
## lm(formula = ST_public ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.3333  0.0000  0.0000  0.0000  0.8818
##
## Coefficients:
##                            Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)              7.578e-17  8.031e-03   0.000   1.0000
## STE_IAP2_data_gathering  2.553e-01  4.989e-02   5.118 4.49e-07 ***
## STE_IAP2_inform         -3.319e-02  1.683e-01  -0.197   0.8438
## STE_IAP2_consult         1.182e-01  2.937e-02   4.025 6.64e-05 ***
## STE_IAP2_involve         1.334e-01  6.277e-02   2.125   0.0341 *
## STE_IAP2_collab         -2.294e-15  6.101e-02   0.000   1.0000
## STE_IAP2_empower         3.333e-01  6.582e-02   5.064 5.88e-07 ***
## STE_IAP2_researcher      3.319e-02  5.158e-02   0.643   0.5203
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.16 on 475 degrees of freedom
## Multiple R-squared:  0.2137, Adjusted R-squared:  0.2021
## F-statistic: 18.44 on 7 and 475 DF,  p-value: < 2.2e-16
##
##
## Response ST_university :
##
## Call:
## lm(formula = ST_university ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.4334  0.0000  0.0000  0.0000  0.8787
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)             -3.662e-17  9.251e-03   0.000   1.0000
## STE_IAP2_data_gathering  1.383e-01  5.746e-02   2.407   0.0165 *
## STE_IAP2_inform          1.704e-02  1.939e-01   0.088   0.9300
## STE_IAP2_consult         3.955e-01  3.383e-02  11.691  < 2e-16 ***
## STE_IAP2_involve         4.334e-01  7.230e-02   5.995 4.03e-09 ***
## STE_IAP2_collab          4.286e-01  7.028e-02   6.098 2.22e-09 ***
## STE_IAP2_empower         3.333e-01  7.582e-02   4.397 1.36e-05 ***
## STE_IAP2_researcher     -1.704e-02  5.941e-02  -0.287   0.7744
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1843 on 475 degrees of freedom
## Multiple R-squared:  0.3192, Adjusted R-squared:  0.3092
## F-statistic: 31.82 on 7 and 475 DF,  p-value: < 2.2e-16
##
##
## Response ST_experts :
##
## Call:
## lm(formula = ST_experts ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
```

```
## -0.3456  0.0000  0.0000  0.0000  0.9376
##
## Coefficients:
##                            Estimate Std. Error t value Pr(>|t|)
## (Intercept)              -1.294e-16  8.066e-03   0.000   1.0000
## STE_IAP2_data_gathering  6.241e-02  5.010e-02   1.246   0.2135
## STE_IAP2_inform         -8.012e-02  1.691e-01  -0.474   0.6358
## STE_IAP2_consult         2.654e-01  2.950e-02   8.999  < 2e-16 ***
## STE_IAP2_involve         1.200e-01  6.304e-02   1.903   0.0576 .
## STE_IAP2_collab          2.857e-01  6.128e-02   4.663 4.06e-06 ***
## STE_IAP2_empower         3.555e-17  6.611e-02   0.000   1.0000
## STE_IAP2_researcher      8.012e-02  5.181e-02   1.547   0.1226
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1607 on 475 degrees of freedom
## Multiple R-squared:  0.2069, Adjusted R-squared:  0.1952
## F-statistic:  17.7 on 7 and 475 DF,  p-value: < 2.2e-16
```

Stakeholder type vs level of engagement (local)

```
## Response ST_farmers :
##
## Call:
## lm(formula = ST_farmers ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.47059 -0.02133 -0.02133 -0.02133  0.97867
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.02133    0.01021   2.088   0.0373 *
## SC_datagathering  0.44926    0.05191   8.655  < 2e-16 ***
## SC_inform        -0.02133    0.10541  -0.202   0.8398
## SC_perspectives   0.97867    0.21008   4.659 4.14e-06 ***
## SC_plan           0.25140    0.06409   3.923   0.0001 ***
## SC_identify       0.42312    0.05050   8.378 6.14e-16 ***
## SC_envision       0.97867    0.21008   4.659 4.14e-06 ***
## SC_implement      0.37867    0.09439   4.012 7.00e-05 ***
## SC_notdescribed  -0.02133    0.10541  -0.202   0.8398
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2098 on 474 degrees of freedom
## Multiple R-squared:  0.3016, Adjusted R-squared:  0.2898
## F-statistic: 25.58 on 8 and 474 DF,  p-value: < 2.2e-16
##
##
## Response ST_combined_gov :
##
## Call:
## lm(formula = ST_combined_gov ~ SC_datagathering + SC_inform +
##     SC_perspectives + SC_plan + SC_identify + SC_envision + SC_implement +
##     SC_notdescribed, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.83333 -0.02844 -0.02844 -0.02844  0.97156
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.02844    0.01014   2.803  0.00527 **
## SC_datagathering  0.32451    0.05155   6.295 7.03e-10 ***
## SC_inform         0.97156    0.10469   9.280  < 2e-16 ***
## SC_perspectives   0.97156    0.20865   4.656 4.18e-06 ***
## SC_plan           0.60793    0.06365   9.551  < 2e-16 ***
## SC_identify       0.80490    0.05016  16.047  < 2e-16 ***
## SC_envision       0.97156    0.20865   4.656 4.18e-06 ***
## SC_implement      0.97156    0.09375  10.363  < 2e-16 ***
## SC_notdescribed  -0.02844    0.10469  -0.272  0.78604
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2084 on 474 degrees of freedom
## Multiple R-squared:  0.5487, Adjusted R-squared:  0.5411
## F-statistic: 72.03 on 8 and 474 DF,  p-value: < 2.2e-16
##
##
## Response ST_tribal :
##
## Call:
## lm(formula = ST_tribal ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.11765 -0.00474 -0.00474 -0.00474  0.99526
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.004739   0.004333   1.094    0.275
## SC_datagathering  0.112908   0.022018   5.128 4.28e-07 ***
## SC_inform        -0.004739   0.044714  -0.106    0.916
## SC_perspectives  -0.004739   0.089113  -0.053    0.958
## SC_plan          -0.004739   0.027184  -0.174    0.862
## SC_identify      -0.004739   0.021422  -0.221    0.825
## SC_envision      -0.004739   0.089113  -0.053    0.958
## SC_implement     -0.004739   0.040041  -0.118    0.906
## SC_notdescribed  -0.004739   0.044714  -0.106    0.916
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08901 on 474 degrees of freedom
## Multiple R-squared:  0.05335,    Adjusted R-squared:  0.03738
## F-statistic: 3.339 on 8 and 474 DF,  p-value: 0.000989
##
##
## Response ST_combined_coalition :
##
## Call:
## lm(formula = ST_combined_coalition ~ SC_datagathering + SC_inform +
##     SC_perspectives + SC_plan + SC_identify + SC_envision + SC_implement +
##     SC_notdescribed, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.38889 -0.01422 -0.01422 -0.01422  0.98578
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.014218   0.008621   1.649  0.09975 .
## SC_datagathering  0.044606   0.043808   1.018  0.30910
## SC_inform         0.235782   0.088965   2.650  0.00831 **
```

```
## SC_perspectives   0.985782   0.177302   5.560 4.51e-08 ***
## SC_plan           0.258509   0.054087   4.780 2.35e-06 ***
## SC_identify       0.374671   0.042622   8.791  < 2e-16 ***
## SC_envision      -0.014218   0.177302  -0.080  0.93612
## SC_implement      0.185782   0.079666   2.332  0.02012 *
## SC_notdescribed  -0.014218   0.088965  -0.160  0.87309
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1771 on 474 degrees of freedom
## Multiple R-squared:  0.2246, Adjusted R-squared:  0.2115
## F-statistic: 17.16 on 8 and 474 DF,  p-value: < 2.2e-16
##
##
## Response ST_combined_industry :
##
## Call:
## lm(formula = ST_combined_industry ~ SC_datagathering + SC_inform +
##     SC_perspectives + SC_plan + SC_identify + SC_envision + SC_implement +
##     SC_notdescribed, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.72222 -0.01659 -0.01659 -0.01659  0.98341
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.016588   0.009805   1.692   0.0914 .
## SC_datagathering  0.218706   0.049827   4.389 1.40e-05 ***
## SC_inform         0.483412   0.101189   4.777 2.37e-06 ***
## SC_perspectives  -0.016588   0.201663  -0.082   0.9345
## SC_plan           0.437958   0.061518   7.119 4.05e-12 ***
## SC_identify       0.705635   0.048478  14.556  < 2e-16 ***
## SC_envision       0.983412   0.201663   4.877 1.48e-06 ***
## SC_implement      0.383412   0.090612   4.231 2.79e-05 ***
## SC_notdescribed   0.233412   0.101189   2.307   0.0215 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2014 on 474 degrees of freedom
## Multiple R-squared:  0.4076, Adjusted R-squared:  0.3976
## F-statistic: 40.77 on 8 and 474 DF,  p-value: < 2.2e-16
##
##
## Response ST_migrants :
##
## Call:
## lm(formula = ST_migrants ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##    Min     1Q Median     3Q    Max
##      0      0      0      0      0
```

```
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)              0          0     NaN      NaN
## SC_datagathering         0          0     NaN      NaN
## SC_inform                0          0     NaN      NaN
## SC_perspectives          0          0     NaN      NaN
## SC_plan                  0          0     NaN      NaN
## SC_identify              0          0     NaN      NaN
## SC_envision              0          0     NaN      NaN
## SC_implement             0          0     NaN      NaN
## SC_notdescribed          0          0     NaN      NaN
##
## Residual standard error: 0 on 474 degrees of freedom
## Multiple R-squared:    NaN,  Adjusted R-squared:    NaN
## F-statistic:   NaN on 8 and 474 DF,  p-value: NA
##
##
## Response ST_youth :
##
## Call:
## lm(formula = ST_youth ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.09091 -0.00237 -0.00237 -0.00237  0.99763
##
## Coefficients:
##                    Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0.002370   0.003775   0.628 0.530532
## SC_datagathering -0.002370   0.019186  -0.124 0.901753
## SC_inform        -0.002370   0.038962  -0.061 0.951528
## SC_perspectives  -0.002370   0.077649  -0.031 0.975667
## SC_plan           0.088539   0.023687   3.738 0.000208 ***
## SC_identify       0.053186   0.018666   2.849 0.004572 **
## SC_envision      -0.002370   0.077649  -0.031 0.975667
## SC_implement     -0.002370   0.034890  -0.068 0.945879
## SC_notdescribed  -0.002370   0.038962  -0.061 0.951528
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07756 on 474 degrees of freedom
## Multiple R-squared:  0.04367,    Adjusted R-squared:  0.02753
## F-statistic: 2.706 on 8 and 474 DF,  p-value: 0.006394
##
##
## Response ST_public :
##
## Call:
## lm(formula = ST_public ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
```

```
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.40000 -0.01896 -0.01896 -0.01896  0.98104
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.01896    0.00844   2.246  0.02516 *
## SC_datagathering  0.09869    0.04289   2.301  0.02183 *
## SC_inform         0.23104    0.08710   2.653  0.00826 **
## SC_perspectives  -0.01896    0.17359  -0.109  0.91309
## SC_plan           0.07195    0.05296   1.359  0.17488
## SC_identify       0.09215    0.04173   2.208  0.02770 *
## SC_envision      -0.01896    0.17359  -0.109  0.91309
## SC_implement      0.38104    0.07800   4.885 1.42e-06 ***
## SC_notdescribed  -0.01896    0.08710  -0.218  0.82780
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1734 on 474 degrees of freedom
## Multiple R-squared:  0.07887,    Adjusted R-squared:  0.06332
## F-statistic: 5.073 on 8 and 474 DF,  p-value: 4.544e-06
##
##
## Response ST_university :
##
## Call:
## lm(formula = ST_university ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.50000 -0.01185 -0.01185 -0.01185  0.98815
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.01185    0.00911   1.301 0.194039
## SC_datagathering  0.16462    0.04630   3.556 0.000414 ***
## SC_inform         0.48815    0.09402   5.192 3.09e-07 ***
## SC_perspectives  -0.01185    0.18737  -0.063 0.949605
## SC_plan           0.35179    0.05716   6.155 1.60e-09 ***
## SC_identify       0.43260    0.04504   9.604  < 2e-16 ***
## SC_envision       0.98815    0.18737   5.274 2.03e-07 ***
## SC_implement      0.38815    0.08419   4.610 5.17e-06 ***
## SC_notdescribed  -0.01185    0.09402  -0.126 0.899765
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1871 on 474 degrees of freedom
## Multiple R-squared:  0.2997, Adjusted R-squared:  0.2879
## F-statistic: 25.36 on 8 and 474 DF,  p-value: < 2.2e-16
##
##
```

```
## Response ST_experts :
##
## Call:
## lm(formula = ST_experts ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.50000 -0.01185 -0.01185 -0.01185  0.98815
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.011848   0.007813   1.516  0.13007
## SC_datagathering  0.105799   0.039704   2.665  0.00797 **
## SC_inform         0.488152   0.080630   6.054 2.87e-09 ***
## SC_perspectives  -0.011848   0.160691  -0.074  0.94125
## SC_plan           0.442697   0.049020   9.031  < 2e-16 ***
## SC_identify       0.099263   0.038629   2.570  0.01048 *
## SC_envision      -0.011848   0.160691  -0.074  0.94125
## SC_implement     -0.011848   0.072202  -0.164  0.86972
## SC_notdescribed  -0.011848   0.080630  -0.147  0.88324
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1605 on 474 degrees of freedom
## Multiple R-squared:  0.2107, Adjusted R-squared:  0.1974
## F-statistic: 15.82 on 8 and 474 DF,  p-value: < 2.2e-16
```

Stakeholder type vs solution

```
##
## Call:
## glm(formula = solution_proposed_YN ~ ST_farmers + ST_combined_gov +
##     ST_tribal + ST_combined_coalition + ST_combined_industry +
##     ST_migrants + ST_youth + ST_public + ST_university + ST_experts,
##     family = binomial, data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.2308  -0.1333  -0.1333  -0.1333   3.0748
##
## Coefficients: (1 not defined because of singularities)
##                         Estimate Std. Error z value Pr(>|z|)
## (Intercept)              -4.7183     0.5068  -9.310  < 2e-16 ***
## ST_farmers                0.7904     0.7745   1.020    0.308
## ST_combined_gov           3.5784     0.7733   4.627  3.7e-06 ***
## ST_tribal               -14.4256  1810.3784  -0.008    0.994
## ST_combined_coalition    -0.2779     0.7639  -0.364    0.716
## ST_combined_industry     -0.6386     0.7963  -0.802    0.423
## ST_migrants                   NA         NA      NA       NA
## ST_youth                -15.6653  1939.1448  -0.008    0.994
## ST_public                 0.7992     0.7884   1.014    0.311
## ST_university             0.2918     0.7387   0.395    0.693
## ST_experts                0.4654     0.8261   0.563    0.573
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.75  on 482  degrees of freedom
## Residual deviance: 101.16  on 473  degrees of freedom
## AIC: 121.16
##
## Number of Fisher Scoring iterations: 16
```

Geographic area vs solution

```
##
## Call:
## glm(formula = solution_proposed_YN ~ G_local + G_regional + G_national +
##     G_multination + G_global, family = binomial, data = crcdata)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.5010  -0.3118  -0.2450  -0.2450   2.7017
##
## Coefficients:
##                Estimate Std. Error z value Pr(>|z|)
## (Intercept)     -3.6234     0.9172  -3.951  7.8e-05 ***
## G_local          0.6236     0.9934   0.628    0.530
## G_regional       0.1319     1.0065   0.131    0.896
## G_national       0.9877     1.0097   0.978    0.328
## G_multination  -14.9427  1232.6632  -0.012    0.990
## G_global       -14.9427  1966.6497  -0.008    0.994
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 153.75  on 482  degrees of freedom
## Residual deviance: 148.35  on 477  degrees of freedom
## AIC: 160.35
##
## Number of Fisher Scoring iterations: 17
```

```
##
## Logistic regression predicting solution_proposed_YN
##
##                         crude OR(95%CI)   adj. OR(95%CI)     P(Wald's test)
## G_local: 1 vs 0         1.45 (0.53,3.96)  1.87 (0.27,13.07)  0.53
##
## G_regional: 1 vs 0      0.68 (0.25,1.84)  1.14 (0.16,8.2)    0.896
##
## G_national: 1 vs 0      2.21 (0.76,6.39)  2.69 (0.37,19.43)  0.328
##
## G_multination: 1 vs 0   0 (0,Inf)         0 (0,Inf)          0.99
##
## G_global: 1 vs 0        0 (0,Inf)         0 (0,Inf)          0.994
##
##                         P(LR-test)
## G_local: 1 vs 0         0.509
##
## G_regional: 1 vs 0      0.894
##
## G_national: 1 vs 0      0.295
##
## G_multination: 1 vs 0   0.282
##
## G_global: 1 vs 0        0.471
```

```
##
## Log-likelihood = -74.1769
## No. of observations = 483
## AIC value = 160.3537
```

stakeholder type vs geographic area

```
## Response ST_farmers :
##
## Call:
## lm(formula = ST_farmers ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.13965 -0.07389 -0.07389 -0.03918  0.96429
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.003248   0.037430   0.087   0.9309
## G_local        0.100465   0.043266   2.322   0.0207 *
## G_regional     0.070644   0.041286   1.711   0.0877 .
## G_national     0.035935   0.046866   0.767   0.4436
## G_multination  0.032467   0.060013   0.541   0.5888
## G_global      -0.003248   0.083680  -0.039   0.9691
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2482 on 477 degrees of freedom
## Multiple R-squared:  0.01639,    Adjusted R-squared:  0.006083
## F-statistic:  1.59 on 5 and 477 DF,  p-value: 0.1613
##
##
## Response ST_combined_gov :
##
## Call:
## lm(formula = ST_combined_gov ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.18923 -0.11944 -0.11330 -0.07143  0.94909
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.05091    0.04645   1.096    0.274
## G_local        0.06853    0.05370   1.276    0.203
## G_regional     0.06239    0.05124   1.218    0.224
## G_national     0.06978    0.05817   1.200    0.231
## G_multination  0.02052    0.07448   0.275    0.783
## G_global      -0.05091    0.10386  -0.490    0.624
##
## Residual standard error: 0.3081 on 477 degrees of freedom
## Multiple R-squared:  0.007528,   Adjusted R-squared:  -0.002875
## F-statistic: 0.7236 on 5 and 477 DF,  p-value: 0.606
##
##
## Response ST_tribal :
##
```

```
## Call:
## lm(formula = ST_tribal ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.02401 -0.02358 -0.00493 -0.00054  0.99507
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.0005384  0.0136751   0.039    0.969
## G_local        0.0234684  0.0158073   1.485    0.138
## G_regional     0.0043877  0.0150839   0.291    0.771
## G_national    -0.0008555  0.0171225  -0.050    0.960
## G_multination -0.0005384  0.0219258  -0.025    0.980
## G_global      -0.0005384  0.0305726  -0.018    0.986
##
## Residual standard error: 0.09069 on 477 degrees of freedom
## Multiple R-squared:  0.01105,    Adjusted R-squared:  0.0006802
## F-statistic: 1.066 on 5 and 477 DF,  p-value: 0.3786
##
##
## Response ST_combined_coalition :
##
## Call:
## lm(formula = ST_combined_coalition ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.09641 -0.04926 -0.04926 -0.03148  0.96852
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.002242   0.030103   0.074   0.9407
## G_local        0.029238   0.034797   0.840   0.4012
## G_regional     0.047019   0.033204   1.416   0.1574
## G_national     0.064930   0.037692   1.723   0.0856 .
## G_multination  0.033472   0.048265   0.694   0.4883
## G_global      -0.002242   0.067299  -0.033   0.9734
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1996 on 477 degrees of freedom
## Multiple R-squared:  0.008447,   Adjusted R-squared:  -0.001946
## F-statistic: 0.8127 on 5 and 477 DF,  p-value: 0.5409
##
##
## Response ST_combined_industry :
##
## Call:
## lm(formula = ST_combined_industry ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
```

```
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.14668 -0.08374 -0.08374 -0.07946  0.97333
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.02667    0.03912   0.682    0.496
## G_local        0.05280    0.04522   1.168    0.244
## G_regional     0.05708    0.04315   1.323    0.187
## G_national     0.06721    0.04898   1.372    0.171
## G_multination -0.02667    0.06272  -0.425    0.671
## G_global      -0.02667    0.08745  -0.305    0.761
##
## Residual standard error: 0.2594 on 477 degrees of freedom
## Multiple R-squared:  0.01127,    Adjusted R-squared:  0.0009061
## F-statistic: 1.087 on 5 and 477 DF,  p-value: 0.3664
##
##
## Response ST_migrants :
##
## Call:
## lm(formula = ST_migrants ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##    Min     1Q Median     3Q    Max
##      0      0      0      0      0
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)          0          0     NaN      NaN
## G_local              0          0     NaN      NaN
## G_regional           0          0     NaN      NaN
## G_national           0          0     NaN      NaN
## G_multination        0          0     NaN      NaN
## G_global             0          0     NaN      NaN
##
## Residual standard error: 0 on 477 degrees of freedom
## Multiple R-squared:    NaN,  Adjusted R-squared:    NaN
## F-statistic:   NaN on 5 and 477 DF,  p-value: NA
##
##
## Response ST_youth :
##
## Call:
## lm(formula = ST_youth ~ G_local + G_regional + G_national + G_multination +
##     G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.01600 -0.01600 -0.00493 -0.00036  0.99507
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)    0.0003589  0.0118848   0.030    0.976
## G_local        0.0156456  0.0137378   1.139    0.255
## G_regional     0.0045672  0.0131091   0.348    0.728
## G_national    -0.0005704  0.0148808  -0.038    0.969
## G_multination -0.0003589  0.0190552  -0.019    0.985
## G_global      -0.0003589  0.0265700  -0.014    0.989
##
## Residual standard error: 0.07882 on 477 degrees of freedom
## Multiple R-squared:  0.006139,   Adjusted R-squared:  -0.004279
## F-statistic: 0.5892 on 5 and 477 DF,  p-value: 0.7082
##
##
## Response ST_public :
##
## Call:
## lm(formula = ST_public ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.06427 -0.04722 -0.02463 -0.01328  0.98672
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.04722    0.02697   1.751   0.0806 .
## G_local        0.01705    0.03117   0.547   0.5846
## G_regional    -0.02259    0.02974  -0.759   0.4480
## G_national    -0.03393    0.03376  -1.005   0.3154
## G_multination -0.04722    0.04324  -1.092   0.2754
## G_global      -0.04722    0.06029  -0.783   0.4339
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1788 on 477 degrees of freedom
## Multiple R-squared:  0.0139, Adjusted R-squared:  0.003563
## F-statistic: 1.345 on 5 and 477 DF,  p-value: 0.2441
##
##
## Response ST_university :
##
## Call:
## lm(formula = ST_university ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.10037 -0.05911 -0.05911 -0.03145  0.97441
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.025590   0.033428   0.766    0.444
## G_local        0.005859   0.038641   0.152    0.880
## G_regional     0.033523   0.036872   0.909    0.364
## G_national     0.068925   0.041856   1.647    0.100
```

```
## G_multination  0.010124   0.053597   0.189    0.850
## G_global      -0.025590   0.074734  -0.342    0.732
##
## Residual standard error: 0.2217 on 477 degrees of freedom
## Multiple R-squared:  0.01114,    Adjusted R-squared:  0.000774
## F-statistic: 1.075 on 5 and 477 DF,  p-value: 0.3735
##
##
## Response ST_experts :
##
## Call:
## lm(formula = ST_experts ~ G_local + G_regional + G_national +
##     G_multination + G_global, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.05476 -0.04926 -0.04035 -0.01569  0.98431
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.001273   0.027023   0.047    0.962
## G_local        0.014414   0.031237   0.461    0.645
## G_regional     0.047988   0.029807   1.610    0.108
## G_national     0.039072   0.033836   1.155    0.249
## G_multination  0.034441   0.043327   0.795    0.427
## G_global      -0.001273   0.060414  -0.021    0.983
##
## Residual standard error: 0.1792 on 477 degrees of freedom
## Multiple R-squared:  0.009743,   Adjusted R-squared:  -0.0006375
## F-statistic: 0.9386 on 5 and 477 DF,  p-value: 0.4556
```

Geographic area vs engagment (Ghodsvali)

```
## Response G_local :
##
## Call:
## lm(formula = G_local ~ STE_G_nominal + STE_G_instrumental + STE_G_representation +
##     STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.5556 -0.2343 -0.2343  0.4444  0.8182
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           0.23426    0.02176  10.763  < 2e-16 ***
## STE_G_nominal         0.26574    0.08479   3.134  0.00183 **
## STE_G_instrumental    0.05522    0.07364   0.750  0.45371
## STE_G_representation -0.05244    0.13255  -0.396  0.69256
## STE_G_transformative  0.32130    0.14618   2.198  0.02843 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4336 on 478 degrees of freedom
## Multiple R-squared:  0.02981,    Adjusted R-squared:  0.02169
## F-statistic: 3.671 on 4 and 478 DF,  p-value: 0.005873
##
##
## Response G_regional :
##
## Call:
## lm(formula = G_regional ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.5454 -0.4156 -0.4156  0.5844  0.8889
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           0.41562    0.02477  16.782   <2e-16 ***
## STE_G_nominal         0.01295    0.09649   0.134   0.8933
## STE_G_instrumental    0.08438    0.08379   1.007   0.3144
## STE_G_representation  0.12984    0.15083   0.861   0.3898
## STE_G_transformative -0.30451    0.16634  -1.831   0.0678 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4935 on 478 degrees of freedom
## Multiple R-squared:  0.01092,    Adjusted R-squared:  0.00264
## F-statistic: 1.319 on 4 and 478 DF,  p-value: 0.2619
##
##
## Response G_national :
##
```

```
## Call:
## lm(formula = G_national ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.2727 -0.1587 -0.1587 -0.1579  0.8421
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)           0.1586902  0.0180451   8.794   <2e-16 ***
## STE_G_nominal        -0.1586902  0.0703031  -2.257   0.0244 *
## STE_G_instrumental   -0.0007954  0.0610536  -0.013   0.9896
## STE_G_representation  0.1140371  0.1098987   1.038   0.3000
## STE_G_transformative  0.0635320  0.1211994   0.524   0.6004
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3595 on 478 degrees of freedom
## Multiple R-squared:  0.01388,    Adjusted R-squared:  0.005632
## F-statistic: 1.682 on 4 and 478 DF,  p-value: 0.1528
##
##
## Response G_multination :
##
## Call:
## lm(formula = G_multination ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.11111 -0.06297 -0.06297 -0.06297  0.97368
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           0.06297    0.01176   5.354 1.34e-07 ***
## STE_G_nominal        -0.02726    0.04582  -0.595    0.552
## STE_G_instrumental   -0.03666    0.03980  -0.921    0.357
## STE_G_representation -0.06297    0.07163  -0.879    0.380
## STE_G_transformative  0.04814    0.07900   0.609    0.543
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2344 on 478 degrees of freedom
## Multiple R-squared:  0.004711,   Adjusted R-squared:  -0.003618
## F-statistic: 0.5656 on 4 and 478 DF,  p-value: 0.6877
##
##
## Response G_global :
##
## Call:
## lm(formula = G_global ~ STE_G_nominal + STE_G_instrumental +
##     STE_G_representation + STE_G_transformative, data = crcdata)
##
```

```
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.02771 -0.02771 -0.02771 -0.02771  0.97229
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)              0.027708   0.007507   3.691 0.000249 ***
## STE_G_nominal           -0.027708   0.029248  -0.947 0.343949
## STE_G_instrumental      -0.027708   0.025400  -1.091 0.275890
## STE_G_representation    -0.027708   0.045721  -0.606 0.544793
## STE_G_transformative    -0.027708   0.050423  -0.550 0.582913
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1496 on 478 degrees of freedom
## Multiple R-squared:  0.005048,   Adjusted R-squared:  -0.003277
## F-statistic: 0.6064 on 4 and 478 DF,  p-value: 0.6582
```

Geographic area vs engagment (IAP2)

```
## Response G_local :
##
## Call:
## lm(formula = G_local ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.8333 -0.2343 -0.2343  0.1667  0.7657
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)               0.23426    0.02160  10.845  < 2e-16 ***
## STE_IAP2_data_gathering   0.24329    0.13417   1.813 0.070425 .
## STE_IAP2_inform           0.77700    0.45272   1.716 0.086758 .
## STE_IAP2_consult          0.03949    0.07899   0.500 0.617305
## STE_IAP2_involve          0.05467    0.16882   0.324 0.746188
## STE_IAP2_collab          -0.23426    0.16410  -1.428 0.154090
## STE_IAP2_empower          0.59908    0.17703   3.384 0.000773 ***
## STE_IAP2_researcher      -0.01126    0.13873  -0.081 0.935353
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4304 on 475 degrees of freedom
## Multiple R-squared:  0.05031,    Adjusted R-squared:  0.03631
## F-statistic: 3.595 on 7 and 475 DF,  p-value: 0.0008762
##
##
## Response G_regional :
##
## Call:
## lm(formula = G_regional ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.6289 -0.4156 -0.4156  0.5844  0.6377
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)               0.41562    0.02473  16.804   <2e-16 ***
## STE_IAP2_data_gathering   0.14774    0.15363   0.962   0.3367
## STE_IAP2_inform          -0.21452    0.51838  -0.414   0.6792
## STE_IAP2_consult          0.14812    0.09044   1.638   0.1021
## STE_IAP2_involve          0.21327    0.19331   1.103   0.2705
## STE_IAP2_collab           0.01295    0.18790   0.069   0.9451
## STE_IAP2_empower         -0.41562    0.20271  -2.050   0.0409 *
## STE_IAP2_researcher      -0.20110    0.15885  -1.266   0.2062
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 0.4928 on 475 degrees of freedom
## Multiple R-squared:  0.0197, Adjusted R-squared:  0.005251
## F-statistic: 1.363 on 7 and 475 DF,  p-value: 0.2188
##
##
## Response G_national :
##
## Call:
## lm(formula = G_national ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.4286 -0.1587 -0.1587 -0.1376  0.9352
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)               0.158690   0.018043   8.795   <2e-16 ***
## STE_IAP2_data_gathering -0.247453   0.112074  -2.208   0.0277 *
## STE_IAP2_inform         -0.312306   0.378152  -0.826   0.4093
## STE_IAP2_consult        -0.021140   0.065978  -0.320   0.7488
## STE_IAP2_involve        -0.059723   0.141015  -0.424   0.6721
## STE_IAP2_collab          0.269881   0.137073   1.969   0.0495 *
## STE_IAP2_empower         0.007976   0.147873   0.054   0.9570
## STE_IAP2_researcher      0.153616   0.115882   1.326   0.1856
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3595 on 475 degrees of freedom
## Multiple R-squared:  0.02029,    Adjusted R-squared:  0.005848
## F-statistic: 1.405 on 7 and 475 DF,  p-value: 0.201
##
##
## Response G_multination :
##
## Call:
## lm(formula = G_multination ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.14286 -0.06297 -0.06297 -0.06297  0.93703
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)               0.06297    0.01177   5.349 1.38e-07 ***
## STE_IAP2_data_gathering -0.03599    0.07313  -0.492    0.623
## STE_IAP2_inform         -0.10843    0.24675  -0.439    0.661
## STE_IAP2_consult        -0.06710    0.04305  -1.559    0.120
## STE_IAP2_involve        -0.07596    0.09201  -0.826    0.409
## STE_IAP2_collab          0.07988    0.08944   0.893    0.372
```

```
## STE_IAP2_empower        -0.06297    0.09649  -0.653    0.514
## STE_IAP2_researcher      0.04546    0.07561   0.601    0.548
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2346 on 475 degrees of freedom
## Multiple R-squared:  0.009056,   Adjusted R-squared:  -0.005548
## F-statistic: 0.6201 on 7 and 475 DF,  p-value: 0.7394
##
##
## Response G_global :
##
## Call:
## lm(formula = G_global ~ STE_IAP2_data_gathering + STE_IAP2_inform +
##     STE_IAP2_consult + STE_IAP2_involve + STE_IAP2_collab + STE_IAP2_empower +
##     STE_IAP2_researcher, data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.02771 -0.02771 -0.02771 -0.02771  0.97229
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              2.771e-02  7.531e-03   3.679 0.000261 ***
## STE_IAP2_data_gathering -2.771e-02  4.678e-02  -0.592 0.553919
## STE_IAP2_inform         -2.771e-02  1.578e-01  -0.176 0.860724
## STE_IAP2_consult        -2.771e-02  2.754e-02  -1.006 0.314854
## STE_IAP2_involve        -2.771e-02  5.886e-02  -0.471 0.638032
## STE_IAP2_collab         -2.771e-02  5.721e-02  -0.484 0.628401
## STE_IAP2_empower        -2.771e-02  6.172e-02  -0.449 0.653691
## STE_IAP2_researcher     -5.592e-17  4.837e-02   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1501 on 475 degrees of freedom
## Multiple R-squared:  0.005048,   Adjusted R-squared:  -0.009614
## F-statistic: 0.3443 on 7 and 475 DF,  p-value: 0.9332
```

Geographic area vs engagment (local)

```
## Response G_local :
##
## Call:
## lm(formula = G_local ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.6000 -0.2488 -0.2488  0.6111  0.7512
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.248815   0.021349  11.655   <2e-16 ***
## SC_datagathering  0.104126   0.108488   0.960   0.3376
## SC_inform        -0.248815   0.220316  -1.129   0.2593
## SC_perspectives  -0.248815   0.439078  -0.567   0.5712
## SC_plan           0.023912   0.133943   0.179   0.8584
## SC_identify       0.140074   0.105551   1.327   0.1851
## SC_envision      -0.248815   0.439078  -0.567   0.5712
## SC_implement      0.351185   0.197288   1.780   0.0757 .
## SC_notdescribed   0.001185   0.220316   0.005   0.9957
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4386 on 474 degrees of freedom
## Multiple R-squared:  0.01601,    Adjusted R-squared:  -0.0005928
## F-statistic: 0.9643 on 8 and 474 DF,  p-value: 0.4632
##
##
## Response G_regional :
##
## Call:
## lm(formula = G_regional ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.7500 -0.4123 -0.4123  0.5877  0.8000
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.41232    0.02402  17.164   <2e-16 ***
## SC_datagathering  0.23474    0.12207   1.923   0.0551 .
## SC_inform         0.33768    0.24791   1.362   0.1738
## SC_perspectives   0.58768    0.49406   1.189   0.2348
## SC_plan          -0.04869    0.15072  -0.323   0.7468
## SC_identify       0.03212    0.11877   0.270   0.7869
## SC_envision      -0.41232    0.49406  -0.835   0.4044
## SC_implement     -0.21232    0.22199  -0.956   0.3393
## SC_notdescribed  -0.16232    0.24791  -0.655   0.5129
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4935 on 474 degrees of freedom
## Multiple R-squared:  0.01914,    Adjusted R-squared:  0.00259
## F-statistic: 1.156 on 8 and 474 DF,  p-value: 0.324
##
##
## Response G_national :
##
## Call:
## lm(formula = G_national ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.2727 -0.1540 -0.1540 -0.1540  0.8460
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.15403    0.01749   8.804   <2e-16 ***
## SC_datagathering -0.15403    0.08890  -1.733   0.0838 .
## SC_inform        -0.15403    0.18054  -0.853   0.3940
## SC_perspectives  -0.15403    0.35981  -0.428   0.6688
## SC_plan           0.11870    0.10976   1.081   0.2801
## SC_identify       0.01264    0.08650   0.146   0.8839
## SC_envision       0.84597    0.35981   2.351   0.0191 *
## SC_implement      0.04597    0.16167   0.284   0.7763
## SC_notdescribed   0.09597    0.18054   0.532   0.5953
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3594 on 474 degrees of freedom
## Multiple R-squared:  0.02302,    Adjusted R-squared:  0.006532
## F-statistic: 1.396 on 8 and 474 DF,  p-value: 0.1956
##
##
## Response G_multination :
##
## Call:
## lm(formula = G_multination ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.09091 -0.06398 -0.06398 -0.06398  0.93602
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.06398    0.01144   5.592 3.79e-08 ***
## SC_datagathering -0.06398    0.05814  -1.101    0.272
## SC_inform        -0.06398    0.11807  -0.542    0.588
```

```
## SC_perspectives  -0.06398    0.23530  -0.272    0.786
## SC_plan           0.02693    0.07178   0.375    0.708
## SC_identify      -0.06398    0.05656  -1.131    0.259
## SC_envision      -0.06398    0.23530  -0.272    0.786
## SC_implement     -0.06398    0.10573  -0.605    0.545
## SC_notdescribed  -0.06398    0.11807  -0.542    0.588
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.235 on 474 degrees of freedom
## Multiple R-squared:  0.007401,   Adjusted R-squared:  -0.009352
## F-statistic: 0.4418 on 8 and 474 DF,  p-value: 0.8958
##
##
## Response G_global :
##
## Call:
## lm(formula = G_global ~ SC_datagathering + SC_inform + SC_perspectives +
##     SC_plan + SC_identify + SC_envision + SC_implement + SC_notdescribed,
##     data = crcdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.02607 -0.02607 -0.02607 -0.02607  0.97393
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       0.026066   0.007318   3.562 0.000406 ***
## SC_datagathering -0.026066   0.037190  -0.701 0.483709
## SC_inform        -0.026066   0.075525  -0.345 0.730146
## SC_perspectives  -0.026066   0.150517  -0.173 0.862585
## SC_plan          -0.026066   0.045916  -0.568 0.570509
## SC_identify      -0.026066   0.036183  -0.720 0.471633
## SC_envision      -0.026066   0.150517  -0.173 0.862585
## SC_implement     -0.026066   0.067631  -0.385 0.700098
## SC_notdescribed  -0.026066   0.075525  -0.345 0.730146
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1503 on 474 degrees of freedom
## Multiple R-squared:  0.003369,   Adjusted R-squared:  -0.01345
## F-statistic: 0.2003 on 8 and 474 DF,  p-value: 0.9907
```