Ambio

Electronic Supplementary Material

This supplementary material has not been peer reviewed.

Title: **Storing and sharing: A review of Indigenous and Local Knowledge conservation initiatives**

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```
ENTERED VARIABLES ONE BY ONE

INDUSTRIALIZED

glm(formula = P_Inclusiveness ~ L_Industrialized, family = binomial,
    data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.1483  -0.6421  -0.6421   0.2824   1.8333

Coefficients:
                   Estimate Std. Error z value Pr(>|z|)
(Intercept)         -1.4744     0.2543  -5.797 6.74e-09 ***
L_Industrialized1   1.4054     0.4503   3.121   0.0018 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 147.88  on 130  degrees of freedom
Residual deviance: 138.25  on 129  degrees of freedom
  (7 observations deleted due to missingness)
AIC: 142.25

Number of Fisher Scoring iterations: 4

IT

glm(formula = P_Inclusiveness ~ M_IT, family = binomial, data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.2858  -0.5811  -0.5811   0.2458   1.9298

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept)  -1.6933     0.2720  -6.225 4.81e-10 ***
M_IT21        1.9446     0.4483   4.338 1.44e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 152.38  on 134  degrees of freedom
Residual deviance: 132.82  on 133  degrees of freedom
  (3 observations deleted due to missingness)
AIC: 136.82

Number of Fisher Scoring iterations: 3

TYPE ILK

glm(formula = P_Inclusiveness ~ I_TypeILK_2, family = binomial,
    data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.1073  -0.7815  -0.4783   0.4505   2.3804

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept)  -0.3185     0.4647  -0.685    0.493
I_TypeTK_22   0.1514     0.6195   0.244    0.807
```

```
I_TypeTK_23  -2.4541     1.1307  -2.171    0.030 *
I_TypeTK_24  -1.7918     0.7044  -2.544    0.011 *
I_TypeTK_25  -0.7112     0.5930  -1.199    0.230
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 152.38  on 134  degrees of freedom
Residual deviance: 135.72  on 130  degrees of freedom
  (3 observations deleted due to missingness)
AIC: 145.72

Number of Fisher Scoring iterations: 5
```

APPROACH

```
glm(formula = P_Inclusiveness ~ I_ApproachGroup2, family = binomial,
    data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.2435  -0.6905  -0.6905   0.7631   2.5373

Coefficients:
                  Estimate Std. Error z value Pr(>|z|)
(Intercept)        -0.4055     0.6455  -0.628   0.5299
I_ApproachGroup22   0.1542     0.8189   0.188   0.8507
I_ApproachGroup23   0.5596     0.8522   0.657   0.5114
I_ApproachGroup24  -2.7726     1.2074  -2.296   0.0217 *
I_ApproachGroup25  -0.9067     0.7123  -1.273   0.2030
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 147.30  on 129  degrees of freedom
Residual deviance: 129.94  on 125  degrees of freedom
  (8 observations deleted due to missingness)
AIC: 139.94

Number of Fisher Scoring iterations: 5
```

MOST EXPLICATIVE = APPROACH -> KEEP ADDING...

APR + IT

```
glm(formula = P_Inclusiveness ~ I_ApproachGroup2 + M_IT, family = binomial,
    data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.8862  -0.4589  -0.4589   0.3424   2.1462

Coefficients:
                  Estimate Std. Error z value Pr(>|z|)
(Intercept)        -1.5610     0.8017  -1.947 0.051504 .
I_ApproachGroup22   1.0768     0.9461   1.138 0.255038
I_ApproachGroup23   1.3242     0.9779   1.354 0.175688
I_ApproachGroup24  -1.8234     1.2893  -1.414 0.157304
I_ApproachGroup25  -0.6368     0.8007  -0.795 0.426430
M_IT21              2.0783     0.5414   3.838 0.000124 ***
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 147.30  on 129  degrees of freedom
Residual deviance: 113.28  on 124  degrees of freedom
  (8 observations deleted due to missingness)
AIC: 125.28

Number of Fisher Scoring iterations: 5


Analysis of Deviance Table

Model: binomial, link: logit

Response: P_Inclusiveness

Terms added sequentially (first to last)


                 Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                              129     147.30
I_ApproachGroup2  4   17.352       125     129.94  0.001651 **
M_IT              1   16.663       124     113.28 4.465e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

APPR + INDUST

glm(formula = P_Inclusiveness ~ I_ApproachGroup2 + L_Industrialized,
    family = binomial, data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.5730  -0.5528  -0.5528   0.2583   2.0750

Coefficients:
                   Estimate Std. Error z value Pr(>|z|)
(Intercept)        -0.69315    0.70711  -0.980  0.32696
I_ApproachGroup22   0.25479    0.87892   0.290  0.77190
I_ApproachGroup23   0.02339    0.96581   0.024  0.98068
I_ApproachGroup24  -2.90032    1.27512  -2.275  0.02293 *
I_ApproachGroup25  -1.10806    0.80290  -1.380  0.16756
L_Industrialized1  1.56423    0.52473   2.981  0.00287 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 143.38  on 126  degrees of freedom
Residual deviance: 118.30  on 121  degrees of freedom
  (11 observations deleted due to missingness)
AIC: 130.3

Number of Fisher Scoring iterations: 5

Analysis of Deviance Table

Model: binomial, link: logit

Response: P_Inclusiveness
```

```
Terms added sequentially (first to last)


                  Df Deviance Resid. Df Resid. Dev Pr(>Chi)
NULL                                126     143.38
I_ApproachGroup2   4  16.0033       122     127.38 0.003015 **
L_Industrialized  1   9.0753       121     118.30 0.002591 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

APR+TYPEILK

glm(formula = P_Inclusiveness ~ I_ApproachGroup2 + I_TypeILK_2,
    family = binomial, data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.4802  -0.5734  -0.3084   0.6479   3.1689

Coefficients:
                  Estimate Std. Error z value Pr(>|z|)
(Intercept)       -0.20054    0.79821  -0.251   0.8016
I_ApproachGroup22  0.78280    0.91149   0.859   0.3904
I_ApproachGroup23 -0.05401    1.02811  -0.053   0.9581
I_ApproachGroup24 -3.14709    1.24757  -2.523   0.0116 *
I_ApproachGroup25 -0.51688    0.78263  -0.660   0.5090
I_TypeILK_22       0.87108    0.79222   1.100   0.2715
I_TypeILK_23      -2.30433    1.17009  -1.969   0.0489 *
I_TypeILK_24      -1.66669    0.74589  -2.235   0.0254 *
I_TypeILK_25       0.10621    0.69346   0.153   0.8783
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 147.30  on 129  degrees of freedom
Residual deviance: 111.37  on 121  degrees of freedom
  (8 observations deleted due to missingness)
AIC: 129.37

Number of Fisher Scoring iterations: 6

Analysis of Deviance Table

Model: binomial, link: logit

Response: P_Inclusiveness

Terms added sequentially (first to last)


                 Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                               129     147.30
I_ApproachGroup2  4   17.352       125     129.94 0.0016512 **
I_TypeILK_2        4   18.576       121     111.37 0.0009517 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1



2nd MOST EXPLICATIVE = IT... KEEP ADDING


APR+IT+ IND
```

```
glm(formula = P_Inclusiveness ~ I_ApproachGroup2 + M_IT + L_Industrialized,
    family = binomial, data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.6737  -0.6904  -0.4225   0.1313   2.2184

Coefficients:
                   Estimate Std. Error z value Pr(>|z|)
(Intercept)         -1.5722     0.8330  -1.887  0.05913 .
I_ApproachGroup22    0.9769     0.9759   1.001  0.31679
I_ApproachGroup23    0.8683     1.0727   0.809  0.41829
I_ApproachGroup24   -2.0882     1.3560  -1.540  0.12355
I_ApproachGroup25   -0.7992     0.8677  -0.921  0.35701
M_IT1               1.7128     0.5639   3.037  0.00239 **
L_Industrialized1   1.0587     0.5625   1.882  0.05981 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 143.38  on 126  degrees of freedom
Residual deviance: 108.44  on 120  degrees of freedom
  (11 observations deleted due to missingness)
AIC: 122.44

Number of Fisher Scoring iterations: 6


Analysis of Deviance Table

Model: binomial, link: logit

Response: P_Inclusiveness

Terms added sequentially (first to last)


                  Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                                126     143.38
I_ApproachGroup   4  16.0033       122     127.38  0.003015 **
M_IT              1  15.4093       121     111.97 8.656e-05 ***
L_Industrialized  1   3.5263       120     108.44  0.060401 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

APR+IT+TYPEILK

glm(formula = P_Inclusiveness ~ I_ApproachGroup2 + M_IT + I_TypeILK_2,
    family = binomial, data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.4998  -0.6777  -0.2913   0.2962   2.5223

Coefficients:
                  Estimate Std. Error z value Pr(>|z|)
(Intercept)       -1.18891    0.93647  -1.270  0.20424
I_ApproachGroup22  1.57824    1.02160   1.545  0.12238
I_ApproachGroup23  1.38030    1.20337   1.147  0.25137
I_ApproachGroup24 -1.93303    1.33105  -1.452  0.14643
I_ApproachGroup25 -0.14515    0.86626  -0.168  0.86693
M_IT1              1.92095    0.64367   2.984  0.00284 **
```

```
I_TypeILK_22       -0.22413    0.90469  -0.248  0.80433
I_TypeILK_23       -2.17974    1.20666  -1.806  0.07085 .
I_TypeILK_24       -1.80458    0.80052  -2.254  0.02418 *
I_TypeILK_25        0.06384    0.74417   0.086  0.93164
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 147.30  on 129  degrees of freedom
Residual deviance: 101.65  on 120  degrees of freedom
  (8 observations deleted due to missingness)
AIC: 121.65

Number of Fisher Scoring iterations: 5

Analysis of Deviance Table

Model: binomial, link: logit

Response: P_Inclusiveness

Terms added sequentially (first to last)


                 Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                              129     147.30
I_ApproachGroup2  4   17.352       125     129.94  0.001651 **
M_IT              1   16.663       124     113.28 4.465e-05 ***
I_TypeILK_2        4   11.630       120     101.65  0.020325 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


3rd MOST EXPLICATIVE TypeILK


FINAL APP+IT+ILK+IND

glm(formula = P_Inclusiveness ~ I_ApproachGroup2 + M_IT + I_TypeILK_2 +
    L_Industrialized, family = binomial, data = TKCON_LOGIT)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-2.0043  -0.6242  -0.2907   0.1876   2.5240

Coefficients:
                   Estimate Std. Error z value Pr(>|z|)
(Intercept)        -1.20417    0.95191  -1.265   0.2059
I_ApproachGroup22   1.47792    1.04950   1.408   0.1591
I_ApproachGroup23   1.31100    1.24515   1.053   0.2924
I_ApproachGroup24  -2.10874    1.36291  -1.547   0.1218
I_ApproachGroup25  -0.10437    0.91704  -0.114   0.9094
M_IT1              1.62991    0.65868   2.475   0.0133 *
I_TypeILK_22        -1.16326    1.05571  -1.102   0.2705
I_TypeILK_23        -2.77658    1.29252  -2.148   0.0317 *
I_TypeILK_24        -1.83455    0.79526  -2.307   0.0211 *
I_TypeILK_25         0.02629    0.75359   0.035   0.9722
L_Industrialized1  1.51686    0.77800   1.950   0.0512 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)
```

```
    Null deviance: 143.380  on 126  degrees of freedom
Residual deviance:  96.262  on 116  degrees of freedom
  (11 observations deleted due to missingness)
AIC: 118.26

Number of Fisher Scoring iterations: 6

Analysis of Deviance Table

Model: binomial, link: logit

Response: P_Inclusiveness

Terms added sequentially (first to last)


                  Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                                126    143.380
I_ApproachGroup2   4  16.0033       122    127.377  0.003015 **
M_IT               1  15.4093       121    111.967 8.656e-05 ***
I_TypeILK_2        4  11.6648       117    100.302  0.020026 *
L_Industrialized   1   4.0405       116     96.262  0.044419 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


CHECK WITH AUTOMATIC DROP METHOD

drop(reducedlogit)

Call:  glm(formula = P_Inclusiveness ~ I_ApproachGroup2 + M_IT + I_TypeILK_2 +
    L_Industrialized, family = binomial, data = TKCON_LOGIT)

Coefficients:
       (Intercept)   I_ApproachGroup22   I_ApproachGroup23   I_ApproachGroup24
          -1.20417             1.47792             1.31100             -2.10874
 I_ApproachGroup25              M_IT1         I_TypeILK_22         I_TypeILK_23

          -0.10437             1.62991            -1.16326             -2.77658
       I_TypeILK_24        I_TypeILK_25  L_Industrialized1
          -1.83455             0.02629             1.51686

Degrees of Freedom: 126 Total (i.e. Null);  116 Residual
  (11 observations deleted due to missingness)
Null Deviance:        143.4
Residual Deviance: 96.26     AIC: 118.3


CHECK DELTA AIC AND AIC WEIGHT


> model.names <- c("1 Approach", "2 Approach + IT", "3 Approach + IT + TypeILK",
"4 Approach + IT + TypeILK + Industrialized")
> install.packages("bbmle")
> reported.table <- bbmle::AICtab(m1, m2, m3, m4, weights = TRUE, sort = FALSE,
mnames = model.names)
> reported.table
                                        dAIC df weight
1 Approach                              23.1 2  <0.001
2 Approach + IT                          7.1 3  0.02
3 Approach + IT + TypeILK                1.8 4  0.28
4 Approach + IT + TypeILK + Industrialized  0.0 5  0.70
>
```

WE KEEP ALL PARAMETERS IN FINAL MODEL

CHECK EFFECTS (CONVERTED ODDS-RATIO)

```
> allEffects(reducedlogit)
 model: P_Inclusiveness ~ I_ApproachGroup2 + M_IT + I_TypeILK_2 +
L_Industrialized

I_ApproachGroup2 effect
I_ApproachGroup2
         1          2          3          4          5
0.17588114 0.48335936 0.44188734 0.02525275 0.16126070


M_IT effect
M_IT
        0         1
0.1129402 0.3938542


I_TypeILK_2 effect
I_TypeILK_2
         1          2          3          4          5
0.35335833 0.14584445 0.03289803 0.08025716 0.35938787


L_Industrialized effect
L_Industrialized
        0         1
0.1168706 0.3762384

> plot (allEffects(reducedlogit))
```


CHECK MULTICOLINEARITY WITH VIF

```
> vif(reducedlogit)
 I_ApproachGroup22  I_ApproachGroup23  I_ApproachGroup24  I_ApproachGroup25
          2.597337           3.111756           1.635419           3.189842
            M_IT1        I_TypeILK_22        I_TypeILK_23        I_TypeILK_24
          1.516073           3.134921           1.378569           1.554636
       I_TypeILK_25 L_Industrialized1
          1.667774           1.892718
```

NONE HIGHER THAN 5

CHECK RESIDUAL CORRELATION

```
> durbinWatsonTest(reducedlogit)
 lag Autocorrelation D-W Statistic p-value
   1      0.05876117      1.873431   0.398
 Alternative hypothesis: rho != 0
```

NO REJECTION OF HO=INDEPENDENCE OF RESIDUALS